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. THE CONTRACTOR SHALL INCLUDE, AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, DUCTWORK, ETC. CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED EQUIPMENT, PIPES, DUCTWORK AND EQUIPMENT PRIOR TO REMOVAL. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF (ABOVE THIS SPACE) NOT APPLICABLE TO THE NEW WORK OR PART OF THE LANDLORD'S OR ANOTHER TENANT'S ACTIVE SYSTEM MUST BE REMOVED AND ROOF / WALL / FLOOR MUST BE PATCHED / REPAIRED TO MATCH THE EXISTING STRUCTURE. EXISTING ABANDONED PIPES, DUCTS OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT REUSED IN THIS PROJECT.

A. 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.

2. TENANT'S CONSTRUCTION MANAGER'S OR ARCHITECT'S REVIEW OF SHOP DRAWINGS OR SCHEDULES SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS OR OTHER DEFICIENCIES OR DEVIATIONS IN THE SHOP DRAWINGS FROM THE CONSTRUCTION DOCUMENTS.

3. 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 ARCHITECT FOR THEIR REVIEW PRIOR TO CONSTRUCTION.

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, MATERIAL, 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. STEEL FRAMING FOR SUPPORT

1. THIS CONTRACTOR WILL PROVIDE ALL NECESSARY STEEL FRAMING REQUIRED TO INSTALL ALL HVAC EQUIPMENT. COORDINATE WITH STRUCTURAL ENGINEER FOR THE HVAC EQUIPMENT SUPPORTS.

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.

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. ALL OUTSIDE AIR AND UNEXPOSED DUCTWORK WITHIN BUILDING, EXCEPT WHERE ACOUSTICALLY LINED, SHALL HAVE 2-INCH, FIBERGLASS DUCT WRAP INSULATION WITH FSK FACING EQUIVALENT TO JOHNS MANVILLE "MICROLITE XG TYPE 75" (INSTALLED "R VALUE" = 6).

3. ALL EXPOSED DUCTWORK INSIDE THE BUILDING SHALL BE INSULATED WITH NOT LESS THAN R-8 INSULATION.

4. 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.

5. ALL INSULATION ON EXISTING PIPING OR DUCTS THAT BECOMES WET, DAMAGED, DISTURBED OR GETS REMOVED SHALL BE REPLACED.

6. INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES. INSULATION MUST COMPLY WITH NFPA 90A.

7. 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.

O. INORGANIC GLASS FIBERS PREFORMED AND BONDED BY THERMOSETTING RESIN. MUST COMPLY WITH ASTM C 612, TYPE 1A & 1B, KNAUF INSULATION OR APPROVED EQUIVALENT.

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'.

9. MINIMUM INSULATION REQUIREMENTS AS PER GEORGIA ENERGY CODE 2020 (IECC 2015):
UNCONDITIONED SPACES WITHIN BUILDING: R-6
WITHIN BUILDING ENVELOPE ASSEMBLY: R-8
OUTSIDE OF BUILDING: R-8

O. PIPING INSULATION

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

INSULATION SCHEDULE - PIPING

SERVICE	SIZE	THICKNESS	MATERIAL	FINISH
REFRIGERANT PIPING		1.5"	P-6	
CONDENSER DRAIN PIPING (IF RUNNING THROUGH EXTERIOR WALL)		1.0"	P-6	

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.

S. THERMOSTATIC CONTROLS:

1. GENERAL:
THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE. WHERE HUMIDIFICATION OR DEHUMIDIFICATION OR BOTH IS PROVIDED, AT LEAST ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.
EXCEPTION: INDEPENDENT PERIMETER SYSTEMS THAT ARE DESIGNED TO OFFSET ONLY BUILDING ENVELOPE HEAT LOSSES, GAINS OR BOTH SERVING ONE OR MORE PERIMETER ZONES ALSO SERVED BY AN INTERIOR SYSTEM PROVIDED:
THE PERIMETER SYSTEM INCLUDES AT LEAST ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION FOR 50 CONTIGUOUS FEET OR MORE AND
THE PERIMETER SYSTEM INCLUDES AT LEAST ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION (WITHIN +/-45 DEGREES) (0.8 RAD) FOR MORE THAN 50 CONTIGUOUS FEET (15 240 MM); AND
THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

2. DEAD BAND:
WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM.
EXCEPTION:
THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.
OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

3. SETBACK CONTROLS:
THERMOSTATIC SETBACK CONTROLS SHALL HAVE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 85°F (29°C).

4. AUTOMATIC SETBACK AND SHUTDOWN:
HVAC SYSTEMS SHALL BE EQUIPPED WITH AT LEAST ONE OF THE FOLLOWING:
AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

5. SETPOINT OVERLAP RESTRICTION:
WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE , A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE PROVIDED WITH THE CAPABILITY TO PREVENT THE HEATING SET POINT FROM EXCEEDING THE COOLING SET POINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.2.4.1.2.

6. HEAT PUMP SUPPLEMENTARY HEAT:
HEAT PUMPS HAVING SUPPLEMENTARY ELECTRIC RESISTANCE HEAT SHALL HAVE CONTROLS THAT, EXCEPT DURING DEFROST, PREVENT SUPPLEMENTARY HEAT OPERATION WHERE THE HEAT PUMP CAN PROVIDE THE HEATING LOAD.

BROOKHAVEN, GA BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2020 GEORGIA BUILDING CODE , 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 2018 INTERNATIONAL MECHANICAL CODE CHAPTER 4.

3. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:

A. STANDARDS OF HEATING - INTERNATIONAL MECHANICAL CODE 2018 - 309.1
B. DUCT CONSTRUCTION AND INSTALLATION- INTERNATIONAL MECHANICAL CODE 2018 - 603
C. AIR INTAKES, EXHAUSTS AND RELIEF - INTERNATIONAL MECHANICAL CODE 2018 - 401.5 AND 501.3
D. AIR FILTERS - INTERNATIONAL MECHANICAL CODE 2018 - 605
E. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - INTERNATIONAL MECHANICAL CODE 2018 - 513

4. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.

5. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY INTERNATIONAL MECHANICAL CODE 2018 - 403.3

6. SMOKE DETECTION SYSTEMS SHALL BE INSTALLED AND SEQUENCED TO FOLLOW CONTROLS OPERATIONS WITH THE REQUIREMENTS OF SECTION INTERNATIONAL MECHANICAL CODE 2018- 606 TO CLOSE DAMPERS AND AUTOMATICALLY STOP THE FAN.

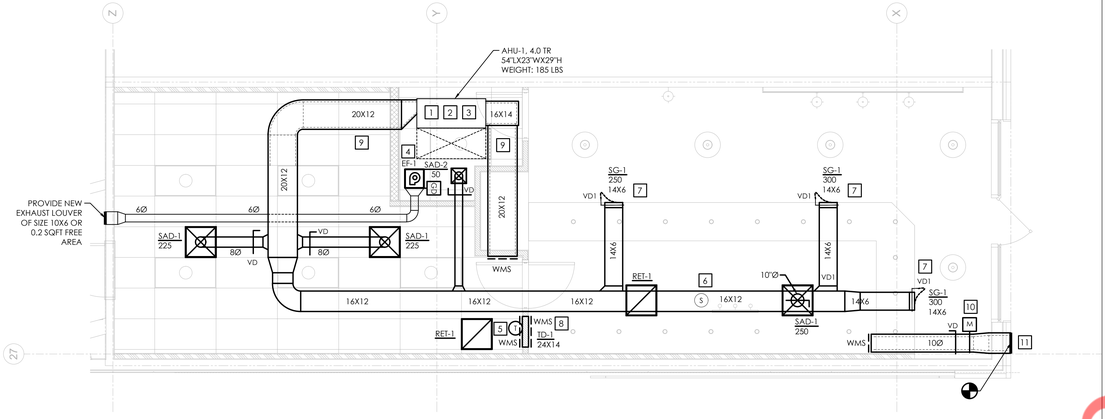
7. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.

8. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.

1. ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH ALL NATIONAL, STATE, & LOCAL CODES AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL HVAC WORK IS PROVIDED AND INSTALLED IN STRICT ACCORDANCE WITH SEISMIC REQUIREMENTS.
2. THE CONTRACTOR SHALL PREPARE AND FILE ALL REQUIRED PLANS AND PERMITS WITH THE LOCAL BUILDING DEPARTMENT AND SHALL PAY ALL FILING FEES AS REQUIRED. THE CONTRACTOR SHALL OBTAIN ALL AUTHORITIES AND SHALL PAY ALL WORK PERMITS, INSPECTIONS, AND WRITE-OFFS AS REQUIRED TO EXECUTE THIS WORK IN A MANNER IN CONFORMANCE WITH THE CODES AND AUTHORITIES HAVING JURISDICTION.
3. CONTRACTOR SHALL COMPLY WITH ALL LANDLORD AND CLIENT DESIGN CRITERIA REQUIREMENTS.
4. GENERAL CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH LANDLORD'S ON-SITE OPERATIONS MANAGER.
5. CONTRACTOR TO COORDINATE UNIT SIZES AND ACCESS THROUGH EXISTING BUILDING ENTRYWAYS, ELEVATORS, STAIRWELLS, WINDOWS, ETC, PRIOR TO ORDER. TEMPORARY REMOVALS FOR UNIT MANEUVERABILITY SHALL BE INCLUDED WITHOUT ANY ADDITIONAL COST TO THE TENANT.
6. DO NOT SCALE FROM THESE DRAWINGS.
7. THE CONTRACTOR SHALL PERFORM ALL TESTS AND ARRANGE FOR ALL INSPECTIONS FOR WORK UNDER THEIR CONTRACT AS REQUIRED BY LAW AND SHALL SUPPLY ALL CERTIFICATES OF INSURANCE AS REQUIRED BY THE LAW AND THE OWNER.
8. ALL REMOVALS PERFORMED UNDER THIS CONTRACT SHALL INCLUDE REMOVAL OF ALL DEBRIS AND DISPOSAL AT AN APPROPRIATE SITE.
9. THE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL HVAC EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL OTHER MECHANICAL, ELECTRICAL, ARCHITECTURAL, PLUMBING, SPRINKLER, AND STRUCTURAL SYSTEMS. RUN DUCTWORK AS TIGHT TO STRUCTURE AS POSSIBLE AND COORDINATE ROUTING IN FIELD. ENSURE ANY CRITICAL ACCESS POINTS ON ALL MECHANICAL EQUIPMENT IS MAINTAINED AFTER CONSTRUCTION IS COMPLETED.
10. THE FINISH AND COLOR OF THE AIR DEVICES, AND ALL OTHER EXPOSED HVAC EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECT.
11. CONTRACTOR SHALL COORDINATE ALL ROOFING WORK WITH LANDLORD'S APPROVED ROOFING CONTRACTOR. CONTRACTOR TO INSPECT ALL EXISTING ROOF PENETRATIONS TO REMAIN. IF REQUIRED G.C. SHALL HIRE ROOFING CONTRACTOR TO PATCH & REPAIR ROOF INCLUDING NEW FLASHINGS, BOOTS, PORTALS, (ETC.) AS DEEMED NECESSARY UPON INSPECTION.
12. CONTRACTOR SHALL ENSURE ABOVE CEILING IS TO BE A RETURN PLENUM. CONSTRUCTION MATERIALS ABOVE CEILING SHALL BE NONCOMBUSTIBLE OR HAVE A MAXIMUM 25 FLAME SPREAD AND 50 SMOKE DEVELOPMENT FINISH RATING, WIRING SHALL BE LABELED PLENUM RATED TYPE PER NFPA 70. CONTRACTOR TO PROVIDE 1" 3M PLENUM FIRE WRAP 5A+ (OR EQUAL) ON ALL PVC PIPING LOCATED IN RETURN AIR PLENUM / ABOVE CEILING.
13. CONTRACTOR SHALL COORDINATE WITH SPECIFICATIONS AND PROVIDE ACOUSTICAL INSULATION ON THE FIRST 10'-0" OF SUPPLY DUCTWORK (OR AS DESIGNATED BY CODE). USE A MINIMUM R-6 FIBERGLASS ACOUSTIC DUCT LINER. AND ALL EXPOSED, RAW LINER EDGES SHALL BE CAPPED WITH SHEET METAL NOSING.
14. VERIFY ALL EQUIPMENT VOLTAGES & AVAILABLE AMPERAGE WITH THE ELECTRICAL CONTRACTOR PRIOR TO BID.
15. PROVIDE DISCONNECT SWITCHES FOR ALL HVAC EQUIPMENT.
16. THE FINAL LOCATION OF AIR DEVICES MUST BE COORDINATED WITH THE REFLECTED CEILING PLAN AND ALL OTHER MECHANICAL, ELECTRICAL, SPRINKLER, AND ARCHITECTURAL.
17. DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET STEEL IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE ASHRAE, NFPA, AND SMACNA GUIDE RECOMMENDATIONS. SIZES AS SHOWN INDICATE INSIDE CLEAR DIMENSIONS OF THE AIR PASSAGE.
18. ALL INTERIOR & EXTERIOR SUPPLY, OUTSIDE AIR, AND RETURN DUCTWORK SHALL BE INSULATED PER THE MECHANICAL GENERAL SPECIFICATIONS & APPLICABLE CODES. INTERIOR EXPOSED DUCTWORK SHALL BE INTERNALLY INSULATED TO PREVENT CONDENSATION.
19. DUCT SIZES MUST BE VERIFIED FOR CLEARANCES AT THE JOB SITE PRIOR TO FABRICATION. ALL DEVIATIONS FROM ORIGINAL CONTRACT DRAWINGS SHALL BE REVIEWED BY THE ENGINEER DURING THE SHOP DRAWING PROCESS.
20. PROVIDE ELBOWS OR TEES WITH TURNING VANES FOR ALL CHANGES OF DUCT DIRECTION. PROVIDE SPLITTER DAMPERS WITH LOCKING QUADRANTS IN ALL TEES.
21. PROVIDE MANUAL BALANCING DAMPERS AS REQUIRED TO PROPERLY BALANCE EACH INDIVIDUAL AIR DISTRIBUTION SYSTEM. IF THE LOCATION OF THE BALANCING DAMPER IS NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUM STANDARDS SHALL GOVERN. ALL SUPPLY, RETURN, AND EXHAUST MAIN BRANCHES FROM TRUNKS. EACH SPLIT AND ALL SUB-BRANCHES FROM MAINS SHALL INCORPORATE BALANCING DAMPERS. CABLE OPERATED MANUAL BALANCING DAMPERS SHALL BE PROVIDED IN AREAS WITH INACCESSIBLE OR HIGH CEILINGS. THE CABLE OPERATED DAMPER SHALL BE OUTSIDE OF THE AIRSTREAM. THE CONTRACTOR SHALL COORDINATE THE TYPE AND LOCATION OF THE REMOTE ACCESS POINT WITH THE ARCHITECT / OWNER.
22. COORDINATE INSTALLATION, DEFLECTION SETTING, ETC. FOR DIFFUSERS, GRILLES, REGISTERS, IN FIELD.
23. MAINTAIN ALL EXHAUST TERMINATIONS A MINIMUM OF 10' AWAY OR 3' ABOVE ANY FRESH AIR INTAKE OR OPERABLE WINDOW OR AS DIRECTED BY LOCAL CODES.
24. AN INDEPENDENT TESTING AND BALANCING AGENCY CERTIFIED BY THE AABC SHALL BE ENGAGED TO TEST AND BALANCE THE HVAC SYSTEMS. SYSTEMS SHALL BE BALANCED TO PLUS / MINUS 10% OF DESIGN REQUIREMENTS. THE CONTRACTOR SHALL PLACE ALL SYSTEMS AND EQUIPMENT INTO FULL OPERATION FOR TESTING AND BALANCING. ONE COPY OF THE FINAL TEST AND BALANCE REPORT WITH THE AABC NATIONAL PERFORMANCE GUARANTY SHALL BE SENT DIRECTLY TO THE ENGINEER OF RECORD.
25. CONTRACTOR SHALL PROVIDE NEW FILTERS FOR HVAC UNITS BEFORE TURNING ON FOR THE FIRST TIME AFTER CONSTRUCTION IS COMPLETED. HVAC EQUIPMENT SHALL NOT RUN DURING CONSTRUCTION UNLESS FILTERS ARE INSTALLED.
26. MECHANICAL CONTRACTOR IS TO PROVIDE AND INSTALL FIRE DAMPERS OR COMBINED FIRE AND SMOKE DAMPER IN ANY DUCTWORK THAT PENETRATES A FIRE RATED PARTITION, WALL OR ROOF AS REQUIRED BY CODE TO MAINTAIN THE RATING OF THE PENETRATED ASSEMBLY. COORDINATE WITH ARCHITECT FOR FIRE RATINGS OF THE WALL.
27. VERIFY EXACT SIZES OF ALL EXISTING DESIGN COMPONENTS INDICATED FOR REUSE IN FIELD AND CONTACT ENGINEER / ARCHITECT WITH ANY DISCREPANCIES PRIOR TO BID.
28. PROVIDE FLEXIBLE CONNECTORS AT ALL DUCT CONNECTIONS TO VIBRATING EQUIPMENT. THESE CONNECTORS SHALL BE INSTALLED IN CLOSE PROXIMITY TO SUCH EQUIPMENT.
29. ALL ACCESS DOORS REQUIRED IN GENERAL CONSTRUCTION ARE TO BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE HVAC CONTRACTOR TO IDENTIFY SIZE, TYPE AND LOCATION OF SUCH DOORS FOR PROPER ACCESS TO ALL CONCEALED HVAC EQUIPMENT, VALVES AND OTHER RELATED EQUIPMENT. THE HVAC CONTRACTOR SHALL IDENTIFY THESE REQUIREMENTS ON A COORDINATED SHOP DRAWING PRIOR TO SYSTEM FABRICATION AND INSTALLATION.
30. ALL CEILING-MOUNTED EQUIPMENT MUST BE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE WITH COMBINATION SPRING AND NEOPRENE-IN-SHEAR HANGERS AND ROD. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE LOAD.
31. FLEXIBLE DUCTWORK FROM HARD DUCT TO CEILING DIFFUSERS SHALL BE LIMITED IN LENGTH TO 5 FEET.
32. CONDENSATE PIPING TO BE SCHEDULE 40 CPVC AND INSULATED WITH 1" INSULATION.
33. ALL PIPING SHALL BE CLEARLY AND DISTINCTLY IDENTIFIED WITH STENCIL MARKERS.
34. CONTRACTOR TO COMPLY WITH BUILDING / LANDLORD CRITERIA, DESIGN CRITERIA, STANDARD PRACTICES AND LOCAL CODE / ORDINANCE REQUIREMENTS WHEN COMMENCING WORK. THESE REQUIREMENTS SHALL SUPERSEDE ANY AND ALL INFORMATION ON THE DRAWINGS UNLESS AGREEMENT TO THE CONTRARY DURING THE BID PROCESS WHEREAS THE CLIENT WILL BE EXCLUDED FROM INCURRING ANY ADDITIONAL COSTS. THE GENERAL CONTRACTOR SHALL OVERSEE THE EXECUTION AND COMPLETION OF THESE ITEMS ALSO AT NO ADDITIONAL COST TO THE CLIENT. ANY DISCREPANCIES OR INCONSISTENCIES CONCERNING THESE REQUIREMENTS AFTER THE PROJECT IS AWARDED SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OWNER AND TENANT FOR APPROVAL PRIOR TO COMMENCING WORK. ANY UPGRADES TO THE DESIGN / SCOPE OF WORK TO CONFORM TO THE PRECEDING REQUIREMENTS AT THIS JUNCTURE WILL THEN BE AT THE TENANT'S EXPENSE.
35. SINCE CODES VARY ACROSS REGIONS, IT IS THE GENERAL AND SUBCONTRACTOR'S RESPONSIBILITY TO REVIEW THE CONSTRUCTION DRAWINGS DURING BIDDING AND INCLUDE IN THEIR BID ANY ALTERNATE CODE RELATED RECOMMENDATIONS / DETAILS OR SPECIFICATIONS. IF THERE ARE ANY PROPOSED ALTERATION EQUIPMENT / INSTALLATION CHANGES, THEN THE COSTS FOR THESE CHANGES ARE TO BE EQUAL TO OR GREATER IN VALUE TO THE ITEMS AND QUANTITIES MENTIONED IN THE ORIGINAL CONSTRUCTION DRAWINGS AND THE CHANGES SHALL BE SUBMITTED TO THE ARCHITECT / ENGINEER FOR REVIEW AND APPROVAL. CONTRACTORS WHO DO NOT ADHERE TO THIS REQUIREMENT WILL BE RESPONSIBLE FOR INCURRING THE ADDED COSTS REQUIRED FOR THE DESIGN TO COMPLY WITH LOCAL CODE.
36. 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).
37. THE GENERAL CONTRACTOR IS RESPONSIBLE AT THE BEGINNING OF THE PROJECT TO MEASURE THE SPACE WHILE REVIEWING THE ARCHITECTS DRAWINGS TO VERIFY THAT THE INFORMATION CONTAINED IN THE MECHANICAL DOCUMENTS, ON WHICH HE/SHE QUOTED TO THE CLIENT, ARE COMPATIBLE WITH THE WORK TO BE PERFORMED AND THAT ALL SPACES ARE SUFFICIENT IN SIZE FOR THE WORK TO BE COMPLETED INCLUDING WIDTHS, LENGTHS, HEIGHTS, ETC.
38. ALL DUCT SIZE MENTIONED OVER THE PLANS ARE CLEAR INSIDE DUCT SIZES. CONTRACTOR TO EXTEND THE SIZE OF THE DUCT WHEREVER ACOUSTIC INSULATION IS USED.
39. CONTRACTOR TO ENSURE THE CLEARANCES OF EQUIPMENTS KEPT ON ROOF. PROVIDE A SUITABLE ARRANGEMENTS ON ROOF FOR SERVICE & MAINTENANCE.
40. PROVIDE WEATHER PROOF COATING FOR ALL EXPOSE REFRIGERANT PIPING.

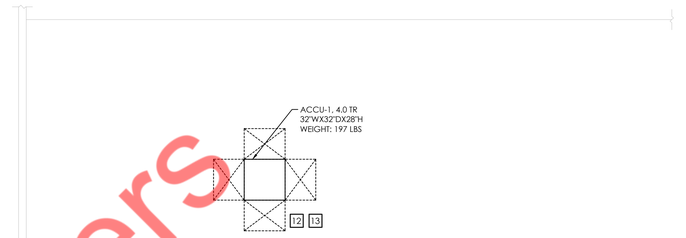
MECHANICAL GENERAL NOTES

SCALE: NTS | 3



MECHANICAL FLOOR PLAN

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



PARTIAL ROOF PLAN

SCALE: 1/4" = 1'-0" | 2

1	CONNECT 1-1/4" CD FROM AHU TO NEAREST PLUMBING DRAIN WITH AIR GAP FITTING. INSTALL CONDENSATE DRAIN WITH 1% SLOP TOWARD DRAIN POINT. PROVIDE CONDENSATE PUMP AS/IF REQUIRED. COORDINATE WITH PLUMBING DRAWING FOR DRAIN LOCATION.
2	INSTALL REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT AS PER MANUFACTURERS RECOMMENDATIONS. PROVIDE INSULATION TO REF PIPING AS PER ENERGY CONSERVATION CODE. COORDINATE WITH BASE BUILDING ENGINEER FOR PIPE ROUTING AND RISER LOCATION. NOTIFY THE ENGINEER FOR ANY DISCREPANCY BEFORE COMMENCING BID.
3	PROVIDE ACOUSTICAL JACKET TO AHU. PROVIDE AN AUXILIARY DRAIN PAN WITH WATER LEAKAGE SENSOR IN ORDER TO SHUT-OFF THE UNIT IN CASE OF WATER LEAKAGE. THE PAN SHALL HAVE A DEPTH OF NOT LESS THAN 1.5 INCHES, SHALL BE NOT LESS THAN 3 INCHES LARGER THAN THE UNIT, OR THE COIL DIMENSIONS IN WIDTH AND LENGTH AND SHALL BE CONSTRUCTED OF CORROSION-RESISTANT MATERIAL. METALLIC PANS SHALL HAVE A THICKNESS OF NOT LESS THAN 0.0236 INCH (NO. 24 GAGE) FOR GALVANIZED SHEET METAL PANS, 0.0179 INCH (NO. 26 GAGE) FOR STAINLESS STEEL PANS, OR 0.0320 INCH (NO. 20 GAGE) FOR ALUMINUM PANS. NON-METALLIC PANS SHALL HAVE A THICKNESS OF NOT LESS THAN 0.0625 INCH.
4	CONTRACTOR SHALL PROVIDE NEW EXHAUST FANS AS SCHEDULED. ROUTE NEW EXHAUST DUCT TO REAR WALL AS SHOWN ON PLAN. TERMINATE EXHAUST DUCT WITH LOUVER. ENSURE TERMINATION POINT IS AT MINIMUM 3' ABOVE ANY FRESH AIR INTAKE OR DOORS.
5	CONTRACTOR SHALL PROVIDE NEW PROGRAMMABLE 7 DAY THERMOSTAT & MOUNT AT 4'-0" AFF. ENSURE THERMOSTAT IS COMPATIBLE WITH AHU. CONCEAL ALL CONTROL WIRING WITHIN WALLS AND ABOVE CEILING AS REQUIRED. VERIFY IN FIELD. THERMOSTAT LOCATION TO COORDINATE WITH ARCHITECT/CLIENT.
6	CONTRACTOR SHALL MOUNT NEW TEMPERATURE SENSOR ON CEILING AS SHOWN ON LAN & CONNECT TO THERMOSTAT. COORDINATE EXACT MODEL WITH UNIT MANUFACTURER. ENSURE FULL COMPATIBILITY WITH THERMOSTAT.
7	CONTRACTOR SHALL PROVIDE & MOUNT SIDE SUPPLY GRILLE FLUSH IN SOFFIT/WALL. COORDINATE MOUNTING HEIGHT AND GRILLE FINISH WITH ARCHITECT PRIOR TO PURCHASING & INSTALLING.
8	IF WALL IS FULL HEIGHT WALL, CONTRACTOR SHALL PROVIDE & INSTALL NEW TRANSFER RETURN DUCT WITH WIRE MESH AS SHOWN. COORDINATE WITH ARCHITECTURAL DRAWINGS PRIOR TO BID.
9	SUPPLY AND RETURN AIR DUCTWORK WITHIN 10' OF HVAC UNIT SHALL BE ACOUSTICALLY LINED. AFTER THE ACOUSTICALLY LINED DUCTS, EXTERNAL THERMAL INSULATION MUST BE INSTALLED. ACOUSTIC & THERMAL INSULATIONS WILL BE PROVIDED BY CONTRACTOR IN ACCORDANCE WITH SPECIFICATIONS AND APPLICABLE CODES.
10	MOTORIZED DAMPER TO BE INTERLOCK WITH AHU-1.
11	CONTRACTOR TO FIELD VERIFY SIZE & LOCATION OF THE EXISTING OUTSIDE AIR INTAKE LOUVER. IF THE EXISTING LOUVER IS NOT AVAILABLE OR INSUFFICIENT, PROVIDE A NEW ONE WITH A MINIMUM SIZE OF 12"X12" OR 0.5 SQ FT OF FREE AREA. RE ROUTE THE DUCT, IF REQUIRED. PROVIDE A INTERNAL INSULATION TO THE OUTSIDE AIR INTAKE DUCT AS REQUIRED BY THE LOCAL CODE & SPECIFICATIONS. TERMINATE OUTSIDE AIR INTAKE 10' AWAY FROM ANY EXHAUST.
12	INSTALL OUTDOOR CONDENSING UNITS ON THE ROOF WITH ALL REQUIRED ACCESSORIES. COORDINATE EXACT LOCATION WITH STRUCTURAL ENGINEER ON FIELD.
13	INSTALL REFRIGERANT PIPING FROM INDOOR UNITS TO OUTDOOR UNITS AS PER MANUFACTURER RECOMMENDATION. PROVIDE WEATHER PROOF COATING FOR EXPOSED PIPING. PROVIDE PIPING INSULATION AS PER TABLE C403.2.10 2018 IECC.

KEYNOTES

SCALE: NTS | 4

	CEILING SUPPLY AIR DIFFUSER (SAD)
	CEILING SUPPLY AIR DIFFUSER WITH BLANK-OFF SECTION
	CEILING RETURN AIR GRILLE (RET)
	EXHAUST FAN
	LINEAR SUPPLY/RETURN DIFFUSER (LENGTH PER PLANS)
1/4 OR	DUCT MOUNTED DIFFUSER
	WALL TRANSFER GRILLE (TG)
T	THERMOSTAT
S	TEMPERATURE SENSOR
CO_2	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
	NEW DUCTWORK
	EXISTING DUCT TO REMAIN
VD	VOLUME DAMPER
VD1	VOLUME DAMPER W/ REMOTE OPERATOR
SAD / RD	TYPE OF AIR DEVICE AIR QUANTITY (CFM)
Z x Y	X, INCHES, SIDE OF DUCT SHOWING
GD	GRAVITY DAMPER
FD	FIRE DAMPER
SD	SMOKE DAMPER
FSD	FIRE / SMOKE DAMPER
S P	SMOKE DETECTOR SUPPLY - PHOTOELECTRIC
S I	SMOKE DETECTOR RETURN - IONIZATION
	FIELD CONNECTION
U	DOOR UNDER CUT
	SUPPLY AIR FLOW
	RETURN AIR FLOW
	NEW FLEX DUCT
M	MOTORIZED DAMPER

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.

MECHANICAL LEGEND

SCALE: NTS | 5

AIR HANDLER UNIT SCHEDULE

TAG	QTY (NOS.)	SERVES	CFM	O.A CFM	E.S.P.	COOLING NOM. TONS	COOLING TOTAL MBH	COOLING ENT. DB/WB	HEATING KW	ELECTRICAL V/Ø/HZ	ELECTRICAL MCA	ELECTRICAL MOCP	WEIGHT (LBS)	SOUND (dB)	MANUFACTURER/ MODEL #
AHU-1	1	SEE PLANS	1600	245	0.60	4.0	48	80/67	8.0	208-230/1/60	52.8/57.5	60/60	185.0	69.0	CARRIER/ FX4DNJB,F1049L (OR EQUIVALENT)

NOTES & ACCESSORIES:
1. PROVIDE VIBRATION ISOLATORS, NON-FUSED DISCONNECT, STAINLESS STEEL DRAIN PAN, CONDENSATE PUMP, AUXILIARY DRAIN PAN WITH FLOAT SWITCH, MERV 8 (MINIMUM) FILTERS, & ALL OTHER MANUFACTURER'S REQUIRED ACCESSORIES FOR A COMPLETE INSTALLATION.
2. CONTRACTOR TO PROVIDE CONTROLS PER MANUFACTURER'S & LANDLORDS REQUIREMENTS.
3. MAINTAIN MANUFACTURER'S RECOMMENDED MAINTENANCE CLEARANCES.
4. PROVIDE REFRIGERATION PIPING PER MANUFACTURER'S RECOMMENDATIONS AND ROUTE TO ASSOCIATED CONDENSING UNITS. COORDINATE FINAL UNIT LOCATIONS & PIPE ROUTING FOR PIPE SIZE REQUIREMENTS.
5. DRAIN CONDENSATE LINES TO NEAREST PLUMBING DRAIN POINT OR MOP SINK. COORDINATE WITH PLUMBING DRAWINGS.
6. PROVIDE MANUFACTURER'S FACTORY START-UP & COMMISSIONING.
7. PROVIDE FACTORY INSTALLED ELECTRIC HEAT WITH SINGLE POINT POWER FOR AHU. MANUFACTURER SHALL PROVIDE ALL ACCESSORIES AS REQUIRED.

CONDENSING UNIT SCHEDULE

TAG	SERVES	TYPE	COOLING NOM. TONS	COOLING TOTAL MBH	COOLING EER/ SEER	HEATING TOTAL MBH	HEATING HSPF	ELECTRICAL V/Ø/HZ	ELECTRICAL MCA	ELECTRICAL MOCP	WEIGHT (LBS)	SOUND (dB)	MANUFACTURER/ MODEL #
ACCU-1	AHU-1	AIR COOLED	4	46.5	12/14.5	45.0	8.2	208-230/1/60	25.2	40	219.1	79.0	CARRIER/ 25HCE448A*030* (OR EQUIVALENT)

NOTES & ACCESSORIES:
1. PROVIDE NON-FUSED DISCONNECT, HAIL GUARD, & ALL OTHER MANUFACTURER'S REQUIRED ACCESSORIES FOR A COMPLETE INSTALLATION.
2. MOUNT CONDENSING UNIT ON 4" CONCRETE PAD.
3. MAINTAIN MANUFACTURER'S RECOMMENDED MAINTENANCE CLEARANCES.
4. PROVIDE REFRIGERATION PIPING PER MANUFACTURER'S RECOMMENDATIONS AND ROUTE TO ASSOCIATED AIR HANDLING UNIT IN BUILDING. COORDINATE FINAL UNIT LOCATIONS & PIPE ROUTING FOR PIPE SIZE REQUIREMENTS.
5. PROVIDE MANUFACTURER'S FACTORY START-UP & COMMISSIONING.
6. CONTRACTOR TO PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.

EXHAUST FAN SCHEDULE

TAG	SERVES	FAN TYPE	AIRFLOW (CFM)	E.S.P. ("W.C.")	INLET dBA	ELECTRICAL RPM	ELECTRICAL DRIVE	ELECTRICAL V/Ø/HZ	ELECTRICAL FLA	WEIGHT (LBS)	MANUFACTURER/ MODEL #	NOTES
EF-1	TOILET ROOM	CEILING MOUNTED	100	0.92	48	1050	DIRECT	115/1/60	1.8	10	GREENHECK SP-B150	1,2

NOTES & ACCESSORIES:
1. PROVIDE VIBRATION ISOLATORS, DISCONNECT SWITCH & ALL ACCESSORIES REQUIRED BY VENDOR FOR PROPER INSTALLATION AND OPERATION.
2. INTERLOCK WITH LIGHT SWITCH/OCCUPANCY SENSOR.

NEW VOLUME DAMPER CABLE CONTROLS

TYPE	DESCRIPTION
"VD1"	THE VOLUME DAMPER SHALL BE ADJUSTABLE FROM THE FACE OF THE DIFFUSER BY USE OF THE BOWDEN CABLE CONTROL SYSTEM (#270-275 CONTROLLER) MANUFACTURED BY YOUNG REGULATOR COMPANY OR APPROVED EQUIVALENT. DAMPER MUST BE INSTALLED WITHIN 30 FEET FROM THE FACE OF THE DIFFUSER. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.

NEW THERMOSTAT SCHEDULE

T	THERMOSTAT SHALL BE TOUCH SCREEN PROGRAMMABLE, 7-DAY TYPE. COORDINATE EXACT MAKE AND MODEL WITH UNIT MANUFACTURER. ENSURE FULL COMPATIBILITY TO UNIT. MOUNT AT 4'-0" AFF. NOTES: 1. CONTRACTOR SHALL COORDINATE EXACT OPERATIONAL TIMES WITH OWNER/MANAGER PRIOR TO PROGRAMMING.
S	NEW BUTTON PROBE SENSOR (SIMILAR TO HONEYWELL C7041F) OR APPROVED EQUIVALENT. MOUNT IN CEILING AS INDICATED ON MECHANICAL PLAN. WIRE BACK TO T-STAT IN BACK PREP AREA. ENSURE COMPATIBILITY WITH NEW THERMOSTAT. VERIFY IN FIELD.

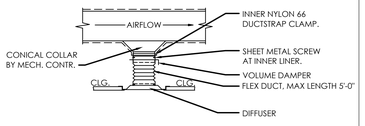
NEW DIFFUSER, REGISTER, AND GRILLE SCHEDULE

TAG	MAKE & MODEL	DIFFUSER SIZE	NECK SIZE	CFM RANGE	DESCRIPTION
SAD-1	TITUS TMS	24X24	6"Ø	0-95	STEEL CONSTRUCTION, SURFACE OR LAY-IN MOUNT, ROUND NECK CEILING DIFFUSER WITH REMOVABLE CENTER CONE. PROVIDE OPPOSED BLADE DAMPER AND SECTORIZING BAFFLE FOR AIRFLOW OTHER THAN 4-WAY BLOW.
			8"Ø	96-245	
			10"Ø	246-380	
			12"Ø	381-550	
			14"Ø	551-725	
SAD-2	TITUS TMS	12X12	6"Ø	0-95	STEEL CONSTRUCTION, SURFACE OR LAY-IN MOUNT, ROUND NECK CEILING DIFFUSER WITH REMOVABLE CENTER CONE. PROVIDE OPPOSED BLADE DAMPER AND SECTORIZING BAFFLE FOR AIRFLOW OTHER THAN 4-WAY BLOW.
			8"Ø	96-245	
SG-1	TITUS 300FL	SEE PLANS	SEE PLANS	SEE PLANS	ALUMINUM CONSTRUCTION SUPPLY GRILLE, INDIVIDUALLY ADJUSTABLE 3/4" BLADE SPACING SET AT 22.5 DEGREES, BLADES PARALLEL TO THE LONG DIMENSION. PROVIDE WITH OPPOSED BLADE DAMPER & BORDER TYPE 1 FOR SURFACE & DUCT MOUNTING.
RET-1	TITUS PAR	24X24	22X22	0-1340	PERFORATED RETURN DIFFUSER. STEEL CONSTRUCTION. RETURN AIR GRILLE. PROVIDE WITH LAY-IN BORDER FOR INSTALLATION IN CEILING OR SURFACE MOUNT BORDER SUITABLE FOR INSTALLATION IN DRYWALL TYPE CEILING.

1. COORDINATE FINAL ACCESSORIES, FINISHES, AND LENGTHS WITH CONSTRUCTION MANAGER & ARCHITECT PRIOR TO PROCUREMENT.
2. SELECTION BASED ON TITUS OR APPROVED EQUIVALENT.

MECHANICAL SCHEDULES

SCALE: NTS | 6



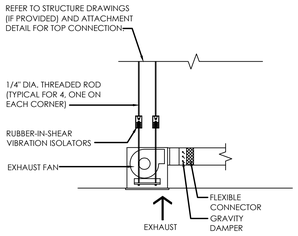
NOTES:
FLEXIBLE DUCT IS TO BE USED FOR VERTICAL DROPS ONLY. RUNOUTS AND ELBOWS ARE TO BE SHEETMETAL DUCT. THE MECHANICAL CONTRACTOR MUST PROVIDE ADAPTERS FOR DIFFUSERS WITH SQUARE AND RECTANGULAR NECKS AS REQUIRED. INNER LINER TO BE SECURED TO COLLAR BY NYLON STRAP AND THREE SHEET METAL SCREWS TO PREVENT LINER FROM SLIPPING OFF COLLAR. MAXIMUM FLEX DUCT IS 5 FEET. CUT SMALL SLIT IN LINER AT DAMPER ADJUSTMENT W/STRING OR WIRE MARKER TO SHOW LOCATION.

BOTTOM DISCHARGE DETAIL

SCALE: NTS | 1

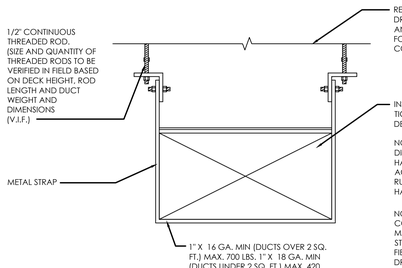
NOTE #1:
CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADEQUATE CONNECTION TO STRUCTURE / DECK ABOVE BASED ON CONDITIONS.

NOTE #2:
CONTRACTOR SHALL VERIFY MATERIAL OF EXISTING STRUCTURE/DECK ABOVE IN FIELD PRIOR TO BID, SHOP DRAWINGS, FABRICATION, OR WORK START. PROVIDE ADEQUATE SUPPORT(S) BASED ON EXISTING CONDITIONS.



CEILING EXHAUST FAN DETAIL

SCALE: NTS | 2



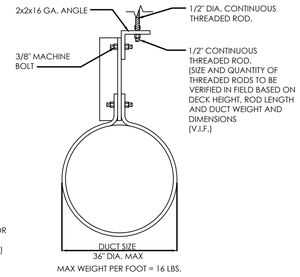
NOTE #1:
DISTANCE BETWEEN DUCT HANGERS SHALL BE IN ACCORDANCE WITH THE RULES OF THE AGENCIES HAVING JURISDICTION.

NOTE #2:
CONTRACTOR SHALL VERIFY MATERIAL OF EXISTING STRUCTURE/DECK ABOVE IN FIELD PRIOR TO BID, SHOP DRAWINGS, FABRICATION, OR WORK START. PROVIDE ADEQUATE DUCT SUPPORT(S) BASED ON EXISTING CONDITIONS.

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 (.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.)



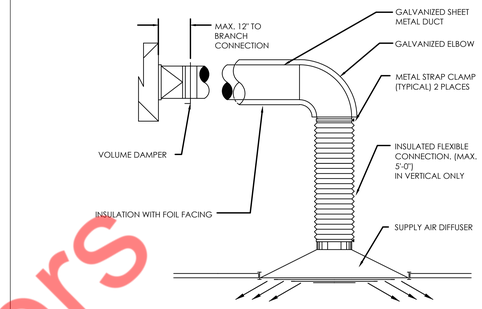
ROUND DUCT SUPPORT DETAIL

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.)

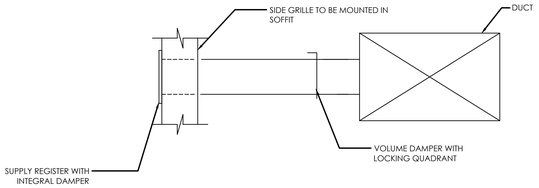
DUCT SUPPORT DETAIL

SCALE: NTS | 3



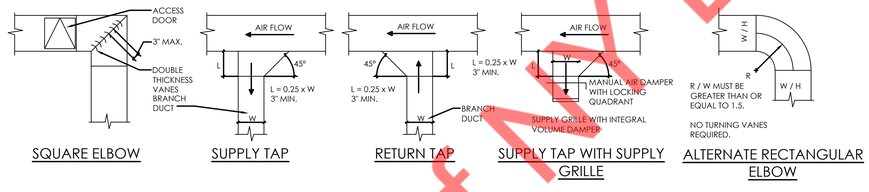
STANDARD DIFFUSER DETAIL

SCALE: NTS | 4



SIDE GRILLE DETAIL

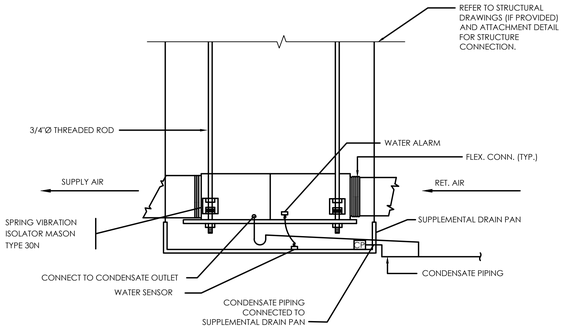
SCALE: NTS | 5



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

STANDARD DUCTWORK DETAILS

SCALE: NTS | 6



AHU INSTALLATION DETAILS

SCALE: NTS | 7

I. GENERAL REQUIREMENTS

1. GENERAL CONDITIONS: ALL CONDITIONS AND REQUIREMENTS UNDER THE "GENERAL CONDITIONS", THE "SUPPLEMENTARY GENERAL CONDITIONS", THE "SPECIAL CONDITIONS" SHALL BECOME A PART OF THIS SPECIFICATION, AND BIDDERS WILL EXAMINE ALL DRAWINGS AND READ ALL PARTS OF THE SPECIFICATIONS TO AVOID OMISSIONS, DUPLICATIONS AND TO INSURE COMPLETE EXECUTION OF ALL WORK FOR ELECTRICAL.

2. GENERAL: THE WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT AND INCIDENTAL COSTS NECESSARY TO FURNISH AND INSTALL ALL ELECTRICAL WORK, EQUIPMENT, LAMPS, ETC. INDICATED ON THE DRAWINGS, AS SPECIFIED HEREIN, OR BOTH.

A. THE ELECTRICAL 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.

3. THE TENANT'S GENERAL CONTRACTOR AND/OR HIS ELECTRICAL SUBCONTRACTOR IS TO VERIFY ALL EQUIPMENT SPECIFICATIONS AND REQUIREMENTS WITH THE TENANT OR THE TENANT'S CONSTRUCTION REPRESENTATIVE PRIOR TO START OF CONSTRUCTION. THIS CONTRACTOR TO VERIFY AMPERAGE AND VOLTAGE SPECIFICATIONS AND REQUIREMENTS (SERVICE AND PANEL SPECIFICATION) WITH THE ELECTRICAL SUBCONTRACTOR IN COORDINATION WITH EQUIPMENT SPECIFICATIONS FOR EQUIPMENT SUPPLIED BY THE TENANT, THE CONTRACTORS OR OTHER SOURCES (AS SPECIFIED BY THE ARCHITECT) AS A DOUBLE CHECK TO ASCERTAIN PROPER INSTALLATION OF EQUIPMENT AT THE CORRECT VOLTAGE/ AMPERAGE.

A. THE ELECTRICAL SUBCONTRACTOR IS REQUIRED TO VISIT THE SITE DURING BIDDING AND VERIFY LOCATION(S) OF WHERE THE ELECTRICAL EQUIPMENT/PIPING IS INDICATED TO BE PLACED, SIZE OF ANY EXISTING SERVICE AND WHAT IS INDICATED TO BE INSTALLED OR "EXISTING TO REMAIN" AND IF NEW SERVICE IS INDICATED, TO VERIFY IF DIFFERENT THAN THE DRAWINGS, SIZE OF FEEDER PIPES, REQUIRED DISTANCES AND POSSIBLE ADDITIONAL WORK REQUIRED AT THE ELECTRICAL DISTRIBUTIONS ROOM. ANY DISCREPANCIES BETWEEN DESIGNED AND ACTUAL TO BE TOLD TO THE GENERAL CONTRACTOR AND BE INDICATED ON THE BID FORM.

4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL FROM THE BUILDING AND ELECTRICAL INSPECTORS FOR ALL CONCEALED WORK PRIOR TO CLOSING UP WALLS, FLOORS AND CEILINGS.

5. TENANT'S GENERAL CONTRACTOR SHALL BRING IN ALL ADDITIONAL SERVICES, ADEQUATE FOR TENANT'S NEEDS AS REQUIRED, INCLUDING BUT NOT LIMITED TO ELECTRIC, SPRINKLER, SOIL (WASTE), DOMESTIC WATER LINES, OUTSIDE TOILET EXHAUST AIR, FIRE ALARM, TELEPHONE AND DATA.

6. SCOPE: FURNISH LABOR, MATERIALS, TOOLS, EQUIPMENT, ETC., REQUIRED FOR A COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS AND WORK, IN ACCORDANCE WITH LOCAL CODES AND GOVERNING BODIES HAVING JURISDICTION, AS SHOWN ON DRAWINGS, AND AS SPECIFIED, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

A. NEW SERVICE -- TENANT'S CONTRACTOR IS TO REUSE EXISTING ELECTRICAL SERVICE OR CONDUIT ONLY; FURNISH AND INSTALL NEW ELECTRICAL SERVICE WIRE AND EXTEND BOTH CONDUIT AND WIRE TO POINT OF ALL NEW PANELS, TRANSFORMERS, WIREWAYS, TROUGHS, TIME CLOCKS, ETC.. SINCE SPACE MAY OR MAY NOT BE MEASURED OR REVIEWED BY TENANT'S ARCHITECT, THE ACTUAL LOCATION OF SERVICE AND PANEL LOCATIONS MAY NOT BE KNOWN. THE ELECTRICAL SUBCONTRACTOR, IN REVIEW OF THE PREMISES, IS REQUIRED TO INSTALL PANELS IN LOCATION AS NOTED ON DRAWINGS AND MUST INCLUDE IN HIS BID ANY EXTENSION OF CONDUIT AND WIRE, NEW DISCONNECTS, RELOCATION OR INSTALLATION OF PANELS, TROUGHS, WIREWAYS, ETC. TO MAKE THE SYSTEM WHOLE AND TO UPGRADE AS NECESSARY TO MEET CODE REQUIREMENTS. INSTALL NEW SERVICE INCLUDING CONDUIT AND WIRE FROM DEMISED PREMISES TO LANDLORD'S ELECTRICAL ROOM IF THE EXISTING SERVICE NEEDS TO BE UPGRADED FROM WHAT TENANT WAS ORIGINALLY TOLD SERVICE WOULD BE, OR THE SERVICE NEEDS TO BE MOVED BECAUSE IT'S EITHER SHOWN TO BE MOVED OR IS EXISTING NOW IN THE PATH OF FUTURE PARTITION OR OTHER SERVICES.

B. EXISTING SERVICE -- TENANT'S CONTRACTOR IS TO REUSE EXISTING ELECTRICAL SERVICE WIRE, CONDUIT AND ELECTRICAL EQUIPMENT; CUT AND EXTEND TO POINT OF NEW ELECTRICAL EQUIPMENT. ALL EXISTING ELECTRICAL EQUIPMENT WHICH IS REUSED TO BE BROUGHT UP TO "LIKE NEW" CONDITION AND THE LATEST N.E.C. STANDARD. SINCE SPACE MAY OR MAY NOT BE MEASURED OR REVIEWED BY TENANT'S ARCHITECT, THE ACTUAL LOCATION OF SERVICE AND PANEL LOCATIONS MAY NOT BE KNOWN. THE ELECTRICAL SUBCONTRACTOR, IN REVIEW OF THE PREMISES IS REQUIRED TO INSTALL PANELS IN LOCATION AS NOTED ON DRAWINGS AND MUST INCLUDE IN HIS BID ANY EXTENSION OF CONDUIT AND WIRE, NEW DISCONNECTS, RELOCATION OR INSTALLATION OF PANELS, TROUGHS, WIREWAYS, ETC. TO MAKE SYSTEM WHOLE AND TO UPGRADE AS NECESSARY TO MEET CODE REQUIREMENTS. INSTALL NEW SERVICE INCLUDING CONDUIT AND WIRE FROM DEMISED PREMISES TO LANDLORD'S ELECTRICAL ROOM IF THE EXISTING SERVICE NEEDS TO BE UPGRADED FROM WHAT TENANT WAS ORIGINALLY TOLD SERVICE WOULD BE, OR THE SERVICE NEEDS TO BE MOVED BECAUSE IT'S EITHER SHOWN TO BE MOVED OR IS EXISTING NOW IN THE PATH OF FUTURE PARTITION OR OTHER SERVICES. IF SERVICE IS ADEQUATE BUT MUST BE RELOCATED, CUT AND EXTEND EXISTING WIRE AND CONDUIT TO POINT OF ALL NEW PANELS, DISCONNECTS, TROUGHS, TIME CLOCKS, ETC.

C. POWER DISTRIBUTION SYSTEMS AND TRANSFORMER.

D. LIGHTING SYSTEMS (ALSO SEE REFLECTED CEILING PLAN).

E. ELECTRICAL ENERGIZING -- MISCELLANEOUS FAN AND MOTOR.

F. MOTOR POWER WIRING SYSTEM.

G. TELEPHONE EMPTY CONDUIT SYSTEM (INCLUDING TERMINAL BOXES AND OUTLETS).

H. CONVENIENCE RECEPTACLE SYSTEM, DOOR ALARM/ ENTRY SYSTEM/ SECURITY.

I. SOUND SYSTEM, INTERCOM SYSTEM -- FURNISHED AND INSTALLED BY THIS CONTRACTOR IF REQUIRED BY CLIENT; EMERGENCY LIGHT SYSTEM AND BATTERIES FURNISHED BY CLIENT AND INSTALLED BY THIS CONTRACTOR.

J. GROUNDING IN ACCORDANCE WITH NATIONAL ELECTRIC CODE AND ALL MALL REQUIREMENTS.

K. NIGHT LIGHT CIRCUITING THROUGHOUT PREMISES AS PER CODE WHETHER SHOWN OR NOT ON DRAWINGS.

L. LOCK OUTS FOR EXIT / EMERGENCY LIGHTING, ALARM SYSTEMS, CASH REGISTERS, GRILLE AT ENTRY (IF APPLICABLE) AS REQUIRED. SEE PANEL SCHEDULE FOR CIRCUITS.

M. SMOKE DETECTORS FURNISHED AND INSTALLED WITHIN STORE TO INCLUDE LOCATIONS AND INTERNAL / EXTERNAL WIRING IF REQUIRED BY LANDLORD OR FIRE MARSHAL.

N. ELECTRICAL SUBCONTRACTOR, WHEN BIDDING THIS WORK, TO CHECK TO MAKE SURE THAT SERVICE WIRE, CONDUIT, DISCONNECTS, ETC., ARE ADEQUATE FOR TENANT'S NEEDS. IF ADDITIONAL SERVICE IS REQUIRED, INCLUDE NEW CONDUIT AND SERVICE FEED OR DISCONNECTS, METER BASE AND METER (IF APPLICABLE), ETC., TO BRING SUCH SERVICE UP TO TENANT'S NEEDS.

O. FURNISH AND INSTALL ALL CONDUIT AND WIRING, DISCONNECTS, BREAKERS, BALANCING OF LOADS, ETC. FOR HOOKUP OF ALL H.V.A.C. EQUIPMENT, UNIT(S), OR INLINE HEATERS WHETHER SUCH HEATERS OR EQUIPMENT / UNITS ARE SHOWN OR NOT.

P. FURNISH AND INSTALL A TWENTY FOUR (24) HOUR, SEVEN (7) DAY TIME CLOCK INCLUDING ALL INTEGRAL WIRING AND LOAD BALANCING (PANEL) FOR CONTROLLING THE STOREFRONT SIGN AND SHOW WINDOW LIGHTING, WHETHER SUCH WORK IS OR IS NOT SHOWN ON PLANS / OR SPECIFICATIONS.

Q. ALL ELECTRICAL ROUGH-IN TO BE NEW AND THE ORIGINAL SERVICES TO THE DEMISED PREMISES TO BE REUSED; CUT AND EXTEND TO POINT OF ALL NEW ELECTRICAL EQUIPMENT (IF ANY EQUIPMENT IS REUSED, UPGRADE SAME TO "LIKE NEW" CONDITION AND THE LATEST N.E.C. STANDARDS) BY THE TENANT'S CONTRACTOR UNLESS NOTED OTHERWISE ON DRAWINGS. TENANT'S GENERAL CONTRACTOR TO FIELD VERIFY THAT ALL UTILITY LINES ARE AT OR ADJACENT TO TENANT'S SPACE AS NOTED AND AT THE SIZE SPECIFIED. IF THE UTILITIES ARE NOT IN LOCATIONS AS NOTED ON THE DRAWINGS OR OF A SIZE LARGER OR SMALLER THAN NOTED, THIS CONTRACTOR IS TO NOTIFY THE TENANT'S ARCHITECT IMMEDIATELY.

R. THE TENANT'S ELECTRICAL SUBCONTRACTOR IS TO PROVIDE A NEW CIRCUIT DIRECTORY(IES) WITH PROPER PHASING AND BALANCING, WHICH IS TO CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND UNDERWRITER'S CODE.

S. THE SIGN(S) JUNCTION BOX PERMIT IS TO BE INCLUDED IN THE WORK FOR THE ELECTRICAL SUBCONTRACTOR AND THE BOX IS TO BE SUPPLIED BY THIS CONTRACTOR AND PROPERLY LABELED.

T. FURNISH AND INSTALL NEW (OR REFURBISH IF EXISTING) TOILET EXHAUST WITH ASSOCIATED DUCTWORK, ROOF PENETRATIONS, OR HOOK UP TO COMMON EXHAUST DUCT WITH BACKDRAFT DAMPER ETC., INCLUDING ASSOCIATED ELECTRICAL HOOKUP AND PANEL CONNECTIONS, WHETHER SUCH WORK IS SHOWN OR NOT SHOWN ON PLANS AND SPECIFICATIONS.

U. IF A SMOKE EVACUATION AND / OR DETECTION SYSTEM OCCURS FOR THIS SPACE, IT SHALL BE LEFT INTACT DURING CONSTRUCTION AND ANY NEW WORK, MODIFICATIONS AND/ OR REWIRING TO BE COMPLETED DURING CONSTRUCTION PHASE TO POINT OF NEW PANELS, WHETHER SHOWN OR NOT SHOWN ON PLANS AND SPECIFICATIONS.

V. ENGINEER, FURNISH AND INSTALL ANY AND ALL REQUIRED SMOKE EVACUATION, SMOKE DETECTION AND FIRE ALARM SYSTEMS, INCLUDING ANY AND ALL PARTS AND LABOR, TO MEET LOCAL CODE, LANDLORD REQUIREMENTS AND FIRE MARSHAL SPECIFICATIONS WHETHER SHOWN OR NOT SHOWN ON PLANS AND SPECIFICATIONS.

W. THE ELECTRICAL SUBCONTRACTOR TO COORDINATE WITH OTHER ENGINEERING DRAWINGS AND INCLUDE COSTS (LABOR AND MATERIALS) NECESSARY FOR OTHER ELECTRICAL EQUIPMENT / FIXTURES NOT SHOWN ON THESE ELECTRICAL DRAWINGS, BUT SHOWN ON OTHER ENGINEERING DRAWINGS.

7. THE TENANT'S GENERAL CONTRACTOR AND/ OR ELECTRICAL SUBCONTRACTOR IS TO INSTALL EMERGENCY AND EXIT LIGHTING, AS REQUIRED BY LOCAL CODE OR AGENCIES HAVING JURISDICTION OVER THE PROJECT. THE EXIT/ EMERGENCY LIGHTING SHOULD BE PROPERLY LABELED AND APPROVED TYPE LOCKOUTS INSTALLED.

8. SUBSTITUTIONS: CATALOG AND MANUFACTURER'S NUMBERS IN THIS SECTION AND ON THE DRAWINGS ARE FOR THE PURPOSE OF ESTABLISHING STANDARDS OF QUALITY AND TYPE OF MATERIALS TO BE USED. PRODUCTS OR OTHER MANUFACTURERS MAY BE USED IF SIMILAR AND EQUAL IN QUALITY AND DESIGN IN THE OPINION OF THE OWNER OR OWNER'S ARCHITECT AND ARE SPECIFICALLY APPROVED BY THE OWNER OR OWNER'S ARCHITECT, IN WRITING, PRIOR TO CLOSE OF BIDDING. REQUESTS FOR APPROVAL OF SUBSTITUTIONS SHALL BE IN WRITING, AND SHALL INCLUDE REPORTS OF TESTS, PERFORMANCE DATA OR OTHER PROOF OF EQUALITY TO THE ITEM SPECIFIED.

9. SHOP DRAWINGS: PRIOR TO THE COMMENCEMENT OF WORK, SUBMIT ONE (1) SET OF THE FOLLOWING ITEMS TO THE OWNER'S ARCHITECT IN THE FORM OF SHOP DRAWINGS, DETAILS OR CATALOG CUTS FOR THE RECORD: LIGHTING AND POWER PANELS, WIRING DEVICES, SAFETY SWITCHES, TRANSFORMER, TIME CLOCKS AND ANY OTHER ITEMS AS REQUESTED BY THE OWNER OR THE OWNER'S ARCHITECT.

10. WORKMANSHIP:

A. USE EXPERIENCED, WELL-QUALIFIED CRAFTSMEN, IN GOOD STANDING WITH THEIR RESPECTIVE LABOR UNIONS.

B. USE CAPABLE AND EXPERIENCED SUPERINTENDENTS, AUTHORIZED BY THE CONTRACTOR TO INSTRUCT WORK, MAKE JOB DECISIONS AND ACT FOR THE CONTRACTOR IN ALL MATTERS PERTAINING TO THE CONTRACT.

11. PERMITS, TESTS AND INSPECTIONS:

A. APPLY FOR, SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, LICENSES AND ROYALTIES TO ACCOMPLISH THE WORK.

B. APPLY FOR, SECURE AND PAY FOR ALL REQUIRED TESTS AND INSPECTIONS TO ACCOMPLISH THE WORK IN CONFORMANCE WITH ALL CODES AND JURISDICTIONS.

C. FURNISH SIGNED CERTIFIED AND ACCEPTABLE COPIES OF ALL ITEMS COVERED IN (A) AND (B) ABOVE TO THE OWNER FOR HIS RECORDS.

D. COMPLY WITH RULES AND REGULATIONS OF JURISDICTIONAL AUTHORITIES AND MALL OR LEASE SPECIFICATIONS AND REPORT ANY DEVIATIONS ON DRAWINGS TO OWNER.

12. CODES, RULES AND REGULATIONS: INCLUDE IN ELECTRICAL BID ANY ADDITIONAL MATERIALS AND LABOR, THAT MAY BE REQUIRED FOR COMPLIANCE WITH ALL GOVERNING LAWS, RULES AND REGULATIONS, EVEN THOUGH THE WORK IS NOT MENTIONED IN THESE SPECIFICATIONS OR SHOWN ON THE DRAWINGS. NOTHING IN THE PLANS OR SPECIFICATIONS SHALL BE DEEMED AS AUTHORITY TO VIOLATE ANY GOVERNING CODE.

13. ACCURACY OF DATA:

A. THE DATA GIVEN HEREIN AND ON THE DRAWINGS ARE AS EXACT AS COULD BE SECURED, BUT THEIR ABSOLUTE ACCURACY IS NOT GUARANTEED. THE SPECIFICATIONS AND DRAWINGS ARE FOR THE ASSISTANCE AND GUIDANCE OF THE CONTRACTOR. EXACT LOCATIONS, DISTANCES, LEVELS, ETC., WILL BE GOVERNED BY THE BUILDING AND THE CONTRACTOR SHALL USE THE DATA CONTAINED HEREIN WITH THIS UNDERSTANDING.

B. THE EXACT LOCATION OF EACH AND EVERY OUTLET OF EACH WIRING SYSTEM, NOT DIMENSIONED ON THE DRAWINGS, SHALL BE AS DIRECTED BY THE OWNER, THE OWNER'S ARCHITECT OR HIS SELECTED REPRESENTATIVE.

14. CLEANUP: REMOVE ALL SURPLUS MATERIAL, EQUIPMENT AND DEBRIS INCIDENTAL TO THIS WORK AND LEAVE THE PREMISES IN A CONDITION ACCEPTABLE TO THE OWNER.

15. GUARANTEE: FURNISH A WRITTEN CERTIFIED GUARANTEE, IN ACCEPTABLE FORM TO THE OWNER, AGAINST ANY DEFECTIVE WORKMANSHIP, MATERIAL AND OPERATING EQUIPMENT. THIS GUARANTEE SHALL BE IN FULL FORCE AND EFFECTIVE FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE OF THE INSTALLATION.

16. TEMPORARY ELECTRIC SERVICE: THE ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL WIRING FOR CONSTRUCTION USE AS FOLLOWS: THE SERVICE ENTRANCE AND FEEDER SHALL BE 60 AMPS, SINGLE PHASE, 3 WIRE 120/208 VOLT FUSED MAIN DISCONNECT. THE FEEDER TO SERVE THE TEMPORARY DISTRIBUTION WIRING PROVIDING TEMPORARY LIGHTING IN ALL AREAS AS INDICATED ON DRAWINGS AND WHEREVER REQUIRED FOR THE OPERATION OF 120 VOLT SINGLE PHASE PORTABLE TOOLS AND EQUIPMENT NOT TO EXCEED 1 H.P.. THE WIRING SHOULD BE EXTENDED ALSO, SO THERE IS A 120 VOLT SINGLE PHASE OUTLET WITHIN 75 FEET OF ANY PORTION OF THE BUILDING. PROVIDE GROUND FAULT PROTECTION FOR ALL REQUIRED RECEPTACLES NOT TO BECOME A PERMANENT PART OF THE INSTALLATION.

17. STRUCTURAL CONDITIONS: NOTCHING AND BORING OF STRUCTURAL MEMBERS WILL NOT BE PERMITTED. IF CONDUIT, BOXES, ETC. NEED TO BE HUNG FROM STRUCTURAL STEEL, ONLY HANG FROM TOP FLANGE OF BEAMS AND TOP CHORDS AND ONLY AT PANEL POINTS OF JOISTS/ TRUSSES.

18. COOPERATION WITH OTHER CONTRACTORS: THIS CONTRACTOR SHALL COOPERATE WITH ALL OTHER CONTRACTORS FURNISHING LABOR MATERIALS AND ALL WORK, SO THAT THE WORK AS A WHOLE SHALL BE EXECUTED AND COMPLETED WITHOUT CONFLICT OR DELAY. IN THE EVENT OF ANY MECHANICAL OBSTRUCTION, AS PLUMBING OR AIR CONDITIONING DUCTS IN WAY OF ELECTRICAL EQUIPMENT, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO NOTIFY THE OWNER'S ARCHITECT BEFORE COMMENCING ANY WORK.

II. BASIC MATERIALS AND METHODS

1. RACEWAYS AND BOXES:

A. WHERE SIZES OF RACEWAY OR BOXES ARE NOT INDICATED, THE CONTRACTOR SHALL SIZE THESE ITEMS AS REQUIRED FOR THE INSTALLATION.

B. FLEXIBLE METAL CONDUIT AS ALLOWABLE BY CODE SHALL BE USED FOR FINAL CONNECTION OF LIGHTING FIXTURES AND WIRING DEVICES TO BE INSTALLED IN HUNG CEILINGS.

C. WORK INSTALLED IN METAL PARTITIONS SHALL BE RUN IN CONCEALED ELECTRIC METALLIC TUBING OR FLEXIBLE CONDUIT AS REQUIRED BY GOVERNING CODE AND LANDLORD.

D. BRANCH CIRCUIT WORK CHASED INTO EXISTING CONSTRUCTION FOR CONCEALMENT UNDER PATCHED FINISHES, MAY BE INSTALLED IN RIGID CONDUIT, OR EMT.

E. CONDUITS THAT RUN EXPOSED ON EXTERIOR OF BUILDING SHALL BE RIGID CONDUIT WITH WEATHER TIGHT, CORROSION RESISTANT FITTINGS.

F. FLEXIBLE STEEL CONDUITS SHALL BE USED IN MAKING UP SHORT, FLEXIBLE CONNECTIONS TO ROTATING OR VIBRATING MACHINERY, MINIMUM 12" LENGTH AND FOR CONNECTIONS BETWEEN JUNCTION BOXES IN HUNG OR FURRED CEILING FIXTURES.

G. ALL INTERIOR FEEDERS OR EXPOSED FEEDERS TO THE PUBLIC'S EYE, SHALL BE INSTALLED IN RIGID CONDUIT OR EMT.

H. ALL INTERIOR LOW VOLTAGE WIRING SHALL BE INSTALLED IN RIGID CONDUIT OR EMT WHERE REQUIRED BY CODE.

I. MINIMUM SIZE CONDUIT SHALL BE 3/4" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

J. ALL WORK RUN IN UNEXCAVATED AREAS, CRAWL SPACES, TUNNELS, OR UNDERGROUND SHALL BE INSTALLED IN RIGID CONDUIT.

K. ALL WORK RUN EXPOSED WITHIN THE BUILDING MAY BE INSTALLED IN RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING.

L. ALL WORK RUN CONCEALED WITHIN HUNG OR FURRED CEILINGS, METAL STUD PARTITIONS AND THE LIKE, MAY BE INSTALLED IN RIGID STEEL CONDUIT, ELECTRIC METALLIC TUBING EXCEPT THAT WIRING IN OR THROUGH SLABS SHALL BE IN RIGID CONDUIT.

M. GALVANIZED PRESSED STEEL OUTLET BOXES OF PROPER SIZE AND TYPE AS REQUIRED BY THE BUILDING CONDITIONS SHALL BE PROVIDED FOR ALL INTERIOR OUTLETS FOR LIGHTING, SWITCHES, RECEPTACLES, CLOCKS, SIGNALS, AND THE LIKE.

N. PROVIDE GALVANIZED FITTINGS FOR EXPOSED WORK, THREADED FOR CONDUIT CONNECTIONS AND PROVIDE WITH SUITABLE COVERS.

O. THE OUTLETS FOR LOCAL SWITCHES SHALL BE INSTALLED ADJACENT TO THE TRIM ON THE STRIKING SIDE OF THE DOOR, REGARDLESS OF THE LOCATIONS INDICATED ON THE DRAWINGS; THEREFORE, CHECK ALL DOOR SWINGS BEFORE INSTALLING CONDUIT AND OUTLETS.

2. GROUNDING:

A. ALL MAJOR PARTS NOT CARRYING CURRENT, INCLUDING THE FOLLOWING ITEMS BELOW, SHALL BE PROPERLY GROUNDED:

A.1. SECONDARY FEEDER CONDUIT AND EQUIPMENT ENCLOSURES.
A.2. PANEL BOARD ENCLOSURES, PULL AND JUNCTION BOXES, CABLE TROUGHS.
A.3. ALL CONDUITS, METAL MOLDING AND OUTLET BOXES.
A.4. FAN AND EQUIPMENT HOUSINGS EXPOSED ON THE STRUCTURE OR ON GRADE.

B. ALL CASH REGISTER OUTLETS TO BE ISOLATED AND SEGREGATED.

3. SAFETY SWITCHES: PROVIDE WHERE SHOWN OR AS REQUIRED, HEAVY-DUTY, METAL ENCLOSED, EXTERNALLY OPERATED FUSED, OR UNFUSED, SAFETY SWITCHES, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED. THE OPERATING MECHANISM SHALL BE SO DESIGNED THAT THE SWITCHES MAY BE LOCKED IN THE "ON" OR "OFF" POSITIONS. WHERE "WEATHERPROOF" SAFETY SWITCHES ARE INDICATED OR REQUIRED, THESE SHALL BE AS SPECIFIED ABOVE EXCEPT ENCLOSURES SHALL BE NEMA III, RAINTIGHT.

4. MOTOR AND OTHER WIRING:

A. PROVIDE ALL REQUIRED CONDUIT, WIRING AND SAFETY SWITCHES FOR ALL MOTORS, AND ANY OTHER ELECTRICAL EQUIPMENT INSTALLED OR CONNECTED UNDER THIS DIVISION.

B. ALL MOTORS WILL BE FURNISHED AND SET UNDER OTHER DIVISION, THE WORK OF THIS DIVISION SHALL INCLUDE PROVIDING ALL CONNECTIONS SO AS TO BE COMPLETE.

C. ALL STARTING DEVICES, MOTOR CONTROLLERS, FLOAT SWITCHES, LEVEL SENSORS, ALARM DEVICES, REMOTE CONTROL PUSH BUTTONS, ETC., WILL BE FURNISHED BY THE VARIOUS CONTRACTORS, UNLESS OTHERWISE NOTED HEREIN. BUT THIS CONTRACTOR SHALL SET THESE DEVICES AND PROVIDE ALL CONNECTIONS.

D. FOR EACH THERMOSTAT (BY H.V.A.C.), PROVIDE 4" x 4" OUTLET BOX WITH 3/4" EMPTY CONDUIT STUBBED UP INTO CEILING AND BUSHED. PROVIDE STEEL DRAG WIRE FOR EACH LOCATION.

5. WIRING DEVICES:

A. COMPUTER RECEPTACLES AT CASH WRAP AREA SHALL BE HUBBELL #IG5262, COMPUTER GRADE WITH "ISOLATED" GROUND LUGS.

B. ALL WIRING DEVICES INSTALLED IN THIS BUILDING SHALL BE "SPECIFIED GRADE," MANUFACTURED BY ARROW, HART AND HEGEMAN, HUBBELL, GENERAL ELECTRIC, OR EQUIVALENT.

C. LOCAL SWITCHES SHALL BE TOGGLE TYPE, A.C. RATED 20 AMPERES, 125 VOLTS, QUIET-TYPE WITH SILENT OPERATING MECHANISM, TOTAL CLOSED IN A MOLDED COMPOSITION BASE. SWITCHES SHALL BE SINGLE POLE, THREE OR FOUR-WAY AS INDICATED. WHERE LOCK TYPE LOCAL SWITCHES ARE INDICATED, THESE SHALL BE SIMILAR TO ABOVE SPECIFICATION WITH KEY OPERATOR; PROVIDE TO OWNER TWO (2) KEYS FOR EACH SWITCH INSTALLED.

D. ALL RECEPTACLES INSTALLED IN THIS BUILDING SHALL BE OF THE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION TO CONDUIT SYSTEM.

6. WIRES AND CABLES:

A. ALL WIRE FOR LIGHT AND POWER INSTALLATIONS SHALL BE HIGH CONDUCTIVITY COPPER, 600 VOLT INSULATED IN ACCORDANCE WITH THE NATIONAL BOARD OF FIRE UNDERWRITERS STANDARDS FOR TYPE "THW" WIRES, EXCEPT AS NOTED ON THE DRAWINGS OR OTHERWISE SPECIFIED HEREIN.

B. NO WIRE SHALL BE SMALLER THAN NO. 12 A.W.G.. ALL WIRES NO. 8 AND LARGER SHALL BE STRANDED.

C. WIRES SHALL BE COLOR CODED.

D. ALL WIRES SHALL BE POLARIZED.

E. CIRCUIT WORK BETWEEN OUTLET BOXES AND EACH RECESSED LIGHTING FIXTURE SHALL BE TYPE 'AF' WIRE.

F. HOME RUNS AND BRANCH WIRING FOR 120 VOLT CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	HOME RUN WIRE SIZE	CIRCUIT WIRE SIZE
1' TO 50'	12	12
50' TO 100'	10	12
100' TO 150'	8	12

7. LIGHTING AND POWER PANELS:

A. PANELS SHALL BE CIRCUIT BREAKER TYPE INSTALLED IN CODE GAUGE GALVANIZED SHEET STEEL CABINETS, FLUSH OR SURFACE MOUNTED AS INDICATED ON THE DRAWINGS. THE PANEL SECTIONS SHALL BE MOUNTED AWAY FROM THE BACK OF THE CABINETS IN SUCH A MANNER THAT THERE WILL BE NO SPACE BETWEEN THE CABINET TRIMS AND FRAMES. THE GUTTER SPACES ON ALL SIDES, TOPS AND BOTTOMS SHALL BE OF SUFFICIENT SIZE TO PREVENT OVERCROWDING OF WIRES AND CABLES AND TO PROVIDE SUFFICIENT VENTILATION TO PREVENT OVERHEATING OF THE CIRCUIT BREAKERS. EACH CABINET SHALL BE COMPLETE WITH HINGED DOORS, CYLINDER LOCK, DIRECTORY FRAME AND NEATLY TYPED DIRECTORY CHARTS. ALL PANELS SHALL BE KEYED ALIKE. INSTALL AN ANGLE PIECE ON INSIDE OF EACH TRIM FOR EASE OF INSTALLATION.

B. THE BRANCH CIRCUIT BREAKERS, IN GENERAL, SHALL BE MOLDED CASE, BOLT-ON TYPE, RATED 10,000 AIC ON 120/208V, 100 AMPERE FRAME, THERMAL MAGNETIC TRIP SINGLE, TWO OR THREE POLE AS SHOWN ON THE DRAWINGS. ALL MULTIPLE POLE BREAKERS FOR PANELS WHERE INDICATED ON THE DRAWING SCHEDULES. MAIN BREAKER CHARACTERISTICS SHALL BE AS INDICATED ON THE DRAWINGS. MAIN BUSS WORK OF ALL PANELS SHALL, AS A MINIMUM, BE DESIGNED TO CARRY THE FULL RATING OF THE FEEDER SWITCH SUPPLYING THE PANEL, AT A CIRCUIT DENSITY OF 800 AMPERES PER SQUARE INCH OF CROSS SECTION. BUSS WORK SHALL BE HIGH CONDUCTIVITY COPPER (277 / 480V CIRCUIT BREAKERS SHALL BE RATED AT 14,000 A.I.C.).

C. PANEL SECTIONS SHALL BE SUCH THAT NO LIVE PARTS ARE EXPOSED AFTER INSTALLATION. THEY SHALL BE SO ARRANGED THAT EACH BREAKER IS READILY REMOVABLE FROM THE PANEL WITHOUT DISTURBING ADJACENT BREAKERS. ELECTRICAL CONTRACTOR TO PROVIDE TYPED BREAKER LIST.

D. PHASE LEGS SHALL BE ALTERNATELY BUSSED TO EACH CIRCUIT BREAKER IN A MANNER TO AFFECT BALANCING THE BRANCH CIRCUIT CONNECTIONS AS NEARLY AS POSSIBLE OVER EACH PHASE.

8. DRY TYPE TRANSFORMERS (IF NEW IS REQUIRED):

A. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A DRY TYPE AIR COOLED INDOOR POWER TRANSFORMER, AS RATED ON THE DRAWINGS AND HEREINAFTER SPECIFIED.

B. THE TRANSFORMER SHALL BE PROVIDED WITH SUITABLE VIBRATION DAMPERS. SAME TO BE PLACED BETWEEN THE CORE AND THE COILS OF THE ENCLOSURE.

C. THE TRANSFORMER SHALL HAVE CLASS 'H' INSULATION, AND THE WIRING TEMPERATURE RISE SHALL NOT EXCEED 150 DEGREES CELSIUS UNDER FULL LOAD IN AN AMBIENT TEMPERATURE OF 40 DEGREES CELSIUS.

D. THE TRANSFORMER ENCLOSURE SHALL BE PRIMED INSIDE AND OUT WITH A ZINC-COATED CHROMATE IRON OXIDE RUST INHIBITING PRIMER AND FINISHED ASAG1 GRAY ENAMEL.

E. THE MAXIMUM ACCEPTABLE NOISE LEVEL SHALL NOT EXCEED THE FOLLOWING: 0 TO 150 kVA - 42 dB

9. LIGHTING FIXTURES:

A. ALL LIGHTING FIXTURES AND LAMPS SHALL BE SUPPLIED BY THE TENANT AND / OR TENANT'S LIGHT FIXTURE AND LAMP SUPPLIER UNLESS OTHERWISE NOTED, AND SHALL BE DELIVERED HANDLED, ASSEMBLED AND INSTALLED AT THE SITE BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE UNLOADING, STORAGE AND PROTECTION OF ALL ITEMS FOUND TO BE DEFECTIVE AND SHALL BE REPLACED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL THE NECESSARY LABOR AND MATERIALS FOR THE COMPLETE INSTALLATION OF THE LIGHTING FIXTURES AS INDICATED ON THE DRAWINGS.

C. ALL FLUORESCENT AND INCANDESCENT LAMPS SHALL BE AS NOTED ON PLANS AND SPECIFICATIONS AND SHALL BE PROVIDED BY THE TENANT AND/OR TENANT'S LIGHT FIXTURE AND LAMP SUPPLIER AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

D. SEE ELECTRICAL DRAWING FOR LIGHTING FIXTURE DESCRIPTIONS.

III. SPECIFIC ELECTRICAL SPECIFICATIONS

1. SEE ELECTRICAL DRAWINGS - LANDLORD'S CRITERIA: THE ELECTRICAL CONTRACTOR IS TO BECOME FAMILIARIZED WITH LANDLORD'S CRITERIA FOR THIS LOCATION AND INCLUDE ANY WORK REQUIRED OF THIS CRITERIA, WHICH IS NOT SPECIFICALLY NOTED IN THESE DRAWINGS AND SPECIFICATIONS.

IV. TELEPHONE

1. PROVIDE 3/4" EMT IN WALLS WITH DRAG STRING AT EACH LOCATION.

V. MISCELLANEOUS

1. ALUMINUM WIRE IS STRICTLY PROHIBITED FOR THIS PROJECT.

2. DURING DEMOLITION, ANY ELECTRICAL EQUIPMENT, FIXTURE SYSTEMS, CONDUIT AND WIRE ARE TO BE REMOVED AS NOTED AND NOT REUSED. THIS UNUSED EQUIPMENT, FIXTURE SYSTEMS, CONDUIT, AND WIRE MAY NOT BE ABANDONED AND LEFT WITHIN THE SPACE. THEY MUST BE REMOVED TO AN APPROVED DISPOSAL SITE.

VI. "GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL CHANGES TO APPLICATIONS NOT CONSISTENT WITH CONTRACT DOCUMENTS IN ALL CASES, INCLUDING "SELF-CERTIFICATION" BY THE ARCHITECT."

HOME RUNS AND BRANCH WIRING FOR 120 VOLT 16 AMP CIRCUITS SHALL BE AS FOLLOWS TO ACCOUNT FOR VOLTAGE DROP:

LENGTH	HOME RUN WIRE SIZE	CIRCUIT WIRE SIZE
1' TO 65'	12	12
66' TO 104'	10	12
105' TO 156'	8	12
157' TO 263'	6	12
264' TO 419'	4	12

ELECTRICAL PANEL SCHEDULE

PANELBOARD			B	VOLTAGE		120 / 208 V		PHASE		3	WIRE		4						
PANEL TYPE			MCB	MAINS		400		BUS RATING		400	AIC RATING		FIELD VERIFY						
NEMA TYPE ENCLOSURE				MOUNTING		SURFACE		OPTIONS			NOTE		NEW PANEL						
CKT. NO.	EQT TAG	EQT TAG	EQT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	EQT TAG	EQT TAG	EQT TAG	CKT. NO.
1				SPARE	1		20		A		20		1	SPARE				2
3	A/B	(N)		SEATING AREA LIGHTING	1	12	20	108	B	324	20	12	1	JUICE BAR LIGHTING	(N)	C		4
5		(N)	91	DRINK MACH. - BLENDER	1	12	20	1,322	C	454	20	12	1	PREP AREA LIGHTING	(N)			6
7		(N)	91	DRINK MACH. - BLENDER	1	12	20	1,322	A	836	20	12	1	JUICE EXTRACTOR	(N)		20	8
9		(N)	91	DRINK MACH. - BLENDER	1	12	20	1,322	B	196	20	12	1	REFRIGERATOR-SHOW CASE	(N)		30	10
11		(N)		TABLE TOP OVEN	1	12	20	1,200	C	540	20	12	1	SIDE BAR COUNTER OUTLET	(N)			12
13		(N)	9.1	WORK TOP REFRIGERATOR	1	12	20	345	A	360	20	12	1	SIDE BAR COUNTER OUTLET	(N)			14
15		(N)		ICE BIN QUAD	1	12	20	360	B	100	20	12	1	RCP-1	(N)			16
17		(N)	90	BAR BLENDER	1	12	20	1,725	C	5,000	60	4	2	WATER HEATER (WH-1)	(N)			18
19		(N)	90	BAR BLENDER	1	12	20	1,725	A	5,000								20
21		(N)	90	BACK BAR COUNTER OUTLET	1	12	20	180	B	900	20	12	1	TOILET GFI + GENERAL	(N)			22
23		(N)	90	BAR BLENDER	1	12	20	1,725	C	720	20	12	1	MANAGER'S DESK QUAD	(N)			24
25		(N)	6.1	FREEZER	1	12	20	322	A	720	20	12	1	TELEPHONE BOARD	(N)			26
27		(N)	94	SPEED OVEN	2	10	30	3,100	B	728	20	12	2	REACH IN REFRIGERATOR	(N)		15	28
29								3,100	C	728								30
31		(N)	4	POS QUADS	1	12	20	720	A	936	20	12	2	REACH IN FREEZER	(N)		16	32
33		(N)	7	POP-UP TOASTER	1	12	20	1,725	B	936								34
35		(N)	7	POP-UP TOASTER	1	12	20	1,725	C	1,087	20	12	1	NUGGET ICE MACHINE	(N)		17	36
37		(N)		FRONT BAR COUNTER OUTLET	1	12	20	360	A	12,576								38
39		(N)	9	U/C REFRIGERATOR	1	12	20	276	B	6,949	100	3	3	PANEL-C	(N)			40
41		(N)	12.3	COLD FOOD STATION	1	12	20	494	C	6,140								42

ALL PHASES TO BE BALANCED TO WITHIN 7%

A= 25,222 WATTS

B= 17,204 WATTS

C= 25,960 WATTS

TOTAL CONNECTED LOAD	68,386	WATTS	190	AMPS
TOTAL DEMAND LOAD	69,403	WATTS	193	AMPS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUIT VIA TIMECLOCK
ds# LIGHT CIRCUITS VIA DIMMER SWITCHES
C# CIRCUITS ON LIGHTING CONTACTORS
a,b,c SWITCHES CONTROLLING LIGHTS

CONTRACTOR TO PROVIDE PHYSICAL LABELS INDICATING PANEL AND CIRCUIT NUMBERS ON ALL EQUIPMENT AND RECEPTACLES CORRESPONDING TO THE PANEL SCHEDULE. IN ADDITION, THE KITCHEN EQUIPMENT SCHEDULE SHOULD BE PLACED INSIDE EACH PANEL.

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.

ALL PANELS SHOWN TO INCLUDE BREAKERS DURING BIDDING STAGE.

ELECTRICAL PANEL SCHEDULE

PANELBOARD			C	VOLTAGE		120 / 208 V		PHASE		4	WIRE		4						
PANEL TYPE			MLO	MAINS		MLO		BUS RATING		125	AIC RATING		FIELD VERIFY						
NEMA TYPE ENCLOSURE				MOUNTING		SURFACE		OPTIONS			NOTE		NEW PANEL						
CKT. NO.	EQT TAG	CKT. TAG	EQT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR. SIZE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	EQT TAG	EQT TAG	EQT TAG	CKT. NO.
1	(N)		92	LARGE FOOD BLENDER	1	12	20	1,725	A	720	20	12	1	GENERAL OUTLET		(N)		2
3	(N)		1	RECH IN REFRIGERATOR	1	12	20	518	B	400	20	12	1	SHOW WINDOW OUTLET		(N)	TC1	4
5	(N)	TC1		SHOW WINDOW OUTLET	1	12	20	1,500	C	1,000	20	12	1	STORE FRONT SIGN		(N)	TC1	6
7	(N)			AHU-1	2	4	60	5,491	A	1,000	20	12	1	STORE FRONT SIGN		(N)	TC1	8
9								5,491	B	180	20	12	1	MERCHANDISE SERV. RECEPT		(N)		10
11	(N)			ACCU-1	2	8	40	3,640	C		20		1	SPARE				12
13								3,640	A		20		1	SPARE				14
15	(N)			ROOF RECEPTACLE	1	12	20	360	B		20		1	SPARE				16
17				SPARE	1		20		C		20		1	SPARE				18
19				SPARE	1		20		A		20		1	SPARE				20
21				SPARE	1		20		B		20		1	SPARE				22
23				SPARE	1		20		C		20		1	SPARE				24
25				SPARE	1		20		A		20		1	SPARE				26
27				SPARE	1		20		B		20		1	SPARE				28
29				SPARE	1		20		C		20		1	SPARE				30

ALL PHASES TO BE BALANCED TO WITHIN 7%

A= 12,576 WATTS

B= 6,949 WATTS

C= 6,140 WATTS

TOTAL CONNECTED LOAD	25,485	WATTS	71	AMPS
TOTAL DEMAND LOAD	26,460	WATTS	74	AMPS

(E) EXISTING TO REMAIN
(N) NEW CIRCUIT
GFCI GROUND FAULT CURRENT INTERRUPTER
IG CIRCUITS WITH ISOLATED GROUND
TC CIRCUIT VIA TIMECLOCK
ds# LIGHT CIRCUITS VIA DIMMER SWITCHES
C# CIRCUITS ON LIGHTING CONTACTORS
a,b,c SWITCHES CONTROLLING LIGHTS

ELECTRICAL LOAD SUMMARY PANEL

DESCRIPTION	NEC CONNECTED kW	VOLT	PHASE	NEC DEMAND FACTOR	NEC DEMAND kW
LIGHTING- 120V	0.9	120	1	1.25	1.1
RECEPTACLES	6.0	120	1	>10kW=10+[0.5*(kW-10)]	6.0
STOREFRONT SIGN	2.0	120	1	1.25	2.5
S/W OUTLETS	1.9	120	1	1.25	2.4
AHU	11.0	208	1	1.00	11.0
CU	7.3	208	1	1.00	7.3
KITCHEN EQUIPMENT	29.1	208	1	1.00	29.1
HOT WATER HEATER	10.0	208	1	1.00	10.0
TOTALS	68.2				69.4

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

69.4 x 1000 = 69,403

208 x 1.732 = 360

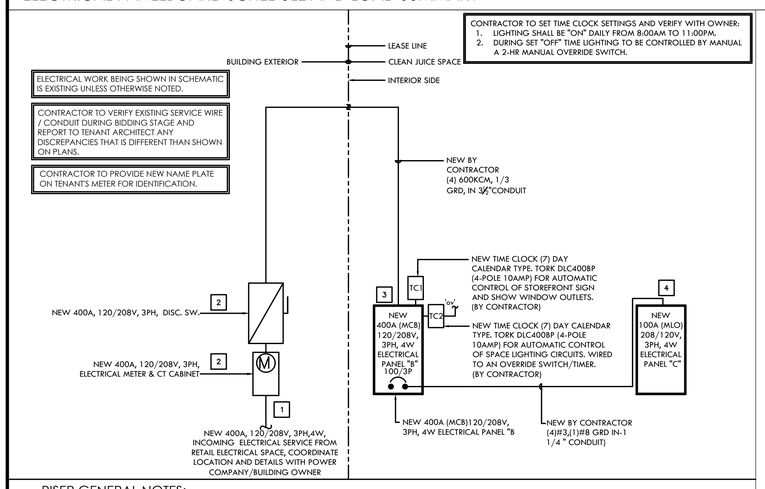
192.6 AMPS USE (NEW) 400AMP SERVICE.

ELECTRICAL PANEL SCHEDULE NOTES:

1. E.C. TO PROVIDE GFCI RECEPTACLE IF GFI BREAKER ARE NOT POSSIBLE. PROVIDE GFI BREAKER ONLY FOR RECEPTACLE WHICH ARE NOT REALLY ACCESSIBLE.
2. ALL 125 VOLTS THROUGH 250 VOLTS RECEPTACLE SUPPLIED BY SINGLE PHASE BRANCH CIRCUIT RATED 150 VOLTS OR LESS TO GROUND, 50 AMPERES OR LESS, AND ALL RECEPTACLE BY THREE-PHASE BRANCH CIRCUIT RATED 150 VOLTS OR LESS TO GROUND, 100 AMPERES OR LESS, INSTALLED IN THE LOCATION SPECIFIED IN 210.8 (B) SHALL HAVE GFCI PROTECTION. ALL THE KITCHEN EQUIPMENT SHALL HAVE GFI PROTECTION.
3. ALL CIRCUITING SHOWN IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING OF THE EXISTING DEVICES ON FIELD AND INFORM ENGINEER FOR DISCREPANCIES.
4. ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
5. ELECTRICAL CONTRACTOR TO COORDINATE WITH THE MANUFACTURER OF EQUIPMENT FOR THE WIRE SIZE & RATING OF MOCP BEFORE THE COMMENCEMENT OF WORK.
6. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF PLUMBING/MECHANICAL EQUIPMENTS WITH RESPECTIVE SYSTEM CONTRACTOR/OWNER/ARCHITECT.

ELECTRICAL PANELBOARD SCHEDULE AND LOAD SUMMARY

SCALE N/A | 1



RISER GENERAL NOTES:

1. ALL CONDITIONS TO BE FIELD VERIFIED BEFORE SUBMITTING BID.
2. GENERAL CONTRACTOR TO MAINTAIN FIRE RATING OF PARTITION NEW ELECTRICAL EQUIPMENT IS BEING SECURED TO.
3. ALL ELECTRICAL WORK BEING SHOWN IN SCHEMATIC TO BE BY TENANTS GENERAL CONTRACTORS ELECTRICAL SUBCONTRACTOR UNLESS OTHERWISE NOTED.
4. THE ELECTRICAL CONTRACTOR'S SUB-CONTRACTOR IS RESPONSIBLE FOR CHECKING ALL VOLTAGES ON PLANS UPON FIRST VISIT TO THE SITE. THE INCOMING SERVICE SHOULD CORRESPOND TO THE SPECIFICATIONS FOR THE LIGHTING FIXTURES AND THE H.V.A.C EQUIPMENT AND BE PROPERLY NOTED ON THE ELECTRICAL PANEL DIAGRAMS AND RISERS. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY.
5. HVAC CIRCUIT BREAKERS SHALL BE "HACR" TYPE WHERE REQUIRED BY EQUIPMENT NAMEPLATE PER N.E.C.
6. TENANTS ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT A.I.C. RATING OF LANDLORDS DISTRIBUTION EQUIPMENT, FURNISH AND INSTALL TENANTS SYSTEM TO MATCH.
7. ELECTRICAL CONTRACTOR SHALL BALANCE ALL PANELS AND + ELECTRICAL EQUIPMENT TO 10% ( ) BETWEEN PHASES: A/B B/C, - A/C REGARDLESS OF CIRCUITING INDICATED.
8. 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.
9. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM.
10. ALL ELECTRICAL WORK SHALL BE INSTALLED SO AS TO READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING & REPAIRING.
11. EXISTING INCOMING FEEDERS TO REMAIN. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD AND PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

RISER KEY NOTES:

1. E.C. SHALL GET INFORMATION ABOUT NEW POWER DISTRIBUTION PRIOR TO COMMENCING ANY WORK AND INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.
2. NEW 400A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL METER, CT CABINET & 400A,120/208V,3-PHASE, 4-WIRE NEW DISCONNECT SWITCH (BY LANDLORD). E.C SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
3. NEW 400A(MCB), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B". E.C SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER
4. NEW 100A(MLO), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "C". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.

FEEDER CIRCUIT SCHEDULE:

ALL CONDUCTOR SIZES ARE BASED ON 75 DEG C RATED TERMINATIONS. COPPER CONDUCTORS ARE BASED ON THHN/THWN-2 INSULATION. FOR ANY OTHER CONDITIONS ALLOWED PER SPECIFICATIONS, OR FOR TERMINATIONS OR INSULATION TYPES RATED LESS THAN 75 DEG C, MODIFY SIZES ACCORDING TO NFPA 70.

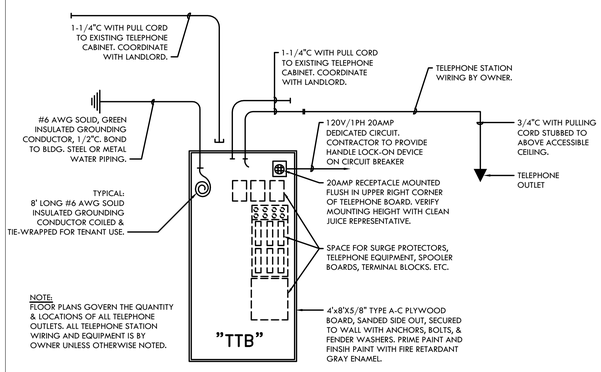
LEGEND:
NEW
EXISTING

ELECTRICAL RISER DIAGRAM GENERAL NOTES AND RISER KEY NOTES | SCALE N/A | 2

EQUIPMENT SCHEDULE

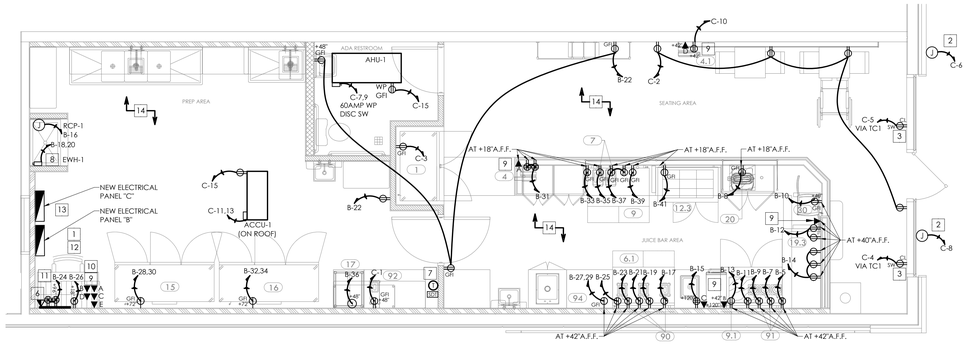
ITEM	QTY:	DESCRIPTION/NAME:	MOUNTING HT FROM A.F.F.	VOLTAGE	AMP.	MANUFACTURER:	MODEL NO:	PROVIDED BY	INSTALLED BY
1	1	REACH IN REFRIGERATOR (2 DOORS)	18"	115/60/1PH	4.5	SUPERA	PEGD-2DR-48-ES-HC (54" 2 HINGED DOORS)	BY OWNER	
6.1	1	FREEZER, WORKTOP	42"	115/60/1PH	2.8	TURBO AIR	TWF-48SD-D4-N	BY OWNER	
7	2	POP-UP TOASTER	18"	115/60/1PH	15	WARING COMMERCIAL	WCT702 (DIM: 8H X 7W X 14D)	BY OWNER	
9	1	UNDER COUNTER REFRIGERATOR	18"	115/60/1PH	2.4	TURBO AIR	TUR-48SD-D4-N	BY OWNER	
9.1	1	REFRIGERATOR, WORKTOP	42"	115/60/1PH	3	SUPERA	PWTR48-HC	BY OWNER	
12.3	1	BUFFET/CAFETERIA, COLD FOOD STATION	18"	115/60/1PH	4.3	TURBO AIR	PS-MT-48-HC	BY OWNER	
15	1	SOLID DOOR REACH-IN REFRIGERATOR (3 DOOR)	72"	208/60/1PH	7	SUPERA	PCR3-SI-HC (DIM: 82-3/4H X 81W X 33-3/4D)	BY OWNER	
16	1	SOLID DOOR REACH-IN FREEZER (3 DOOR)	72"	208/60/1PH	9	SUPERA	PCF3-DV-SI-HC (DIM: 82-3/4H X 81W X 33-3/4D)	BY OWNER	
17	1	NUGGET ICE MACHINE	48"	115/60/1PH	9.45	MANITOWOC	RNS-0244A (DIM: 33H X 20W X 26D) (4 LEGS)	BY OWNER	BY G.C.
20	1	JUICE EXTRACTOR	18"	115/60/1PH	7.27	ZUMMO	Z22C (DIM: 11-2/5H X 17-1/4W X 20-4/25D)	BY OWNER	
30	1	REFRIGERATOR, SHOW CASE	40"	115/60/1PH	1.7	TURBO AIR	CRT-77-2R-N	BY OWNER	
90	3	BAR BLENDER	42"	115/60/1PH	15	VITAMIX	3609 (ON COUNTER) (DIM: 18H X 8-1/2W X 10-3/4D)	BY OWNER	
91	3	DRINK MACHINE - BLENDER	42"	120/60/1PH	11.5	VITAMIX	62828	BY OWNER	
92	1	LARGE CAPACITY FOOD BLENDER	48"	120/60/1PH	15	VITAMIX	XL5201 (DIM: 18H X 8-1/2W X 19D)	BY OWNER	
94	1	OVEN	42"	208/60/1PH	6.2	PRATICA	COPA EXPRESS	BY OWNER	

KITCHEN EQUIPMENT SCHEDULE | SCALE NTS | 3

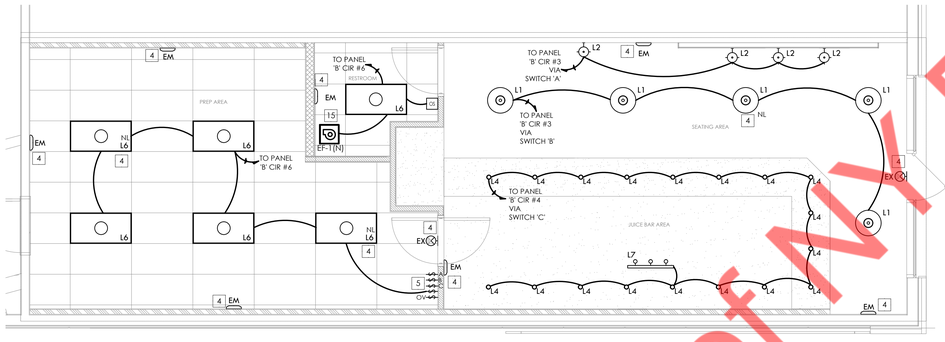


TELEPHONE RISER DIAGRAM | SCALE NTS | 4

ALL RECEPTACLES IN THE KITCHEN AND JUICE BAR AREA SHALL BE GFI PROTECTED (TYPICAL).



ELECTRICAL POWER PLAN — SCALE 1/4" = 1'-0" — 1



ELECTRICAL LIGHTING PLAN — SCALE 1/4" = 1'-0" — 3

POWER PLAN SYMBOLS — SCALE NTS — 2

SYMBOL	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
J	JUNCTION BOX
F	FLOOR BOX
	RECEPTACLE, 120 VOLT, 1 POLE, 3 WIRE GROUNDING TYPE, 20 AMPERE, MOUNTED +18" A.F.F. UNLESS OTHERWISE NOTED ON PLAN.
IG	RECEPTACLE WITH ISOLATED GROUND, 120 VOLT, 1 POLE, 3 WIRE GROUNDING TYPE, 20 AMP, MOUNTED +18" A.F.F. UNLESS OTHERWISE NOTED ON PLAN.
WP/GFCI	WEATHERPROOF/GROUND FAULT CURRENT INTERRUPTER, 120 VOLT, 1 POLE, 3 WIRE GROUNDING TYPE, 20 AMP, MOUNTED +18" A.F.F. UNLESS OTHERWISE NOTED ON PLAN.
D	RECEPTACLE - DEDICATED DUPLEX, 120 VOLT, 1 POLE, 3 WIRE GROUNDING TYPE, 20 AMP, MOUNTED +18" A.F.F. UNLESS OTHERWISE NOTED ON PLAN.
Q	RECEPTACLE - QUAD, 120 VOLT, 1 POLE, 3 WIRE GROUNDING TYPE, 20 AMPERE, MOUNTED +18" A.F.F. UNLESS OTHERWISE NOTED ON PLAN.
SO	SPECIAL OUTLET. REFER TO MANUFACTURER SPECIFICATION PRIOR TO START OF WORK.
T	TELEPHONE OUTLET
WAP	CEILING MOUNTED RECEPTACLE/DATA OUTLET FOR WAP
D	DATA OUTLET
DT	DATA/TELEPHONE OUTLET
DS	DISCONNECT SWITCH
T	THERMOSTAT
P	ELECTRICAL PANELBOARD
KEQ	KITCHEN EQUIPMENT TAG/DESIGNATION. REFER TO E1.1 FOR EQUIPMENT SCHEDULE.
FA	FIRE PULL STATION
MS	MANUAL SWITCH

LIGHTING FIXTURE SCHEDULE

SYMBOL & TYPE	MANUFACTURER & CATALOG NUMBER	DESCRIPTION	LAMP TYPE	VOLTS/ BALLAST	MOUNTING	INPUT WATTS	QUANTITY
L1	CED NATIONAL ACCOUNTS #CJ20INCPENDANT	PENDANT FIXTURE WITH LED BULB.	LED 3000K	120V	PENDANT	11.5	5
L1/NL	SAME AS TYPE "L1", CROSS-SHADED FIXTURE "NL", INDICATE NIGHT LIGHTING.						
L2	CED NATIONAL ACCOUNTS #CJ10INCWSCONCE	WALL SCONCE WITH LED BULB.	LED 3000K	120V	WALL SURFACE	11.5	4
L4	CREE #LR6X-18L-50K	6" RECESSED DOWN LIGHT FIXTURE.	LED 1800 LUMENS 3000K	120V	RECESSED CEILING	20.5	18
L6	CREE #LC-TR-C-FP24-500-50K-WH	2'x4' RECESSED FLAT PANEL LED FIXTURE.	LED 5,000 LUMENS 3000K	120V	RECESSED CEILING	41	6
L6/NL	SAME AS TYPE "L6", SHADED FIXTURES "NL", INDICATE NIGHT LIGHTING.						
L7	CED NATIONAL ACCOUNTS #NUVO TR121-4' WHITE TRACK #NUVO TH255-WH 6-ROUND WHITE	TRACK LIGHT	TRACK HEAD	120V	PENDENT	50	3
EM	WALL / CEILING LITHONIA #ELM2-LED HUBBELL DUAL LITE #L2 PHILIPS CHLORDE #VGIL COMPASS LIGHTING #CL12	SURFACE MOUNTED EMERGENCY LIGHTING UNIT, 90 MINUTE MINIMUM BATTERY BACKUP, WHITE FINISH.	TWO(2) LED LAMPHEADS	UNIVERSAL	UNIVERSAL	<5	7
RH	EX LITHONIA #LHQM-LED PHILIPS CHLORDE #VLLCR COOPER SURELITES #APCH COMPASS LIGHTING #CCRRC	COMBINATION EMERGENCY/ LIGHTING UNIT/EXIT SIGN, WHITE THERMOPLASTIC HOUSING, 90 MINUTE MINIMUM BATTERY BACKUP, RED LETTERS, WITH OUTDOOR LED REMOTE HEAD FIXTURE "RH".	LED EXIT, TWO(2) LED LAMPHEADS	UNIVERSAL	UNIVERSAL	<5	2
	EXHAUST FAN	REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION					

LEGEND:

E = EXISTING

NOTES:
A. ALL FIXTURES SHALL BE INSTALLED PER MANUFACTURE'S RECOMMENDATIONS.
B. ALL FIXTURES SHALL BE APPROVED BY OWNER PRIOR TO INSTALLATION.
C. ALL DIMENSIONS ARE TO FACE OF GYP. BD. U.N.O.
D. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE FIXTURE U.N.O.
E. ALL LIGHT FIXTURES IN PREP AREAS ARE SHIELDED OR ARE SHATTER-PROOF.

NOTES:
1. MOUNTING HEIGHT SHALL DETERMINED BY ARCHITECT.
2. COLORS OF LUMINAIRES SHALL BE DETERMINED BY ARCHITECT.
3. ALL LUMINAIRES SHALL BE AS SPECIFIED. SEE "LIGHTING NOTES" #12
4. PROVIDE PROGRAM START BALLASTS, U.N.O
5. SEE ADDITIONAL LIGHTING NOTES ON THIS SHEET.

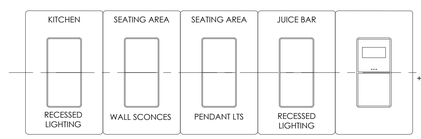
LIGHTING AND SYMBOL LEGEND — SCALE N.T.S. — 4

1. SEE EQUIPMENT SCHEDULE ON MECHANICAL SHEETS FOR ANY ADDITIONAL INFORMATION.
2. GENERAL CONTRACTOR TO COORDINATE REQUIRED SUBMITTALS TO FIRE DEPARTMENT FOR FIRE ALARM SYSTEM.
3. GENERAL CONTRACTOR TO COORDINATE REQUIRED SUBMITTALS TO FIRE DEPARTMENT FOR AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
4. BELOW GRADE CONDUIT AND EXTERIOR CONDUIT SHALL BE GALVANIZED STEEL.
5. ABOVE GRADE INTERIOR CONDUIT SHALL BE EMT OR IMC.
6. FANS AND MOTORS SHALL HAVE DISCONNECT SWITCH.
7. EQUIPMENT SHALL BE U.L. LISTED APPROVED, OR OTHER NATIONAL RECOGNIZED TESTING AGENCY.
8. RECEPTACLES SHALL BE GROUNDED, IN ACCORDANCE TO NATIONAL ELECTRIC CODE 250-146.
9. CONDUCTORS SHALL BE INSTALLED IN METAL CONDUIT DE SOLID AND STANDARD COPPER.
10. LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT WHERE WIRING INACCESSIBLE BY FINISH MATERIALS OR SUBJECT TO PHYSICAL DAMAGE. LOW VOLTAGE WIRING ABOVE LAY-IN CEILING TILE SHALL BE BRIDAL RINGS OR J-HOOKS.
11. ALL OUTLETS IN THE KITCHEN SHALL BE GFCI TYPE.
12. ALL LOW VOLTAGE WORK IS UNDER THE G.C. SCOPE. VERIFY REQUIRED LOW VOLTAGE SCOPE OF WORK WITH BRANS/OWNER REPRESENTATIVE PRIOR TO BID.
13. ALL NIGHT LIGHTS (SHOWN IN '/NL' DESIGNATION) SHALL BE PROVIDED WITH AN UNSWITCHED "HOT" TO PROVIDE CONTINUOUS POWER.

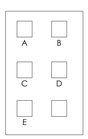
POWER PLAN GENERAL NOTES — SCALE NTS — 5

1. REFER TO SHEET E0.2 FOR POWER RISER DIAGRAM AND ELECTRICAL PANEL BOARD SCHEDULE FOR INFORMATION.
2. PROVIDE LOCAL OR INTEGRAL DISCONNECT SWITCH PER LATEST NEC FOR STOREFRONT SIGN. COORDINATE WITH SIGN VENDOR EXACT REQUIREMENTS PRIOR TO START OF WORK. CONTROL VIA TIME CLOCK (TC1).
3. PROVIDE SHOW WINDOW AS REQUIRED PER LOCAL JURISDICTION AND NEC. MOUNTED WITHIN 18" ABOVE SHOW WINDOW PANEL. VERIFY WITH OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN AND INSTALLATION. CONTROL VIA TIME CLOCK (TC1)
4. EXIT SIGN, EMERGENCY LIGHT, AND/OR NIGHT LIGHT. CONNECT (ALWAYS HOT) TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING.
5. CONTRACTOR TO PROVIDE AND COORDINATE EXACT LOCATION OF LIGHTING CONTROL SWITCHBANK. SEE DETAIL ON THIS SHEET FOR ADDITIONAL INFORMATION. CONFIRM SWITCHBANK WILL FIT WITHIN THIS DESIGNATED AREA AND STACK MULTIPLE SWITCHBANK AT THIS LOCATION IF A SIGNLE SWITCHBANK WILL NOT FIT WITHIN THIS DESIGNATED AREA. SWITCHES MUST BE LABELED TO INDICATE THE AREA SERVED.
6. PROVIDE TELEPHONE BOARD, CONDUITS, WIRES & CABLES, AND JUNCTION BOX/ES AS REQUIRED TO INSTALL TELE/DATA INCOMING SERVICE. COORDINATE EQUIPMENT NEEDED FOR INSTALLATION WITH TELEPHONE AND DATA PROVIDER PRIOR TO START OF WORK. REFER TO DETAIL 4/E0.2 FOR TELEPHONE RISER DIAGRAM FOR ADDITIONAL INFORMATION.
7. CONTRACTOR TO PROVIDE 3/4" EMPTY EMT CONDUIT WITH PULL STRING FROM THERMOSTAT AND SENSOR (WHERE REQUIRED) TO MECHANICAL UNIT. SEE MECHANICAL DRAWINGS FOR LOCATION.
8. PROVIDE JUNCTION BOX FOR POWER CONNECTION OF TANKLESS WATER HEATER ELECTRONIC IGNITION & POWER EXHAUST. ALL ELECTRICAL REQUIREMENTS TO BE COORDINATED WITH VENDOR PRIOR TO BID AND START OF WORK.
9. EACH DATA POINT ON THE LINE HAS A CORRESPONDING DATA POINT AT THE MANAGERS DESK. COORDINATE LOCATION OF RECEPTACLES WITH OWNER PRIOR TO ROUGH-IN. REFER TO DETAIL 8/E1.1
   - E.C. TO PROVIDE DATA WITH TYPE "A/B" OUTLETS AT 42" A.F.F. AND 96" A.F.F AT MANAGERS DESK.
   - E.C. TO PROVIDE DATA WITH TYPE "A/B" OUTLETS AND UNDER COUNTER.
   - E.C. TO PROVIDE DATA WITH TYPE "C" AND "D" OUTLETS AT 42" A.F.F. AND 96" A.F.F. AT MANAGERS DESK. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION
   - E.C. TO PROVIDE DATA WITH TYPE "E" OUTLET AT 120" A.F.F. AND 96" A.F.F. AT MANAGERS DESK. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION
10. CONTRACTOR TO VERIFY MOUNTING HEIGHTS OF POWER AND DATA/TELE OUTLETS IN MANAGER'S DESK WITH CLEAN JUICE PROJECT MANAGER PRIOR TO START OF WORK.
11. COORDINATE LOCATION OF RECEPTACLES WITH OWNER PRIOR TO ROUGH-IN. ENSURE RECEPTACLES IS ABOVE DESK BACKSPASH, IF APPLICABLE. CONTRACTOR TO PROVIDE DATA WITH TYPE A/B OUTLET. REFER TO DETAIL 8/E1.1.
12. NEW 400A(MCB), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "B". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
13. NEW 100A(MCB), 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "C". E.C. SHALL COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER.
14. ALL SECURITY CAMERAS TO BE INSTALLED BY GC. COORDINATE WITH THE FRANCHISE FOR EXACT LOCATION AND REQUIREMENTS.
15. EXHAUST FANS SHALL BE INTERLOCKED WITH OCCIPANCY SENSOR IN THE SAME ROOM.COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT REQUIREMENTS.

KEY NOTES — SCALE NTS — 6



SWITCHBANK LOCATION — SCALE NTS — 7



NOTE:

TYPE A/B DATA OUTLETS LOCATED UNDER:
P.O.S. AND ABOVE DESK IN JUICE BAR AND UNDER P.O.S. AT 96" AFFAT MANAGERS DESK.

TYPE C DATA OUTLETS LOCATED AT 42" AFF AND AT 96" AFF AT MANAGERS DESK.

TYPE D DATA OUTLETS LOCATED AT 42" AFF AND AT 96" AFF AT MANAGERS DESK.

TYPE E DATA OUTLETS LOCATED AT 120" AFF AND AT 96" AFF AT MANAGERS DESK.

DATA OUTLET DETAIL — SCALE NTS — 8

FIRE ALARM NOTE:

CONTRACTOR SHALL INSTALL A FIRE ALARM SYSTEM IN ACCORDANCE W/ THE APPLICABLE CODE. IF A FIRE ALARM MONITOR IS REQUIRED, THE MONITORING SERVICES SHALL BE PROVIDED BY CONTRACTOR AND ALL WORK PERFORMED BY CONTRACTOR'S F.A. CONTRACTOR. IF IT IS AN INDEPENDENT FIRE ALARM PANEL, LANDLORD TO PROVIDE MONITORING FOR FIRST 30 DAYS, THEN TENANT TO TAKE OVER.

IMPORTANT BID NOTICE REGARDING KITCHEN EQUIPMENT:

CONTRACTOR SHALL OBTAIN KITCHEN EQUIPMENT CUT SHEETS FROM ARCHITECT/OWNER FOR DETAILS AND REQUIREMENTS WHICH MAY BE SPECIFICALLY ADDRESSED IN THESE DRAWINGS. VERIFY ALL CIRCUIT REQUIREMENTS SUCH AS REQUIRING A NEMA TYPE RECEPTACLE OR REQUIRING A HARD WIRE CONNECTION FEEDER SIZE, DISCONNECT SIZE AND ASSOCIATED BREAKERS SIZE AND SO FORTH AND COORDINATE ALL CONNECTIONS WITH EQUIPMENT PROVIDED. THIS CONDITION MUST BE MET PRIOR TO BID (ALSO INCORPORATE INTO) AND CONSTRUCTIONS, NO EXCEPTIONS.

IMPORTANT BID NOTICE:

CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT VENDOR FOR EXACT EQUIPMENT BEING UNDER THIS CONTRACT. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL DISCONNECTS, FUSES, REDUSERS, CONTROL CIRCUITS AND CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE EQUIPMENT. ALL ELECTRICAL CONNECTIONS SHALL BE PER THE NAME PLATE LABEL.

ALL EXPOSED CONDUITS TO BE PAINTED TO MATCH CEILING COLOR AND INSTALLED AS TIGHT AS POSSIBLE TO WOOD FRAMING ABOVE. REFER TO ARCHITECTURAL SHEETS FOR ADDITIONAL INFORMATION.

REFER SHEET E0.2 AND A104 FOR EQUIPMENT EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.

DO NOT SCALE FROM THESE DRAWINGS. ALL ELECTRICAL DEVICES SHOWN ARE FOR REFERENCE ONLY. OBTAIN EXACT MOUNTING HEIGHTS AND DIMENSIONAL DATA FROM ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.

CONTRACTOR TO PROVIDE PHYSICAL LABELS INDICATING PANEL AND CIRCUIT NUMBERS ON ALL EQUIPMENT AND RECEPTACLES CORRESPONDING TO THE PANEL SCHEDULE. IN ADDITION, THE KITCHEN EQUIPMENT SCHEDULE SHOULD BE PLACED INSIDE EACH PANEL.

ALL DATA AND TELEPHONE OUTLETS EXACT LOCATION TO BE COORDINATED WITH TENANT REPRESENTATIVE PRIOR TO ROUGH-IN.

CONTRACTOR TO PROVIDE POWER CONNECTION FOR DIGITAL MENU BOARD. COORDINATE WITH TENANT VENDOR THE ELECTRICAL POWER REQUIREMENTS. ALL WORK AND MATERIALS MUST BE INCLUDED IN THE BIDDING PROCESS.

PLUMBING GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH ALL NATIONAL, STATE, & LOCAL CODES AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL PLUMBING WORK IS PROVIDED AND INSTALLED IN STRICT ACCORDANCE WITH SEISMIC REQUIREMENTS.
2. THE CONTRACTOR SHALL PREPARE AND FILE ALL REQUIRED PLANS AND PERMITS WITH THE LOCAL BUILDING DEPARTMENT AND SHALL PAY ALL FILING FEES AS REQUIRED. THE CONTRACTOR SHALL OBTAIN ALL AUTHORITIES AND SHALL PAY ALL WORK PERMITS, INSPECTIONS, AND WRITE-OFFS AS REQUIRED TO EXECUTE THIS WORK IN A MANNER IN CONFORMANCE WITH THE CODES AND AUTHORITIES HAVING JURISDICTION.
3. CONTRACTOR SHALL COMPLY WITH ALL LANDLORD AND CLIENT DESIGN CRITERIA REQUIREMENTS.
4. GENERAL CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH LANDLORD'S ON-SITE OPERATIONS MANAGER.
5. DO NOT SCALE FROM THESE DRAWINGS.
6. ALL REMOVALS PERFORMED UNDER THIS CONTRACT SHALL INCLUDE REMOVAL OF ALL DEBRIS AND DISPOSAL AT AN APPROPRIATE SITE. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR DEMOLITION WORK. ANY UNUSED EXISTING PLUMBING FIXTURES AND ASSOCIATED PIPING, VALVES, ETC. SHALL BE REMOVED IN THEIR ENTIRETY AND SHALL NOT BE ABANDONED IN PLACE UNLESS OTHERWISE NOTED BY THE CONSTRUCTION DOCUMENTS.
7. PLUMBING CONTRACTOR SHALL CONSULT WITH, COOPERATE AND COORDINATE WITH THE GENERAL CONTRACTOR, HVAC CONTRACTOR, SPRINKLER CONTRACTOR, ELECTRICAL CONTRACTOR, ETC. IN ORDER TO MINIMIZE INTERFERENCES BETWEEN TRADES DURING PERFORMANCE OF THIS WORK.
8. CONTRACTOR SHALL VERIFY LOCATION, INVERT, DIRECTION OF FLOW, AND CONDITION OF EXISTING SANITARY PIPING PRIOR TO COMMENCEMENT OF WORK.
9. THE PLUMBING CONTRACTOR SHALL PERFORM ALL TESTS AND ARRANGE FOR ALL INSPECTIONS FOR WORK UNDER THEIR CONTRACT AS REQUIRED BY LAW AND SHALL SUPPLY ALL CERTIFICATES OF INSURANCE AS REQUIRED BY THE LAW AND THE OWNER.
10. THE PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO ALL PLUMBING EQUIPMENT REGARDLESS WHETHER IT IS ILLUSTRATED HEREIN OR NOT WITHOUT ANY ADDITIONAL COSTS TO THE OWNER.
11. PLUMBING CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS, INCLUDING THE SIZE OF CONNECTIONS, ROUGH-IN DIMENSIONS, ETC. BEFORE SUBMITTING A QUOTE FOR THE WORK.
12. PLUMBING CONTRACTOR SHALL PERFORM ALL CUTTING, EXCAVATION, BACKFILLING, ROUGH AND FINISH PATCHING AS PER THE SPECIFICATIONS AS REQUIRED FOR THE INSTALLATION OF THE WORK, UNLESS NOTED OTHERWISE.
13. ALL CONNECTIONS TO NEW AND / OR EXISTING EQUIPMENT SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
14. ALL PIPE HANGERS AND SUPPORTS SHALL BE INSTALLED AT REQUIRED INTERVALS AND BE FABRICATED OF MATERIALS AS REQUIRED BY THE CODE.
15. ALL NEW EXPOSED WATER AND WASTE PIPING SERVING THE FIXTURES SHALL BE CHROME PLATED AND SHALL HAVE CHROME PLATED ESCUTCHEONS RIGIDLY ATTACHED TO THE PIPING AT THE POINT OF ANY WALL OR FLOOR PENETRATIONS.
16. WATERPROOF PIPE SLEEVES SHALL BE INSTALLED AT ALL PENETRATIONS THROUGH EXTERIOR WALLS.
17. FIRE SEALED PIPE SLEEVES SHALL BE INSTALLED AT ALL WALL PENETRATIONS THROUGH INTERIOR WALLS AND FLOORS.
18. WATER HAMMER ARRESTERS SHALL BE INSTALLED AT ALL RUN OUTS IN HOT AND / OR COLD WATER LINES SERVING TOILET ROOMS AND OTHER AREAS WHICH INCORPORATE QUICK CLOSING VALVES SUCH AS FLUSHOMETERS, SOLENOID VALVES, ETC.
19. ALL PIPING SHALL BE TESTED AT A MINIMUM PRESSURE OF 1-1/2 TIMES THE MAXIMUM OPERATING PRESSURE UNLESS OTHERWISE NOTED ON THE DOCUMENTS OR THE PLUMBING CODE AND IN ACCORDANCE WITH THE UTILITY REQUIREMENTS FOR APPLICABLE PIPING SYSTEMS.
20. ALL LAVATORIES DESIGNED FOR USE BY PERSONS CONFINED TO WHEELCHAIRS SHALL HAVE THE HOT AND COLD WATER SERVICES, AS WELL AS THE TRAP, RECESSED AND INSULATED IN ACCORDANCE WITH THE ADA REQUIREMENTS.
21. ALL WATER PIPING IS TO BE INSULATED WITH 1" FIBERGLASS INSULATION. JACKETED GLASS FIBER PREFORMED INSULATION W/ JACKET SEALED & TAPED
22. ALL PLUMBING FIXTURES TO BE INSTALLED AS PER MANUFACTURER RECOMMENDATIONS.
23. FLOOR DRAIN STRAINERS SHALL BE SET LEVEL WITH FINISHED FLOORS.
24. ALL FLOOR DRAINS TO BE PROVIDED WITH TRAP PRIMER.
25. ALL PIPE DIMENSIONS ARE INSIDE CLEAR.
26. ALL WATER PIPING SERVING PLUMBING FIXTURES & EQUIPMENT TO HAVE ISOLATION VALVES.
27. PROVIDE BACKFLOW PREVENTION ON ALL KITCHEN EQUIPMENT APPLIANCES THAT ARE CONNECTED TO WATER PIPING.
28. CONTRACTOR SHALL COORDINATE ALL ROOFING WORK WITH LANDLORD'S APPROVED ROOFING CONTRACTOR. CONTRACTOR TO INSPECT ALL EXISTING ROOF PENETRATIONS TO REMAIN. IF REQUIRED G.C. SHALL HIRE ROOFING CONTRACTOR TO PATCH & REPAIR ROOF INCLUDING NEW FLASHINGS, BOOTS, PORTALS, (ETC.) AS DEEMED NECESSARY UPON INSPECTION.
29. ALL PIPING SHALL BE CLEARLY AND DISTINCTLY IDENTIFIED WITH STENCIL MARKERS.

SPECIFIC GENERAL NOTES

1. REFER TO EQUIPMENT AND KITCHEN PLANS FOR ADDITIONAL INFORMATION ON ALL EQUIPMENT.
2. ALL EXPOSED PIPING IN PUBLIC AREAS SHALL BE PAINTED TO MATCH COLOR OF ADJACENT SURFACE.
3. THE INSTALLATION OF THE PLUMBING SYSTEMS SHALL BE COORDINATED WITH ALL ELECTRICAL AND MECHANICAL EQUIPMENT, AND BUILDING STRUCTURAL.
4. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF ALL DRAIN LINES FROM KITCHEN EQUIPMENT. ALL INDIRECT DRAIN LINES SHALL BE INSTALLED WITH APPROVED AIR GAPS.
5. REFER TO ARCHITECTURAL AND MILLWORK DRAWINGS FOR DETAILS OF COUNTERTOPS, CASEWORK, AND OTHER FIXTURES, SHOWING EXACT LOCATION OF OPENINGS FOR PLUMBING ITEMS BEING INSTALLED. COORDINATE THE COMPLETE INSTALLATION WITH THE GENERAL CONTRACTOR.
6. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE INSTALLATION OF THE WALK-IN BOX REFRIGERATION PIPING.
7. ALL WALL PIPING STUB-OUTS SHALL BE SECURELY TIED TO THE STRUCTURE WITH SUFFICIENT BACKING TO ELIMINATE MOVEMENT. FINAL CONNECTIONS TO KITCHEN/SERVICE AREA SINKS SHALL BE HARD PIPED.
8. PITCH ALL WASTE & DRAIN LINES A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF FLOW AS REQUIRED PER CODE.
9. PLUMBING CONTRACTOR TO ARRANGE AND PAY FOR ALL REQUIRED FEES, PERMITS AND MISCELLANEOUS COSTS ASSOCIATED WITH THE PLUMBING WORK PER LOCAL PLUMBING CODES.
10. CONTRACTOR SHALL PROVIDE CHROME PLATED DRAINS AT ALL HAND SINKS.
11. WELDING OR DRILLING OF STRUCTURAL MEMBERS IS NOT ALLOWED.
12. PLUMBING ROUGH-IN WORK AND FINAL CONNECTIONS TO ALL FOOD SERVICE EQUIPMENT AND FIXTURES SHALL BE BY THE PLUMBING CONTRACTOR.
13. PROVIDE FULL PORT BALL VALVES FOR ALL PIECES OF EQUIPMENT.
14. ALL AIR GAPS SHALL BE A MINIMUM OF 1".
15. PROVIDE AIR CHAMBERS, FULL SIZE, 12" LONG FOR EACH HOT & COLD SUPPLY AT EACH FIXTURE AND 24" AT THE TOP OF SUPPLY RISERS.
16. ALL HOT WATER AND COLD WATER PIPING SHALL BE INSULATED WITH 1" FIBERGLASS; WITH NON-COMBUSTIBLE UL RATED VAPOR BARRIER JACKET FOR BELOW GROUND. PIPING AND GLASS CLOTH JACKET ABOVE GROUND.
17. ALL CONTRACTORS TO PROVIDE AS BUILT REDLINED DRAWINGS TO OWNER AT THE COMPLETION OF EACH PROJECT.
18. PLUMBING CONTRACTOR SHALL MAKE ALLOWANCES FOR FINISHES. SEE ARCHITECTURAL DRAWINGS.
19. ALL CONNECTIONS AND PIPE ARE 1/2" UNLESS OTHERWISE NOTED AND SHALL BE INSTALLED AT ROUGH-IN HEIGHTS COORDINATED WITH EQUIPMENT BEING SERVED.
20. PROVIDE AIR HAMMER ARRESTORS AT GROUPS OF FIXTURES & FOR APPLIANCES WITH SOLENOID VALVES.

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	MANUFACTURER	MODEL	DESCRIPTION	SAN	VENT	HW	CW	REMARKS
WC	WATER CLOSET	AMERICAN STANDARD	"CADET FLOWISE" #2467.100.020	LOW CONSUMPTION (1.1 GPF), HANDICAP TANK TYPE, ELONGATED, WITH MATCHING OLSONITE NO. 95CT OPEN FRONT SEAT (RIM OF TOILET AT 17" AFF. MAX.), TOILET FLUSH CONTROL SHALL BE OPERABLE WITH ONE HAND WITHOUT TIGHT GRASPING OR TWISTING OF THE WRIST AND A MAX. FORCE OF 5 LBS. TOILET FLUSH CONTROL SHALL BE MOUNTED ON THE OPEN SIDE OF THE TANK (OPPOSITE SIDE WALL) AT A MAX HEIGHT OF 44" UNLESS OTHERWISE NOTED. (ADA COMPLIANT). PROVIDE STOP AND FLEX WATER SUPPLY.	4"	2"	-	3/4"	FIXTURE RIM TO FINISHED FLOOR MOUNTING HEIGHT SHALL BE 17" LOCATE FLUSH LEVER ON WIDE SIDE OF STALL
LAV	LAVATORY	AMERICAN STANDARD	"LUCERNE" #0356.015.020	BARRIER FREE LAVATORY, VITREOUS CHINA, WALL HUNG, PROVIDE AMERICAN STANDARD FAUCET MODEL #1340.827.002 METERING WIDESPREAD FAUCET PROVIDE LAVATORY COMPLETE WITH GRID DRAIN. PREWRAPPED INSULATED, CAST BRASS, OFFSET TAILPIECE, AND P-TRAP WITH CLEANOUT (EQUAL TO MCGUIRE #PW2150WC) AND CHROME PLATED SUPPLIES (EQUAL TO MCGUIRE #175)	2"	1 1/2"	1/2"	1/2"	-
MS	MOP SINK	MUSTEE	#65M	SINK SHALL BE EQUAL TO MUSTEE MODEL #65M, 24"X36"X10", DURASTONE. PROVIDE FAUCET EQUAL TO DELTA MODEL #2819, INTEGRAL STOPS, VACUUM BREAKER, PAIL HOOK, THREADED SPOUT, AND LEVER HANDLES. PROVIDE SINK COMPLETE WITH MOP HANGER, HOSE WITH BRACKET, AND P-TRAP.	3"	2"	3/4"	3/4"	PROVIDE CHECK VALVE STOPS ON HW & CW SUPPLIES WITH ACCESS DOOR ABOVE FAUCET
TP	TRAP PRIMER	ZURN	#Z1021	WATER SAVER, P-TRAP PRIMER	SEE DWGS.	-	-	-	
FD	FLOOR DRAIN	ZURN	#ZN-415	TYPE "P" 5" DIAMETER STRAINER, DEEP SEAL P-TRAP	SEE DWGS.	-	-	-	PROVIDE TRAP PRIMER CONNECTION AS REQUIRED
FS	FLOOR SINK	SIOUX CHEF	#861	PROVIDE FLOOR SINK WITH P-TRAP	SEE DWGS.	-	-	-	
FCO	FLOOR CLEANOUT	ZURN	#ZS-1400	-	SEE DWGS.	-	-	-	GAS/WATER TIGHT ABS PLUG

GREASE INTERCEPTORS SIZING

FIXTURE	QUANTITY	DIMENSIONS			VOLUME		PERCENTAGE USAGE(%)	ACTUAL USAGE (GALLONS)	FLOW RATE(GPM)	
		LENGTH(IN)	WIDTH(IN)	DEPTH(IN)	CUBIC INCHES	GALLONS			1 MIN.	2 MIN.
3 COMP SINK - S-1	1	10	20	14	8400	36.36	0.75	27.27	27.27	13.63
								TOTAL:	27.27	13.63

PROPOSED GREASE INTERCEPTOR, SCHIER, ZURN GT2700-50
AS PER GEORGIA PLUMBING CODE

NEW GREASE INTERCEPTOR SCHEDULE

TAG	DESCRIPTION	INLET/ OUTLET SIZE (INCHES	FLOW RATE (GPM)	DESCRIPTION				SELECTION BASED ON		REMARKS/OPTION
				WATER (GAL)	GREASE (LBS)	SOLID (GAL)	OIL (GAL)	MANUFACTURER	MODEL NUMBER	
GI-1	GREASE INTERCEPTOR	4	50	-	100	-	-	ZURN	GT2700-50	NOTES 1 AND 2 SIZE - 30.5" L X 24.5" W X 21.5" H

OPTIONS (ALL UNITS)
- DISCHARGE BACKWATER VALVE IN SEPARATE VALVE BOX

ADDITIONAL OPTIONS (UNITS AS NOTED)
A. LOW PROFILE TO BE INSTALLED RECESSED IN FLOOR.
B. PROVIDE H-20 TRAFFIC RATED RELIEVING SLAB PER MANUFACTURERS REQUIREMENTS
C. PROVIDE FLOW CONTROL @ SCHEDULED FLOW RATE
D. PROVIDE WITH RISER EXTENSION.

NOTES:
1. INSTALL INTERCEPTOR PER MANUFACTURERS REQUIREMENTS. COORDINATE ALL CONNECTION POINTS IN THE FIELD
2. COORDINATE UNIT SIZE WITH SIZE OF 3-COMP SINK AND LEGS PRIOR TO ORDER.

NEW ELECRIC WATER HEATER SCHEDULE

TAG	LOCATION	PLUMBING DATA				ELECTRICAL	MANUFACTURER/ MODEL #
		KW	RISE (DEG F)	STORAGE (GAL)	RECOVERY GPH @ 80 RISE	V/Ø/Hz	
EWH-1	SEE PLANS	10	40-140	50	51	208/1/60	A.O. SMITH/ DEL-50

1. PROVIDE DRAIN PIPE FROM DRAIN PAN TO FLOOR DRAIN WITH AIR GAP AS REQUIRED PER CODE.
2. PROVIDE REQUIRED CLEARANCE AROUND TANK(S) AND CONTROLS PER MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE
3. PROVIDE EXPANSION TANK. PROVIDE AMTROL ST-5 OR EQUAL.

NEW EXPANSION TANK SCHEDULE

TAG	DESCRIPTION	VOLUME (GALLONS)	DIAMETER (INCHES)	HEIGHT (INCHES)	SELECTION BASED ON		REMARKS
					MANUFACTURER	MODEL NUMBER	
ET-1	BLADDER TYPE	2.0	8"	12 1/2"	AMTROL	ST-5	NOTE 1

NOTES:
1. INSTALL EXPANSION TANK ON IN-COMING COLD WATER PER MANUFACTURERS REQUIREMENTS.

PUMP SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL NO.	VOLT	PH	TRIM AND REMARKS
RCP-1	RECIRCULATION PUMP	GRUNDFOS	UP 15-18 BS	115 V	1	2GPM @ 10 FT. HEAD. INSTALL NEAR WATER HEATER PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE AQUASTAT WITH TIMER KIT

FOOD SERVICE PLUMBING SCHEDULE

TAG	FIXTURE	WASTE		VENT	CW	HW		CW STUB HEIGHT	HW STUB HEIGHT	NOTES/OPTIONS
		DIRECT	INDIRECT			110°	140°			
5	DROP-IN ICE BIN	-	FS	-	-	-	-	48"	-	DRAIN AS PER SPECSHEET
13	WATER FILTRATION SYSTEM	-	-	-	-	-	-	84"	-	PROVIDE SHUT-OFFS ON INCOMING WATER LINES
14	HAND SINK (WALL MOUNTED)	2"	-	1-1/2	1/2"	1/2"	-	-	-	2 UNITS
17	NUGGET ICE MACHINE	-	FS	-	1/2"	-	-	48"	-	PROVIDE ASSE 1022 BACKFLOW DRAIN PIPE AS PER SPEC
19.6	DUMP SINK	-	FS	-	1/2"	-	1/2"	-	-	2" DRAIN
26	3-COMPARTMENT SINK	2"	FS	1-1/2	3/4"	-	3/4"	-	-	2" DRAIN
27	1-COMPARTMENT SINK	2"	FS	1-1/2	1/2"	-	1/2"	-	-	-
28	MOP SINK	3"	-	2	3/4"	-	3/4"	-	-	-

PLUMBING EQUIPMENT NOTES:
1. IT SHALL BE THE PLUMBING CONTRACTORS RESPONSIBILITY TO MAKE ALL FINAL CONNECTIONS FROM KITCHEN/BAR EQUIPMENT TO THE PLUMBING MAINS SHOWN ON THIS PLAN.
2. THE PLUMBING CONNECTION SCHEDULE ON THIS PLAN RELATES REQUIRED CONNECTIONS TO INDIVIDUAL EQUIPMENT ONLY.
3. PLUMBING CONTRACTOR SHALL REFER TO "KITCHEN EQUIPMENT COMPANY" CUT SHEETS FOR ALL ROUTING OF FINAL CONNECTIONS TO EQUIPMENT AND EXACT ROUGH-IN LOCATIONS.
4. PLUMBING CONTRACTOR SHALL MOUNT ALL FLOOR SINKS FLUSH WITH FINISHED FLOOR ELEVATION AND A MINIMUM OF 16" OFF THE FINISH FACE OF THE WALL.

GENERAL ABBREVIATIONS

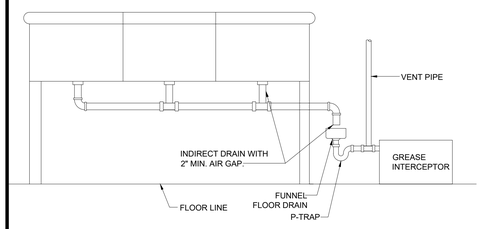
IDENTIFIER	DESCRIPTION	IDENTIFIER	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	HWR	HOT WATER RETURN
AFG	ABOVE FINISHED GRADE	MAX	MAXIMUM
BFG	BELOW FINISHED GRADE	MFR	MANUFACTURER
BLDG	BUILDING	MH	MOUNTING HEIGHT
CD	CONDENSATE DRAIN	MIN	MINIMUM
CLG	CEILING	MTD	MOUNTED
CO	COMPANY	NIC	NOT IN CONTRACT
CW	COLD WATER	NTS	NOT TO SCALE
DN	DOWN	OC	ON CENTER
DWG(S)	DRAWING(S)	PC	PLUMBING CONTRACTOR
EM	EMERGENCY	PSI	POUNDS PER SQUARE INCH
EQUIP	EQUIPMENT	S	SANITARY
F.C.O.	FLOOR CLEAN OUT	SQ. FT.	SQUARE FEET
FD	FLOOR DRAIN	TYP	TYPICAL
FCW	FILTERED COLD WATER	TW	TEMPERED WATER
GC	GENERAL CONTRACTOR	ID	INDIRECT WASTE
GS	GREASE SANITARY	V	VENT
HW	HOT WATER	V.I.F.	VERIFY IN FIELD
EWH	ELECTRIC WATER HEATER	W.C.O.	WALL CLEAN OUT

SYMBOLS

	DOMESTIC COLD WATER PIPING (CW)		FLOOR CLEANOUT (PLAN / RISER VIEW) (FCO)
	SOFTENED COLD WATER (SCW)		WALL CLEANOUT (PLAN / RISER VIEW) (WCO)
	FILTERED COLD WATER (FCW)	OR	FLOOR DRAIN (PLAN / RISER VIEW) (FD)
	DOMESTIC HOT WATER PIPING (HW)		BALL / GATE VALVE
	DOMESTIC HOT WATER RETURN PIPING (HWR)		CHECK VALVE
S	SANITARY PIPING (S)		THERMOSTATIC MIXING VALVE (SET TO 110°F)
GS	GREASE PIPING (GS)		TEMPERATURE & PRESSURE RELIEF VALVE
	VENT PIPING (V)		TRAP PRIMER
	CAPPED PIPING		WATER HAMMER ARRESTOR
	TOP CONNECTION, 45° OR 90°		BALANCING VALVE
	BOTTOM CONNECTION	M	WATER METER
	PIPE UP		RPZ
	PIPE DOWN		STRAINER
			HOT WATER CIRCULATING PUMP (HWCP)

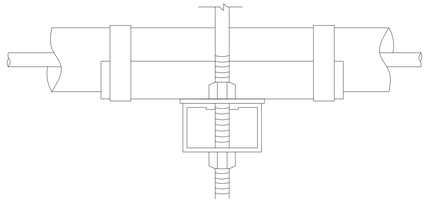
NOTE:
SYMBOL LIST SHOWN IS FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS USED.

SYSTEM OR EQUIPMENT		MATERIALS
UNDERGROUND WATER PIPING		COPPER WATER TUBE TYPE "K" (V.I.F. W/ LOCAL JURISDICTION)
DOMESTIC COLD WATER, HOT WATER PIPING		COPPER WATER TUBE TYPE "L" WITH SILVER SOLDER FITTINGS (ASTM B88).
UNDERGROUND SOIL, WASTE AND VENT PIPING		SERVICE WEIGHT CAST IRON PIPE WITH NEOPRENE COMPRESSION GASKETS (ASTM A74). CONTRACTOR MAY USE SCHEDULE 40 PVC.
SOIL, WASTE AND VENT PIPING IN BUILDING		SERVICE WEIGHT CAST IRON PIPE WITH NO-HUB TYPE WITH STAINLESS STEEL COUPLINGS. CONTRACTOR MAY USE SCHEDULE 40 PVC (NON-COMBUSTIBLE) (CISPI 301, ASTM A888).
VENT PIPING		CAST IRON PIPE AND FITTINGS, SERVICE WEIGHT, NO-HUB 3" AND ABOVE GALVANIZED STEEL 2" AND BELOW (CISPI 301, ASTM A888).
JOINTS:	a) CAST IRON PIPE AND FITTINGS	MECHANICAL JOINTS FOR BELL AND SPIGOT. NO WICKING IS ALLOWED.
	b) BLACK STEEL PIPE	THREADS CUT WITH MACHINE, PIPE REAMED, MADE UP WITH APPROVED PIPE JOINT COMPOUND. NO WICKING IS ALLOWED. ALL PIPING 4" AND GREATER SHALL BE WELDED JOINTS ONLY.
	c) COPPER WATER TUBE AND COPPER DRAINAGE	SURFACE FED SOLDER JOINT, SOLDERING ALLOY 95% TIN AND 5% ANTIMONY.
CONDENSATE PIPING		SCHEDULE 40 CPVC.



3-COMP SINK CONNECCTION DETAIL

SCALE: NTS — 1

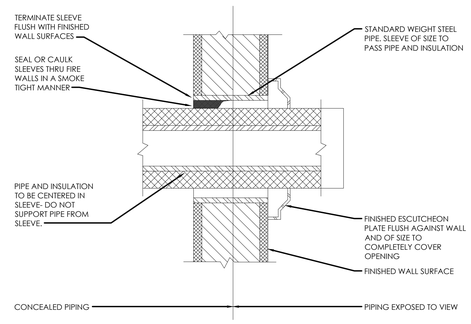


MAXIMUM HORIZONTAL PIPE/TUBING SUPPORT SPACING, FEET												
NOM. SIZE	THRU 3/4"	1	1-1/4"	1-1/2"	2	2-1/2"	3	4	5	6	8	
STEEL PIPE	12 FEET	12	12	12	12	12	12	12	12	12	12	
COPPER TUBING	6 FEET	6	6	10	10	10	10	10	10	10	10	
PVC	3 FEET	3	4	4	4	4	4	4	4	4	4	
NOTE: FOR TRAPEZE HANGER TAKE SMALLEST SIZE ON TRAPEZE												

MAXIMUM VERTICAL PIPE/TUBING SUPPORT SPACING, FEET												
NOM. SIZE	THRU 3/4"	1	1-1/4"	1-1/2"	2	2-1/2"	3	4	5	6	8	
STEEL PIPE	15 FEET	15	15	15	15	15	15	15	15	15	15	
COPPER TUBING	10 FEET	10	10	10	10	10	10	10	10	10	10	
PVC	10 FEET	10	10	10	10	10	10	10	10	10	10	
NOTE: FOR TRAPEZE HANGER TAKE SMALLEST SIZE ON TRAPEZE												

PIPE HANGER DETAIL

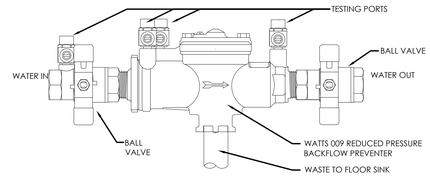
SCALE: NTS — 2



* ACOUSTICAL NOTE
G.C. TO MAKE MODIFICATIONS TO EXISTING PENETRATIONS THAT HAVE A GAP BETWEEN THE PIPE AND THE DRYWALL. THE GAP SHOULD BE $\frac{1}{4}$" TO $\frac{3}{4}$" MAX.

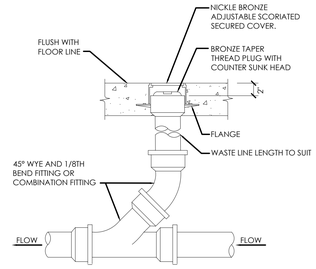
WALL SLEEVE AT INTERIOR WALL DETAIL

SCALE: NTS — 3



BACKFLOW PREVENTER DETAIL

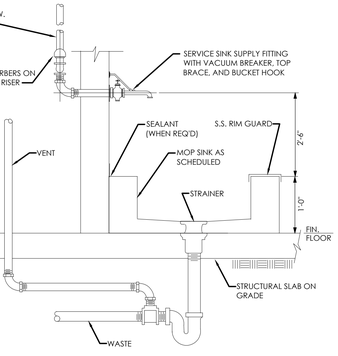
SCALE: NTS — 4



NOTE:
CLEAN-OUT TO BE J.R. SMITH MODEL 4100-F SERIES OR EQUAL INSTALLATION SHALL BE FLUSH WITH SURROUNDING FLOOR SURFACES.

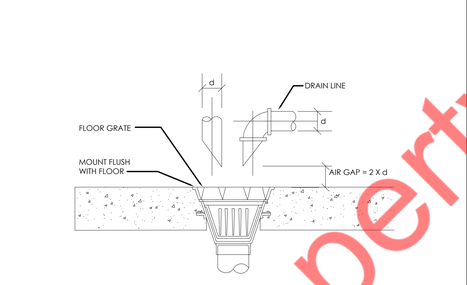
FLOOR CLEANOUT

SCALE: NTS — 5



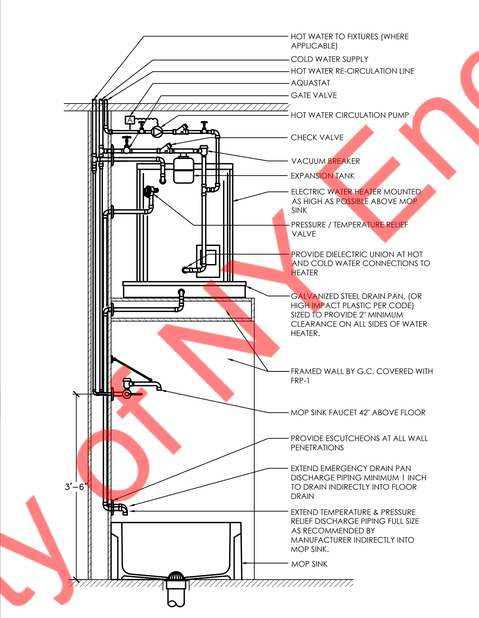
WHEELCHAIR LAVATORY

SCALE: NTS — 6



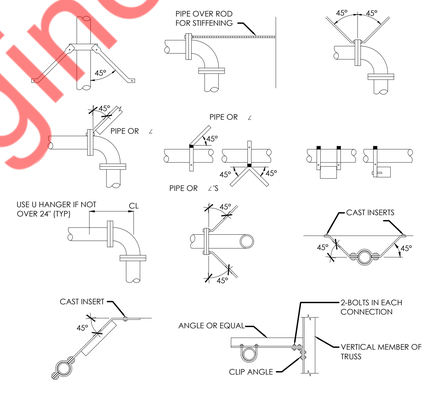
TYPICAL HAND SINK DETAIL

SCALE: NTS — 7



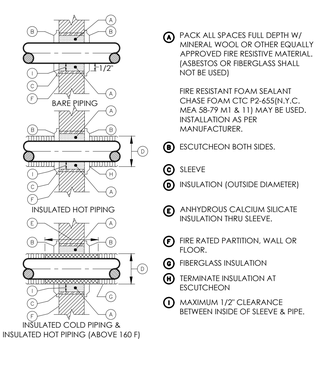
ELECTERIC WATER HEATER

SCALE: NTS — 8



PIPING SWAY BRACING DETAILS

SCALE: NTS — 9



- (A) PACK ALL SPACES FULL DEPTH W/ MINERAL WOOL OR OTHER EQUALLY APPROVED FIRE RESISTIVE MATERIAL. (ASBESTOS OR FIBERGLASS SHALL NOT BE USED)

  FIRE RESISTANT FOAM SEALANT CHASE FOAM CTC P2-655(N.Y.C. MEA 58-79 M1 & 11) MAY BE USED. INSTALLATION AS PER MANUFACTURER.
- (B) ESCUTCHEON BOTH SIDES.
- (C) SLEEVE
- (D) INSULATION (OUTSIDE DIAMETER)
- (E) ANHYDROUS CALCIUM SILICATE INSULATION THRU SLEEVE.
- (F) FIRE RATED PARTITION, WALL OR FLOOR.
- (G) FIBERGLASS INSULATION
- (H) TERMINATE INSULATION AT ESCUTCHEON
- (I) MAXIMUM 1/2" CLEARANCE BETWEEN INSIDE OF SLEEVE & PIPE.

PIPE PENETRATION

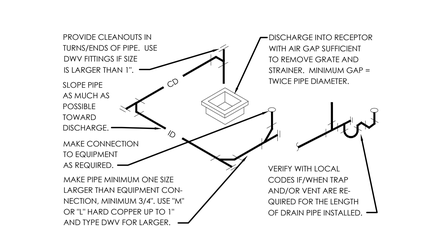
SCALE: NTS — 10

FLOOR MOUNTED MOP SINK DETAIL

SCALE: NTS — 11

FLOOR SINK DETAIL

SCALE: NTS — 12



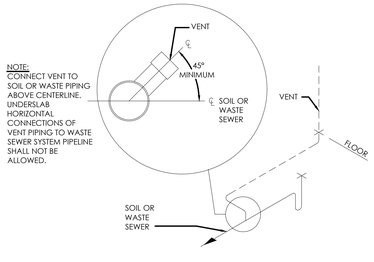
ROUTE PIPE INCONSPICUOUSLY AND UNOBTRUSIVELY. HANG PIPE AS REQUIRED. DO NOT INSULATE INDIRECT DRAIN PIPE WHEN INSTALLED EXPOSED IN FOOD SERVICE FACILITY. REFER TO LOCAL CODES FOR FURTHER INFORMATION.

INDIRECT CONDENSATE DRAIN DETAIL

SCALE: NTS — 13

NOT IN USE

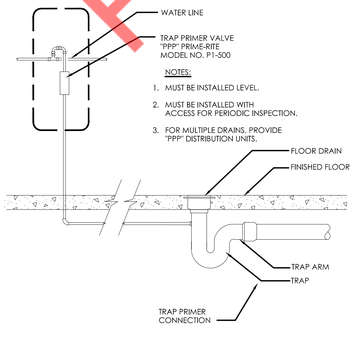
SCALE: NTS — 1



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

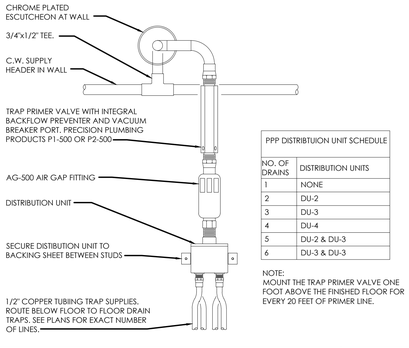
VENT PIPING INSTALLATION

SCALE: NTS — 15



TRAP PRIMER DETAIL

SCALE: NTS — 16

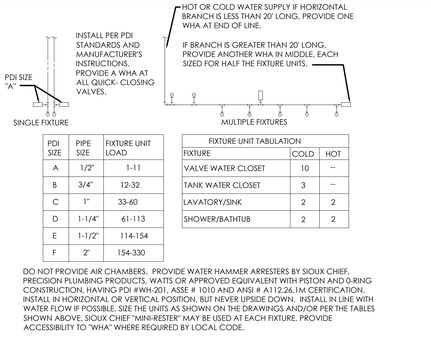


PPP DISTRIBTUION UNIT SCHEDULE	
NO. OF DRAINS	DISTRIBUTION UNITS
1	NONE
2	DU-2
3	DU-3
4	DU-4
5	DU-2 & DU-3
6	DU-3 & DU-3

NOTE:
MOUNT THE TRAP PRIMER VALVE ONE FOOT ABOVE THE FINISHED FLOOR FOR EVERY 20 FEET OF PRIMER LINE.

ELECTERIC WATER HEATER

SCALE: NTS — 8



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

FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	3	--
LAVATORY/SINK	2	2
SHOWER/BATHTUB	2	2

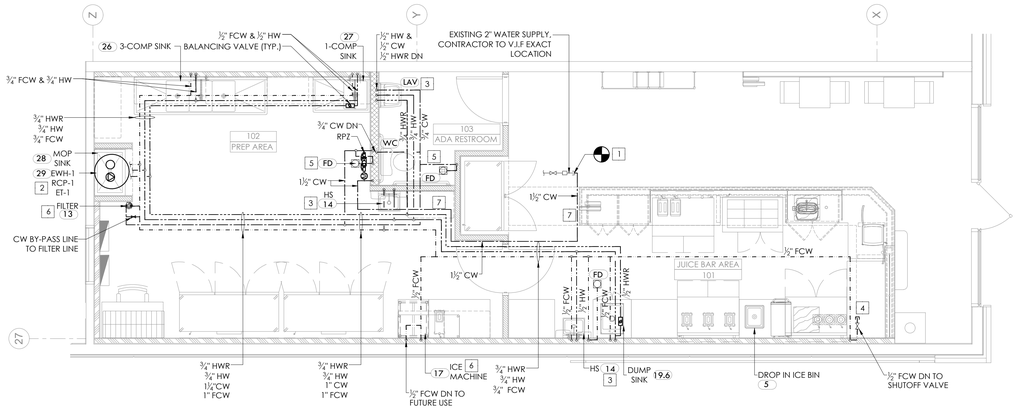
DO NOT PROVIDE AIR CHAMBERS. PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE # 1010 AND ANSI # A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE. SIOUX CHIEF "MINI-RESTER" MAY BE USED AT EACH FIXTURE. PROVIDE ACCESSIBILITY TO "WHA" WHERE REQUIRED BY LOCAL CODE.

WATER HAMMER ARRESTORS DETAIL

SCALE: NTS — 17

NOT IN USE

SCALE: NTS — 18



1	CONNECT NEW 1 1/2" COLD LINE TO EXISTING LINE OF ADEQUATE CAPACITY LOCATED IN SPACE. VERIFY EXACT LOCATION, SIZE, AND CONNECTION POINT OF EXISTING COLD WATER MAIN LINE PRIOR TO BID. PROVIDE NEW WATER SUB-METER AND BACKFLOW PREVENTER. NOTIFY ARCHITECT/ENGINEER WITH ANY DISCREPANCIES PRIOR TO BID.
2	SELF-MOUNTED ELECTRIC WATER HEATER (EWH-1) IN AN ACCESSIBLE AREA AND MAINTAIN APPROPRIATE WORKING CLEARANCES AS RECOMMENDED BY THE MANUFACTURER. CONTRACTOR TO FILED VERIFY AND PROVIDE WITH EXPANSION TANK, DRAIN PAN, SHUT-OFF VALVES, PIPING MANIFOLD, AND ALL MANUFACTURER-REQUIRED ACCESSORIES. ROUTE CONDENSATE TO FD WITH CODE APPROVED AIR GAP. CONTRACTOR TO ENSURE INSTALLATION FEASIBILITY IN THE FIELD AS PER MANUFACTURER RECOMMENDATIONS AND NOTIFY THE ARCHITECT/ENGINEER WITH ANY DISCREPANCIES PRIOR TO BID.
3	PROVIDE THERMOSTATIC MIXING VALVE SET TO 110ºF AT EACH HAND SINK AND LAVATORY.
4	PROVIDE 1/2" FCW LINE, TURN DOWN IN FURR WALL TO 18" AFF. PROVIDE 4" STUB-OUT AND SHUT-OFF WITH ACCESS PANEL AND CAPPED END UNDER JUICE BAR FOR FUTURE USE.
5	PROVIDE TRAP PRIMER RECESSED IN WALL WITH ACCESS PANEL. ROUTE 1/2" CW TO FLOOR DRAIN PER MANUFACTURER SPECIFICATIONS.
6	CONTRACTOR SHALL PROVIDE SECONDARY BACKFLOW PREVENTER FOR ICE MACHINE AND WATER FILTRATION SYSTEMS AS PER LOCAL CODE.
7	NO TAP-OFF SHALL BE TAKEN BEFORE RPZ.

REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL MAKE AND MODEL OF PLUMBING FIXTURES.

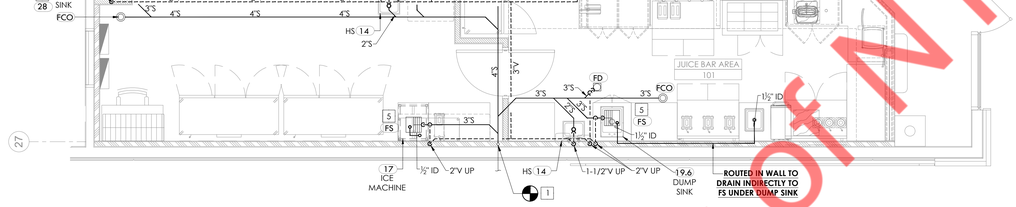
BID PRICE NOTE:
CONTRACTOR SHALL INCLUDE IN BID PRICE COST TO UPGRADE PLUMBING LINES AND UTILITIES AS INDICATED ON PLUMBING PLANS TO VERIFY IN FIELD ALL UTILITIES PRIOR TO BID AND PROVIDE SHOP DWGS FOR PLUMBING DESIGN MODIFICATIONS BASED ON FIELD CONDITIONS AND POINT OF CONNECTIONS.

DOMESTIC WATER PLAN

SCALE 1/4" = 1'-0" — 1

DOMESTIC WATER KEY NOTES

SCALE - — 2



REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL MAKE AND MODEL OF PLUMBING FIXTURES.

BID PRICE NOTE:
CONTRACTOR SHALL INCLUDE IN BID PRICE COST TO UPGRADE PLUMBING LINES AND UTILITIES AS INDICATED ON PLUMBING PLANS TO VERIFY IN FIELD ALL UTILITIES PRIOR TO BID AND PROVIDE SHOP DWGS FOR PLUMBING DESIGN MODIFICATIONS BASED ON FIELD CONDITIONS AND POINT OF CONNECTIONS.

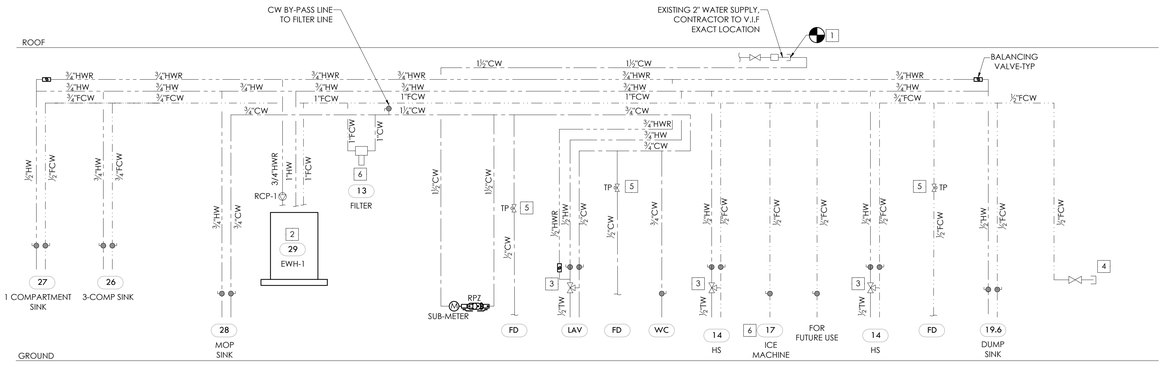
SANITARY AND VENT PLAN

SCALE 1/4" = 1'-0" — 3

SANITARY AND VENT KEY NOTES

SCALE - — 4

1	CONTRACTOR SHALL CONNECT NEW 4" SANITARY LINE TO EXISTING SANITARY LINE IN SPACE. VERIFY EXACT LOCATION, SIZE, INVERT, DIRECTION OF FLOW AND CONNECTION POINT OF SANITARY MAIN PRIOR TO BID. NOTIFY ARCHITECT/ENGINEER WITH ANY DISCREPANCIES PRIOR TO BID.
2	CONTRACTOR TO CONNECT NEW 3" VENT LINE TO EXISTING VENT LINE IN THE SPACE. ENSURE TERMINATION POINT IS A MINIMUM OF 10'-0" AWAY FROM ANY FRESH AIR INTAKES. COORDINATE EXACT LOCATION IN FIELD.
3	CONTRACTOR SHALL PROVIDE INDIRECT WASTE FROM FILTRATION SYSTEM AND WATER HEATER TO FLOOR SINK / MOP SINK. CONTRACTOR SHALL VERIFY EXACT DRAIN SIZES PER MANUFACTURER SPECIFICATIONS. PROVIDE AIR GAP NOT LESS THAN TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE. CONTRACTOR SHALL COORDINATE FLOOR SINK LOCATION WITH MACHINE/EQUIPMENT LEGS DURING ROUGH IN TO ENSURE NO CONFLICT.
4	NEW FLOOR MOUNTED GREASE INTERCEPTOR. COORDINATE SIZE OF TRAP WITH SIZE OF SINK AND LEGS LOCATION PRIOR TO ORDER. SPECIFIED GREASE INTERCEPTOR INCLUDES CERTIFIED INTERNAL FLOW CONTROL AND DOES NOT REQUIRE A DEDICATED FLOW CONTROL VENT (AIR INTAKE). IF THIS GREASE INTERCEPTOR IS SUBSTITUTED, CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING FLOW CONTROL AND VENT AND ANY ACCESSORIES AS REQUIRED BY LOCAL JURISDICTION.
5	CONTRACTOR SHALL PROVIDE INDIRECT WASTE PIPE TO FLOOR SINK. CONTRACTOR SHALL VERIFY EXACT DRAIN SIZES PER MANUFACTURER SPECIFICATIONS. PROVIDE AIR GAP AT FLOOR SINK NOT LESS THAN TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE. CONTRACTOR SHALL COORDINATE FLOOR SINK LOCATION WITH MACHINE/EQUIPMENT LEGS DURING ROUGH IN TO ENSURE NO CONFLICT.



REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL MAKE AND MODEL OF PLUMBING FIXTURES.

DOMESTIC WATER RISER DIAGRAM

SCALE: NTS | 1

1	CONNECT NEW 1 1/2" COLD LINE TO EXISTING LINE OF ADEQUATE CAPACITY LOCATED IN SPACE. VERIFY EXACT LOCATION, SIZE, AND CONNECTION POINT OF EXISTING COLD WATER MAIN LINE PRIOR TO BID. PROVIDE NEW WATER SUB-METER AND BACKFLOW PREVENTER. NOTIFY ARCHITECT/ENGINEER WITH ANY DISCREPANCIES PRIOR TO BID.
2	SELF-MOUNTED ELECTRIC WATER HEATER (EWH-1) IN AN ACCESSIBLE AREA AND MAINTAIN APPROPRIATE WORKING CLEARANCES AS RECOMMENDED BY THE MANUFACTURER. CONTRACTOR TO FILED VERIFY AND PROVIDE WITH EXPANSION TANK, DRAIN PAN, SHUT-OFF VALVES, PIPING MANIFOLD, AND ALL MANUFACTURER-REQUIRED ACCESSORIES. ROUTE CONDENSATE TO FD WITH CODE APPROVED AIR GAP. CONTRACTOR TO ENSURE INSTALLATION FEASIBILITY IN THE FIELD AS PER MANUFACTURER RECOMMENDATIONS AND NOTIFY THE ARCHITECT/ENGINEER WITH ANY DISCREPANCIES PRIOR TO BID.
3	PROVIDE THERMOSTATIC MIXING VALVE SET TO 110°F AT EACH HAND SINK AND LAVATORY.
4	PROVIDE 1/2" FCW LINE, TURN DOWN IN FURR WALL TO 18" AFF. PROVIDE 4" STUB-OUT AND SHUT-OFF WITH ACCESS PANEL AND CAPPED END UNDER JUICE BAR FOR FUTURE USE.
5	PROVIDE TRAP PRIMER RECESSED IN WALL WITH ACCESS PANEL. ROUTE 1/2" CW TO FLOOR DRAIN PER MANUFACTURER SPECIFICATIONS.
6	CONTRACTOR SHALL PROVIDE SECONDARY BACKFLOW PREVENTER FOR ICE MACHINE AND WATER FILTRATION SYSTEMS AS PER LOCAL CODE.
7	NO TAP-OFF SHALL BE TAKEN BEFORE RPZ.

DOMESTIC WATER KEY NOTES

SCALE: 2

REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL MAKE AND MODEL OF PLUMBING FIXTURES.

SANITARY AND VENT RISER DIAGRAM

SCALE: NTS | 3

1	CONTRACTOR SHALL CONNECT NEW 4" SANITARY LINE TO EXISTING SANITARY LINE IN SPACE. VERIFY EXACT LOCATION, SIZE, INVERT, DIRECTION OF FLOW AND CONNECTION POINT OF SANITARY MAIN PRIOR TO BID. NOTIFY ARCHITECT/ENGINEER WITH ANY DISCREPANCIES PRIOR TO BID.
2	CONTRACTOR TO CONNECT NEW 3" VENT LINE TO EXISTING VENT LINE IN THE SPACE. ENSURE TERMINATION POINT IS A MINIMUM OF 10'-0" AWAY FROM ANY FRESH AIR INTAKES. COORDINATE EXACT LOCATION IN FIELD.
3	CONTRACTOR SHALL PROVIDE INDIRECT WASTE FROM FILTRATION SYSTEM AND WATER HEATER TO FLOOR SINK / MOP SINK. CONTRACTOR SHALL VERIFY EXACT DRAIN SIZES PER MANUFACTURER SPECIFICATIONS. PROVIDE AIR GAP NOT LESS THAN TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE. CONTRACTOR SHALL COORDINATE FLOOR SINK LOCATION WITH MACHINE/EQUIPMENT LEGS DURING ROUGH IN TO ENSURE NO CONFLICT.
4	NEW FLOOR MOUNTED GREASE INTERCEPTOR. COORDINATE SIZE OF TRAP WITH SIZE OF SINK AND LEGS LOCATION PRIOR TO ORDER. SPECIFIED GREASE INTERCEPTOR INCLUDES CERTIFIED INTERNAL FLOW CONTROL AND DOES NOT REQUIRE A DEDICATED FLOW CONTROL VENT (AIR INTAKE). IF THIS GREASE INTERCEPTOR IS SUBSTITUTED, CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING FLOW CONTROL AND VENT AND ANY ACCESSORIES AS REQUIRED BY LOCAL JURISDICTION.
5	CONTRACTOR SHALL PROVIDE INDIRECT WASTE PIPE TO FLOOR SINK. CONTRACTOR SHALL VERIFY EXACT DRAIN SIZES PER MANUFACTURER SPECIFICATIONS. PROVIDE AIR GAP AT FLOOR SINK NOT LESS THAN TWICE THE EFFECTIVE OPENING OF THE INDIRECT WASTE PIPE. CONTRACTOR SHALL COORDINATE FLOOR SINK LOCATION WITH MACHINE/EQUIPMENT LEGS DURING ROUGH IN TO ENSURE NO CONFLICT.

SANITARY AND VENT KEY NOTES

SCALE: - | 4