

MECHANICAL SYMBOLS LIST

AC-1	EF-1	EQUIPMENT SYMBOL	MECHANICAL ABBREVIATIONS
		POINT OF NEW CONNECTION TO EXISTING	AFF ABOVE FINISHED FLOOR
			AL ACOUSTIC LINING
AIR DEVICES			
		CEILING DIFFUSER SUPPLY	BD BACKDRAFT DAMPER
		CEILING DIFFUSER RETURN/EXHAUST	CDS CEILING DIFFUSER SUPPLY
		SUPPLY GRILLE - DUCT MOUNT	CDR CEILING DIFFUSER RETURN
		RETURN GRILLE - SIDEWALL	CFM CUBIC FEET OF AIR PER MINUTE
DUCT ACCESSORIES			
		BACKDRAFT DAMPER	CP CONDENSATE PUMP
		VOLUME DAMPER W/ ACCESS DOOR	CD CONDENSATE DRAIN PIPE
CONTROLS AND SENSORS			
		THERMOSTAT	EF EXHAUST FAN
		TEMPERATURE SENSOR	FC FLEXIBLE CONNECTION
DUCTWORK			
		AIR DUCT W/ 1.5" ACOUSTICAL LINING	FD/AD FIRE DAMPER W/ACCESS DOOR
		FLEXIBLE DUCT	FD FIRE DAMPER W/FUSIBLE LINK
		FLEXIBLE CONNECTION	FSD FIRE SMOKE DAMPER
		RECTANGULAR DUCT (WIDTH X DEPTH)	MD MOTORIZED DAMPER
		ROUND DUCT (DIAMETER)	OAI OUTSIDE AIR INTAKE
		ROUND DUCT CROSS SECTION	T-X THERMOSTAT
		SUPPLY AIR RECTANGULAR DUCT CROSS SECTION	VD VOLUME DAMPER
		RETURN AIR RECTANGULAR DUCT CROSS SECTION	W.M.S. WIRE MESH SCREEN
			RTU ROOF TOP UNIT
			S.A.E SAME AS EXISTING
			V.I.F VERIFY IN FIELD

MECHANICAL DRAWING LIST	
M1.01	MECHANICAL GENERAL NOTES, SYMBOLS LIST & ABBREVIATIONS
M1.02	MECHANICAL SPECIFICATIONS
M2.01	MECHANICAL FLOOR PLAN & PARTIAL ROOF PLANS
M3.01	MECHANICAL DETAILS & SCHEDULES

CODE COMPLIANCE	
ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT:	
A.	2021 SEATTLE BUILDING CODE
B.	2021 SEATTLE ENERGY CODE
C.	2021 SEATTLE MECHANICAL CODE
D.	2021 SEATTLE FIRE CODE
E.	2023 NATIONAL ELECTRIC CODE
F.	2021 SEATTLE PLUMBING CODE

SEATTLE, WA BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2021 SEATTLE BUILDING CODES, BASE CODE - THE INTERNATIONAL BUILDING CODE 2021, AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

- ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
- VENTILATION FOR ALL AREA SHALL COMPLY WITH SEATTLE MECHANICAL CODE 2021 CHAPTER 4.
- THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
- TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE SEATTLE MECHANICAL CODE 2021:
 - VENTILATION SYSTEM BALANCING SMC 2021 - 403
- THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
 - STANDARDS OF HEATING - SMC 2021 - 309.1
 - DUCT CONSTRUCTION AND INSTALLATION- SMC 2021 - 603
 - AIR INTAKES, EXHAUSTS AND RELIEF - SMC 2021 - 401.5
 - AIR FILTERS - SMC 2021 - 605
 - MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - SMC 2021 - 513
 - GAS FIRED EQUIPMENT - FUEL GAS CODE 2021
- MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
- 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 SMC 2021 - 403.3
- SMOKE DETECTION SYSTEMS SHALL BE INSTALLED AND SEQUENCED TO FOLLOW CONTROLS OPERATIONS WITH THE REQUIREMENTS OF SECTION SMC 2021 - 606 TO CLOSE DAMPERS AND AUTOMATICALLY STOP THE FAN.
- REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE-RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
- 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.

GENERAL NOTES

- CONTRACTOR SHALL SURVEY THE AREA OF THIS WORK BEFORE SUBMITTING A BID AND SHALL BE RESPONSIBLE FOR NOTIFYING THE ARCHITECT OF ANY CONDITIONS WHICH WOULD PREVENT THE INSTALLATION OF THE WORK AS SHOWN ON DRAWINGS.
- ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- BEFORE PROCEEDING WITH ANY WORK IN OCCUPIED OR USED AREAS, THE CONTRACTOR SHALL APPLY TO OWNER FOR PERMISSION TO ENTER SUCH AREAS. THE CONTRACTOR IS OBLIGED TO PERFORM HIS WORK ONLY AT THE TIMES DESIGNATED BY OWNER. THERE WILL BE NO ADDITIONAL COMPENSATION FOR THE WORK PERFORMED AFTER HOURS OR ON OFF-DAYS WITHOUT PRIOR WRITTEN APPROVAL.
- THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- CONTRACTOR SHALL ASCERTAIN THE APPROPRIATE METHOD FOR BRINGING THE UNITS INTO AND THROUGH THE BUILDING TO POSITION UNIT IN LOCATION SHOWN ON THE PLANS. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH RESTRICTIVE SPACES. COORDINATE WITH BUILDING OWNER APPROPRIATE TIMES OF DAY SUCH EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL MAKE ALLOWANCE IN PRICING FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.
- SUPPORT ALL DUCTWORK FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 201. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
- PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.
- SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL (FIBERGLASS INSULATION IS NOT ACCEPTABLE).
- WHERE PENETRATIONS THROUGH FIRE RATED WALLS ARE NOT FIRE PROOFED THIS CONTRACTOR SHALL BE RESPONSIBLE TO SEAL SAME TO MAINTAIN THE RATED INTEGRITY.
- INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

13. ACCESS DOORS ARE REQUIRED FOR ALL BUILDING SERVICE VALVES THAT RUN THROUGH THE SPACE, AND ACCESS DOOR SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL. COORDINATE ALL LOCATIONS OF ACCESS DOORS WITH THE ARCHITECT.

14. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.

15. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

16. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

17. ALL EQUIPMENT SHALL BE PROVIDED WITH ONE YEAR WARRANTY PARTS AND LABOR AND FIVE YEARS ON COMPRESSORS. WARRANTY PERIOD BEGINS UPON PROJECT ACCEPTANCE

18. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST, OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FAILURE OF ANY DUCTWORK SYSTEM OR EQUIPMENT TO FUNCTION PROPERLY UPON COMPLETION OF HIS WORK UPON SAID SYSTEM OR EQUIPMENT.

21. SUBMIT SHOP DRAWING OF ALL WORK WHICH MUST BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE WORK COMMENCES.

22. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC) AND CONDITIONS.

23. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS THE CONTRACTOR SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

24. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

25. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

26. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS, THE SPECIFICATIONS OR ANY OTHER CONSTRUCTION DOCUMENT, THE ONE WITH THE MOST STRINGENT REQUIREMENT(S) SHALL APPLY.

DEFINITIONS:

1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.

2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.

3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

SCOPE OF WORK

SCOPE OF WORK

1. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS AS DESCRIBED IN THE SPECIFICATIONS, FLOOR PLAN(S) DESIGN, DETAIL DRAWINGS, NOTES, RFI'S, ETC. FOR THIS PROJECT. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.

2. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

3. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

GENERAL HVAC NOTES

GENERAL:

1. PROVIDE ALL MATERIAL AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.

2. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.

3. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.

4. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.

5. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.

6. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.

7. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.

8. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS, COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.

9. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND ELECTRICAL DIVISION OF THE SPECIFICATION.

10. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

11. MAINTAIN A MINIMUM 6'-8" CLEARANCE TO THE UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.

12. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH THE STRAIGHT SECTION OF PIPE OR DUCT UP- AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.

13. NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK, OR ROOF DECK. TENANT MAY ATTACH, NON-DESTRUCTIVELY, TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHING TO LANDLORD'S STRUCTURE, DO NOT DRILL, WELD, SCREW, OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY. NOTHING TO DAMAGE LANDLORD'S BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS, BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS, FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.

14. ALL PENETRATIONS TO ROOF MUST BE APPROVED BY LANDLORD. ALL RELATED ROOF WORK MUST BE DONE BY MALL'S DESIGNATED ROOFING CONTRACTOR, AT TENANT'S EXPENSE. COORDINATE ALL WORK WITH PROPERTY MANAGEMENT ON SITE.

15. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN THE DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

16. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION. ACCESS PANELS SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL.

17. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM A METAL DECK.

18. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND REQUIRED TO PROVIDE A VIBRATION-FREE INSTALLATION.

19. ALL DUCTWORK, AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.

20. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.

21. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL.

22. TENANT MUST REMOVE ALL ABANDONED ROOFTOP AND/ OR MECHANICAL EQUIPMENT ABOVE THE LEASED PREMISES AND WITHIN THE LEASED PREMISES, AT TENANT EXPENSE. PATCH AND REPAIR ROOF AS NEEDED.

CATBIRD

ISSUANCE NAME	DATE
CD SET	11/14/25
PERMIT SET/BID SET	12/22/25
1 IFC	01/20/26

MECHANICAL GENERAL NOTES, SYMBOLS LIST & ABBREVIATIONS

M1.01

23. TENANT'S GC TO LABEL ALL ROOF TOP EQUIPMENT WITH TENANT NAME SPACE NUMBER AND EQUIPMENT IDENTIFICATION (RTU-1, EF-1), PER MALL SPECIFICATIONS/ STANDARDS.
24. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO THE NEAREST DRAIN. CONDENSATE DRAIN PIPING SHALL BE COPPER. SEE THE DETAILS SHOWN IN THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR THE DEPTH OF THE AIR CONDITIONING CONDENSATE TRAP.
25. REFER TO TYPICAL DETAILS FOR DUCTWORK, AND EQUIPMENT INSTALLATION.
26. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED. HVAC SYSTEM MUST BE TESTED & BALANCED BY A LICENSED CONTRACTOR. COPY OF BALANCE REPORT MUST BE PROVIDED TO THE PROPERTY MANAGEMENT OFFICE ON-SITE.
27. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC STANDARDS.
28. NO PITCH POCKETS ARE PERMITTED ON THE ROOF FOR ANY CONDENSATE DRAINS, REFRIGERATION PIPING OR CONTROL WIRING. ALL CONNECTIONS ARE TO BE MADE INSIDE THE EQUIPMENT CURB OR THROUGH PRE-MANUFACTURED PIPING CURB.
29. ALL UNEXPOSED SUPPLY AIR AND OUTSIDE AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 1 1/2" THICK FOIL FACE INSULATION. INTERNALLY LINED DUCTWORK MAY BE USED FOR ACOUSTIC PURPOSES ONLY, NOT AS A SUBSTITUTE FOR EXTERNAL INSULATION.
30. ALL DUCTWORK SHALL BE SHEET METAL. FLEX DUCT MAY BE ONLY USED IN RUNS OF 5'-0" OR LESS.
31. AT CONCLUSION OF PROJECT, HVAC SYSTEM MUST BE TESTED AND BALANCED BY A LICENSED CONTRACTOR. COPY OF BALANCE REPORT MUST BE PROVIDED TO PROPERTY MANAGEMENT OFFICE ON-SITE.
32. LANDLORD STRONGLY PREFERS TO USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

SPECIFICATIONS

SECTION 0001 - NOTICE TO BIDDERS

- 1.1 BIDDERS REPRESENTATIONS
 - A. THE BIDDER BY MAKING A BID REPRESENTS THAT:
 - THE BIDDER HAS READ AND UNDERSTANDS THE BIDDING DOCUMENTS, TO THE EXTENT THAT SUCH DOCUMENTATION RELATES TO THE WORK FOR WHICH THE BID IS SUBMITTED, AND FOR OTHER PORTIONS OF THE PROJECT, IF ANY, BEING BID CONCURRENTLY OR PRESENTLY UNDER CONSTRUCTION.
 - THE BID IS MADE IN COMPLIANCE WITH THE BIDDING DOCUMENTS.
 - THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO SERVE JOINTLY AS A BASIS FOR THE BIDDER TO SUBMIT A CONTRACT PRICE FOR THE MATERIAL AND LABOR.
 - SHOULD CONFLICTS OR DISCREPANCIES OCCUR WITHIN THE BIDDING DOCUMENTS, THE ITEM OR ITEMS IN DISPUTE THAT REPRESENT THE GREATER COST SHALL PREVAIL IN THE FINAL BID.
 - THE BID IS BASED UPON THE MATERIALS, EQUIPMENT AND SYSTEMS REQUIRED BY THE BIDDING DOCUMENTS WITHOUT EXCEPTION.
- 1.2 EXISTING CONDITIONS AND COORDINATION
 - A. THE BIDDER HAS VISITED THE SITE, BECOME FAMILIAR WITH LOCAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND HAS CORRELATED THE BIDDERS PERSONAL OBSERVATIONS WITH THE REQUIREMENTS OF THE PROPOSED BIDDING DOCUMENTS.
 - B. THE BIDDER SHALL PROPOSE COORDINATION OF WORK SUCH THAT CONFLICTS WITH OTHER TRADES AND SPACE ALLOCATIONS ARE AVOIDED.
- 1.3 RESPONSIBILITIES
 - A. THE BIDDER UNDERSTANDS THAT ANY CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE TIMELY COMPLETION AND ACCEPTANCE OF THEIR WORK AND THAT ANY ITEMS DAMAGED, LOST OR STOLEN DURING TIME OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED WITHOUT ANY ADDITIONAL COST TO THE OWNER.
 - B. THE BIDDER UNDERSTANDS THAT ANY PROPOSED WORK IN OCCUPIED TENANT SPACES SHALL BE PERFORMED DURING TIMES OF NON-TENANT OCCUPANCY OR AS SCHEDULED OR DIRECTED BY THE GENERAL CONTRACTOR.
 - C. THE BIDDER UNDERSTANDS THAT ANY PROPOSED SHUT-DOWN OF EXISTING SYSTEMS DURING CONSTRUCTION SHALL BE PRE-ARRANGED WITH THE GENERAL CONTRACTOR AND THAT SUCH SHUT-DOWNS ARE TO BE KEPT TO A MINIMUM.

END OF SECTION 0001

SECTION 0101 - QUALITY OF WORK

- 1.1 WORKMANSHIP
 - A. ALL WORK SHALL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
 - B. ALL DEFECTS WHICH DEVELOP OR ARE DISCOVERED WITHIN THIS PERIOD SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT OR GENERAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
 - C. UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL REMOVE FROM THE SITE, ALL TOOLS, DEMOLISHED APPLIANCES AND ANY SURPLUS MATERIAL.
- 1.2 CODE COMPLIANCE
 - A. ALL WORK SHALL MEET ALL STATE AND LOCAL CODES HAVING JURISDICTION.

END OF SECTION 0101

SECTION 0102 -REQUIRED DOCUMENTS

- 1.1 SHOP DRAWINGS
 - A. A SET OF PRINTS FOR ANY MECHANICAL WORK INCLUDING BUT NOT LIMITED TO, DUCTWORK AND PIPING LAYOUT SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO CONSTRUCTION OR PURCHASE OF MATERIALS.
- 1.2 SUBMITTALS
 - A. WITHIN 90 DAYS, EQUIPMENT SUBMITTALS OF ALL PROPOSED MECHANICAL AND ANCILLARY EQUIPMENT INCLUDING ALL ACCESSORIES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL PERTINENT MODELS, SIZES, ACCESSORIES AND CHOICES SHALL BE CLEARLY CHECKED, PRINTED OR OTHERWISE INDICATED ON THE SUBMITTALS.
- 1.3 RECORD DRAWINGS
 - A. WITHIN 90 DAYS, UPON COMPLETION OF THE WORK, A RECORD DRAWING SHALL BE SUBMITTED TO THE OWNER DEPICTING ALL SUBSEQUENT CHANGES, ADDITIONS AND OR CORRECTIONS TO THE CONTRACT DRAWINGS AND OR CONTRACT SCOPE MADE DURING CONSTRUCTION. THIS DRAWING SHALL REPRESENT A COMPLETE RECORD OF THE WORK INSTALLED.
- 1.4 EQUIPMENT OPERATING INSTRUCTIONS
 - A. WITHIN 90 DAYS, ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS, EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
 - B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE-RING BINDERS WITH CLEAR ACETATE COVERS. THE CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE ELECTRONIC COPY TO THE ENGINEER.
 - C. THE INSTRUCTION BOOKLET SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.

END OF SECTION 0102

SECTION 078413-PENETRATION FIRE-STOPPING

- 1.1 QUALITY ASSURANCE
 - A. INSTALLER QUALIFICATIONS: AN FM GLOBAL-APPROVED FIRE-STOP CONTRACTOR OR A UL-QUALIFIED FIRE-STOP CONTRACTOR.
 - B. FIRE-TEST-RESPONSE CHARACTERISTICS: UL, INTERTEK ETL SEMKO OR FM GLOBAL
- 1.2 PENETRATION FIRESTOPPING
 - A. PENETRATIONS IN FIRE-RESISTANCE-RATED WALLS: F-RATINGS PER ASTM E 814 OR UL 1479.
 - B. PENETRATIONS IN HORIZONTAL ASSEMBLIES: F- AND T-RATINGS PER ASTM E 814 OR UL 1479.
 - C. PENETRATIONS IN SMOKE BARRIERS: L-RATINGS PER UL 1479.
 - D. W-RATINGS: PER UL 1479.
- 1.3 INSTALLATION
 - A. IDENTIFICATION: PREPRINTED METAL OR PLASTIC LABELS.
- 1.4 FIELD QUALITY CONTROL
 - A. INSPECTION OF INSTALLED FIRE-STOPPING: BY OWNER-ENGAGED AGENCY ACCORDING TO ASTM E 2174.
- 1.5 THROUGH-PENETRATION FIRESTOP SYSTEM SCHEDULE

WHERE UL-CLASSIFIED SYSTEMS ARE INDICATED, THEY REFER TO SYSTEM NUMBERS IN UL'S "FIRE RESISTANCE DIRECTORY" UNDER PRODUCT CATEGORY XHEZ.

FOR THE FOLLOWING SYSTEMS:

METALLIC AND NON-METALLIC PIPES, CONDUIT, OR TUBING, ELECTRICAL CABLES, CABLE TRAYS WITH ELECTRIC CABLES, MISCELLANEOUS ELECTRICAL PENETRANTS, INSULATED PIPES, GROUPINGS OF PENETRANTS, USE ON OR MORE THE FOLLOWING MATERIALS:

- a. LATEX SEALANT
- b. SILICONE SEALANT
- c. INTUMESCENT PUTTY
- d. MORTAR
- e. SILICONE FOAM
- f. PILLOWS/BAGS
- g. INTUMESCENT WRAP STRIPS
- h. INTUMESCENT COMPOSITE SHEET

1.6 MANUFACTURERS

1. HILTI CONSTRUCTION CHEMICAL, INC
2. TREMCO INC.
3. 3M FIRE PROTECTION PRODUCTS

END OF SECTION 078413

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

- 1.1 SUMMARY
 - A. TESTING, ADJUSTING, AND BALANCING FOR THE FOLLOWING:
 1. AIR SYSTEMS: CONSTANT AND VARIABLE VOLUME SYSTEMS.
 2. MOTORS.
- 1.2 QUALITY ASSURANCE
 - A. THE CONTRACTOR SHALL PROCURE THE SERVICES OF A TESTING, ADJUSTING AND BALANCING (TAB) SPECIALIST WHO SPECIALIZES IN HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS. THE TAB AGENT SHALL HAVE THE FOLLOWING QUALIFICATIONS: AABC, NEBB OR TABB CERTIFIED.
- 1.3 EXECUTION
 - A. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL EXISTING AIR AND HYDRONIC SYSTEMS THAT ARE TO REMAIN OR TO BE INCORPORATED INTO NEW WORK PRIOR TO THE STARTING OF WORK IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.
 - B. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL NEW AIR AND HYDRONIC SYSTEMS AS LISTED ABOVE IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.
 - C. THE REPORT SHALL INDICATE A SCHEMATIC DIAGRAM INDICATING LOCATIONS OF ALL EQUIPMENT TESTED AND MEASUREMENT LOCATIONS.
 - D. PRIOR TO FINAL INSPECTION OF THE WORK, THE TAB SPECIALIST SHALL BALANCE ALL SYSTEMS AS INDICATED ABOVE TO THE REQUIREMENTS OF THE DESIGN.
 - E. THE CONTRACTOR SHALL HAVE FURNISH AND INSTALL ALL ADDITIONAL BALANCING EQUIPMENT, PRESSURE TAPS, GAUGES AND OTHER EQUIPMENT AS REQUIRED FOR A PROPERLY BALANCED SYSTEM AT NO ADDITIONAL COST TO THE OWNER. SUCH ADDITIONAL EQUIPMENT SHALL ADHERE IN STRICT ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
 - F. THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST COORDINATE ALL WORK OF THIS SECTION WITH THE BUILDING MANAGER. BALANCING WORK SHALL NOT CONFLICT WITH OTHER WORK SO AS TO MAINTAIN COMPLETION WITHIN THE SPECIFIED TIME.
 - G. ALL INSTRUMENTS USED FOR TAB SHALL BE MAINTAINED IN GOOD WORKING CONDITION AND ACCURATELY CALIBRATED.
 - H. TOLERANCES: PLUS OR MINUS 5 PERCENT OF DESIGN VALUES.
 - I. INSPECTIONS: RANDOM CHECKS BY OWNER OR ARCHITECT TO VERIFY FINAL TESTING, ADJUSTING, AND BALANCING REPORT.
 - J. ADDITIONAL TESTS: RANDOM TESTS WITHIN 90 DAYS OF COMPLETING TAB TO VERIFY BALANCE CONDITIONS AND SEASONAL TESTS.

END OF SECTION 230593

SECTION 230713 - DUCT INSULATION

- 1.1 QUALITY ASSURANCE

SURFACE-BURNING CHARACTERISTICS: ALL INSULATION SHALL HAVE COMPOSITE INSULATION JACKET OR FACING AND ADHESIVE USED TO ADHERE THE FACING OR JACKET TO THE INSULATION) A FLAME-SPREAD INDEX OF 25, AND SMOKE-DEVELOPED INDEX OF 50 FOR INSULATION INSTALLED INDOOR, 75, AND SMOKE-DEVELOPED INDEX OF 150 FOR INSULATION INSTALLED OUTDOORS, ACCORDING TO ASTM E 84.
- 1.2 FIELD QUALITY CONTROL
 - A. FIELD INSPECTIONS: BY OWNER-ENGAGED AGENCY.
- 1.3 INDOOR DUCT AND PLENUM INSULATION SCHEDULE:
 - A. CONCEALED, RECTANGULAR, ROUND AND FLAT-OVAL, SUPPLY-RETURN, OUTDOOR-AND EXHAUST-AIR DUCT AND AIR PLENUM INSULATION:
 - B. FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN WITH MINIMUM INSTALLED THERMAL RESISTANCE AS FOLLOWS:

UNCONDITIONED SPACES WITHIN BUILDING:	R-6	
WITHIN BUILDING ENVELOPE ASSEMBLY:	R-8	OUTSIDE
OF BUILDING:	R-8	
- 1.4 ITEMS NOT INSULATED:
 1. FIBROUS-GLASS DUCTS.
 2. METAL DUCTS WITH DUCT LINER OR SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE ANDASHRAE/IESNA 90.1.
 3. FACTORY-INSULATED FLEXIBLE DUCTS.
 4. FACTORY-INSULATED PLENUMS AND CASINGS.
 5. FLEXIBLE CONNECTORS.
 6. VIBRATION-CONTROL DEVICES.
 7. FACTORY-INSULATED ACCESS PANELS AND DOORS.
 8. DUCTS THAT HAVE INTERNAL ACOUSTICAL LINING.
- 1.5 PRODUCTS
 - A. THE FOLLOWING INSULATION MANUFACTURERS WILL BE ACCEPTABLE:
 1. JOHNS-MANVILLE
 2. OWENS-CORNING
- 1.6 ACOUSTICAL TREATMENT
 1. WHERE SHOWN ON THE DRAWINGS, LOW PRESSURE DUCTWORK SHALL BE LINED WITH 1.5" THICK R-6 AS MANUFACTURED BY DUCTMATE, 1-1/2 POUND MINIMUM DENSITY, NEOPRENE COATED, FLEXIBLE FIBERGLASS DUCT

LINER. LINING SHALL COMPLY WITH NFPA 90A AND SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING NOT MORE THAN 50. DUCT SIZES WHERE LINING IS INDICATED ON PLANS ARE MINIMUM INSIDE CLEAR DIMENSIONS REQUIRED.

END OF SECTION 230713

SECTION 233113 - METAL DUCTS

- 1.1 CONSTRUCTION
 - A. EACH DUCT SYSTEM SHALL BE CONSTRUCTED FOR THE SPECIFIC SMACNA DUCT PRESSURE CLASSIFICATIONS SHOWN ON THE CONTRACT DRAWINGS, WHERE NO PRESSURE CLASSES ARE SPECIFIED BY THE DESIGNER, THE SMACNA 1 INCH WG PRESSURE, SEAL CLASS "A".
 - B. ALL DUCTWORK SHALL BE CONSTRUCTED TO SMACNA 1" WG DESIGN AND NOT LESS THAN THE FOLLOWING STANDARDS:
 1. CONSTRUCT SO THAT ALL INTERIOR SURFACES ARE SMOOTH. USE SLIP AND DRIVE OR FLANGED AND BOLTED CONSTRUCTION WHEN FABRICATING RECTANGULAR DUCTWORK. USE SPIRAL LOCK SEAM CONSTRUCTION WHEN FABRICATING ROUND SPIRAL DUCTWORK. SHEET METAL SCREWS MAY BE USED ON DUCT HANGERS. TRANSVERSE JOINTS AND OTHER SMACNA APPROVED LOCATIONS IF THE SCREW DOES NOT EXTEND MORE THAN 1/2 INCH INTO THE DUCT.
 - SHEET STEEL SHALL COMPLY WITH ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEET METAL, ZINC COATED (GALVANIZED) OR ZINC IRON ALLOY-COATED (GALVANNEALED) BY HOT DIP PROCESS, AND A924 STANDARD SPECIFICATION FOR GENERAL REQUIREMENT FOR SHEET METALLIC-COATED BY HOT DIP PROCESS. ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED. CONNECTIONS TO WALLS OR FLOOR SHALL BE AIR TIGHT WITH ANGLE IRON AND CAULKING. SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIR TIGHT. PROVIDE TURNING VANES ALL 90° ELBOWS.
 - USE ELBOWS AND TEES WITH A CENTER LINE RADIUS TO WIDTH OR DIAMETER RATIO OF 1.5 WHEREVER SPACE PERMITS. WHEN A SHORTER RADIUS MUST BE USED DUE TO LIMITED SPACE, INSTALL SINGLE WALL SHEET METAL SPLITTER VANES IN ACCORDANCE WITH SMACNA PUBLICATIONS, TYPE RE 3, WHERE SPACE WILL NOT ALLOW AND THE C VALUE OF THE RADIUS ELBOW, AS GIVEN IN SMACNA PUBLICATIONS, EXCEEDS 0.31. USE RECTANGULAR ELBOWS WITH TURNING VANES AS SPECIFIED IN SECTION 23 33 00. SQUARE THROAT-RADIUS HEEL ELBOWS WILL NOT BE ACCEPTABLE. STRAIGHT TAPS OR BULLHEAD TEES ARE NOT ACCEPTABLE.
 - WHERE RECTANGULAR ELBOWS ARE USED, PROVIDE TURNING VANES IN ACCORDANCE WITH SECTION 23 33 00.
 - PROVIDE EXPANDED TAKE-OFFS OR 45 DEGREE ENTRY FITTINGS FOR BRANCH DUCT CONNECTIONS WITH BRANCH DUCTWORK AIRFLOW VELOCITIES GREATER THAN 700 FPM. SQUARE EDGE 90-DEGREE TAKE-OFF FITTINGS OR TRIGHT TAPS WILL NOT BE ACCEPTED.
 - BUTTON PUNCH SNAP-LOCK CONSTRUCTION WILL NOT BE ACCEPTED ON ALUMINUM DUCTWORK.
 - ROUND DUCTS MAY BE SUBSTITUTED FOR RECTANGULAR DUCTS IF SIZED IN ACCORDANCE WITH ASHRAE TABLE OF EQUIVALENT RECTANGULAR AND ROUND DUCTS. NO VARIATION OF DUCT CONFIGURATION OR SIZES PERMITTED EXCEPT BY WRITTEN PERMISSION OF THE ENGINEER.
- C. WHERE LATEST EDITION OF SMACNA DOES NOT CLEARLY STATE GAUGES AND/OR STIFFENERS TO BE USED OR, WHERE SMACNA STANDARDS REQUIRE INTERPRETATION, THE FOLLOWING MINIMUM METAL GAUGES AND BRACING SHALL BE USED:

UG	MAX. SIDE INCHES	TRANSVERSE JOINTS AND BRACING
22	UP TO 12	S SLIP, DRIVE SLIP, ONE INCH POCKET LOCK ON 8 FOOT CENTERS
22 13 TO 24	1"X1"X1/8"	ANGLES ON 4 FOOT CENTERS
20 25 TO 35	1"X1"X1/8"	ANGLES ON 2 FOOT CENTERS

- D. PROVIDE TAPPING IN DUCTS FOR THERMOMETERS WHERE SPECIFIED. IN ADDITION, PROVIDE AN AIRTIGHT PLUGGED TAPPING LOCATED AS FOLLOWS:
 1. UPSTREAM OF EACH REHEAT COIL AND VAV BOX.
 2. DOWNSTREAM OF EACH REHEAT COIL AND VAV BOX.
- E. FLAT OVAL OR ROUND DUCTWORK MAY BE PROVIDED IN LIEU OF RECTANGULAR DUCTWORK WITH THE REINFORCEMENT FOR FLAT SIDES SAME AS SPECIFIED FOR THE RECTANGULAR DUCTWORK, AND AS PER SMACNA FLAT OVAL DUCT CONSTRUCTION STANDARDS SHOWN IN FIG. 3-6 AND AS SHOWN IN FIG. 3-1 AND 3-2 FOR ROUND DUCTWORK.
- F. ALL DUCTWORK SHALL BE SEALED TO CLASS "A" AND LEAK TESTED TO MEAT SMACNA CLASS 6 FOR RECTANGULAR AND CLASS 3 FOR ROUND DUCTS.

1.2 MATERIALS

- A. SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS.
- B. SINGLE-WALL ROUND AND FLAT-OVAL DUCTS AND FITTINGS.
- C. SHEET METAL MATERIALS:
 1. GALVANIZED SHEET STEEL.
 2. STAINLESS-STEEL SHEETS.
 3. ALUMINUM SHEETS.
 4. FACTORY-APPLIED ANTI-MICROBIAL COATING.
- D. DUCT LINER:
 1. FIBROUS GLASS, TYPE I, FLEXIBLE.
 - a. WITH ANTI-MICROBIAL EROSION-RESISTANT COATING.
 2. FLEXIBLE ELASTOMERIC.
 3. NATURAL FIBER.

E. SEALANT MATERIALS:

1. TWO-PART TAPE SEALING SYSTEM.
2. WATER-BASED JOINT AND SEAM SEALANT.
3. SOLVENT-BASED JOINT AND SEAM SEALANT.
4. FLANGED JOINT SEALANT.
5. FLANGE GASKETS.
6. ROUND DUCT JOINT O-RING SEALS.

1.3 DUCT CLEANING

- A. CLEAN EXISTING DUCT SYSTEM(S) BEFORE TESTING, ADJUSTING, AND BALANCING.
- B. CLEAN THE FOLLOWING ITEMS:
 1. AIR OUTLETS AND INLETS.
 2. SUPPLY, RETURN, AND EXHAUST FANS.
 3. AIR-HANDLING UNITS.
 4. COILS AND RELATED COMPONENTS.
 5. RETURN-AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
 6. SUPPLY-AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.
 7. DEDICATED EXHAUST AND VENTILATION COMPONENTS AND MAKEUP AIR SYSTEMS.
- 1.4 DUCT SCHEDULE
 - A. ALL DUCTS SHALL BE GALVANIZED STEEL EXCEPT AS FOLLOWS:
 8. MOIST ENVIRONMENT DUCT MATERIAL: ALUMINUM.

END OF SECTION 233113

SECTION 233713 - DIFFUSERS, REGISTERS, AND GRILLES

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

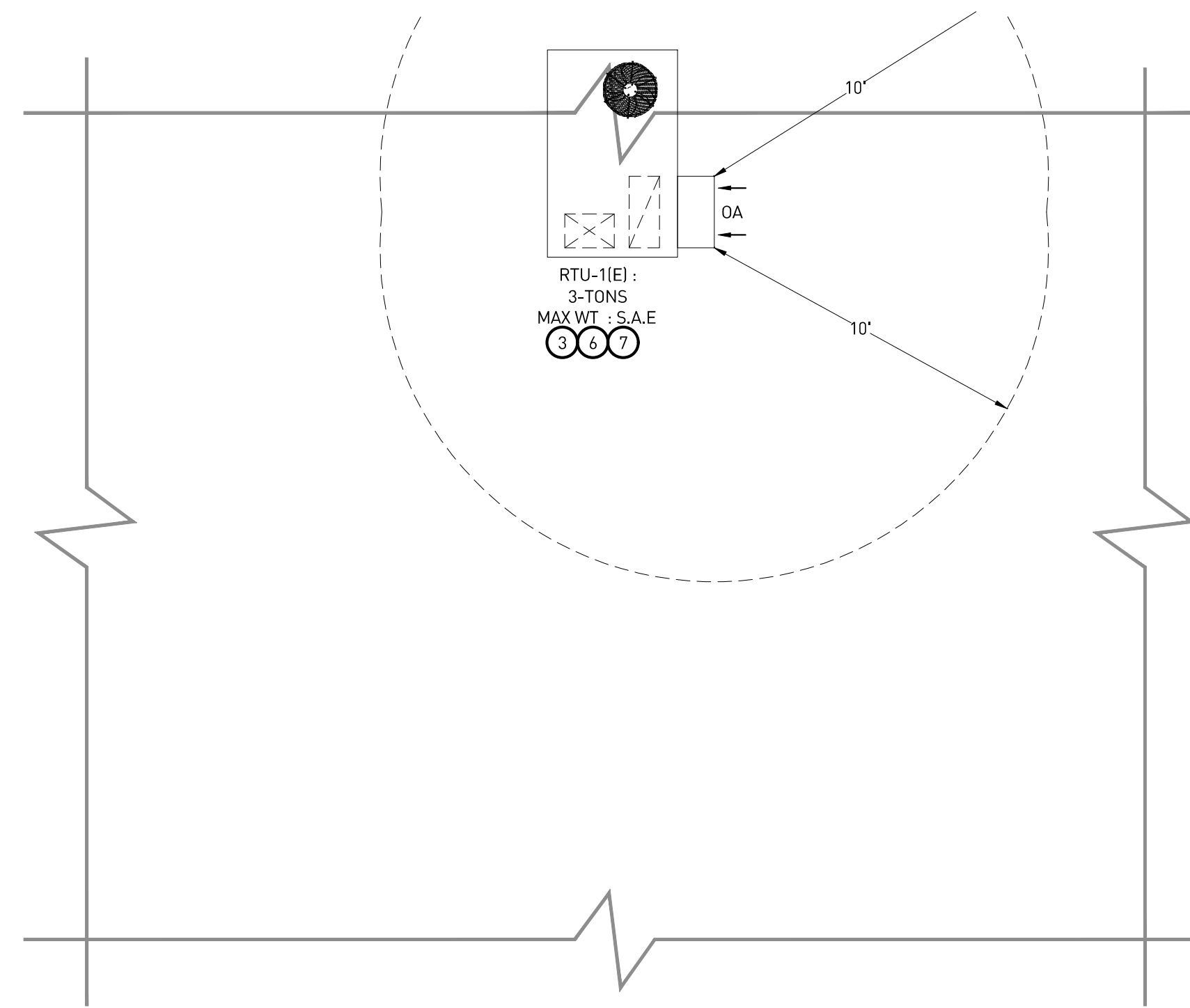
END OF SECTION 233713

CATBIRD

ISSUANCE NAME	DATE
CD SET	11/14/25
PERMIT SET/BID SET	12/22/25
1 IFC	01/20/26

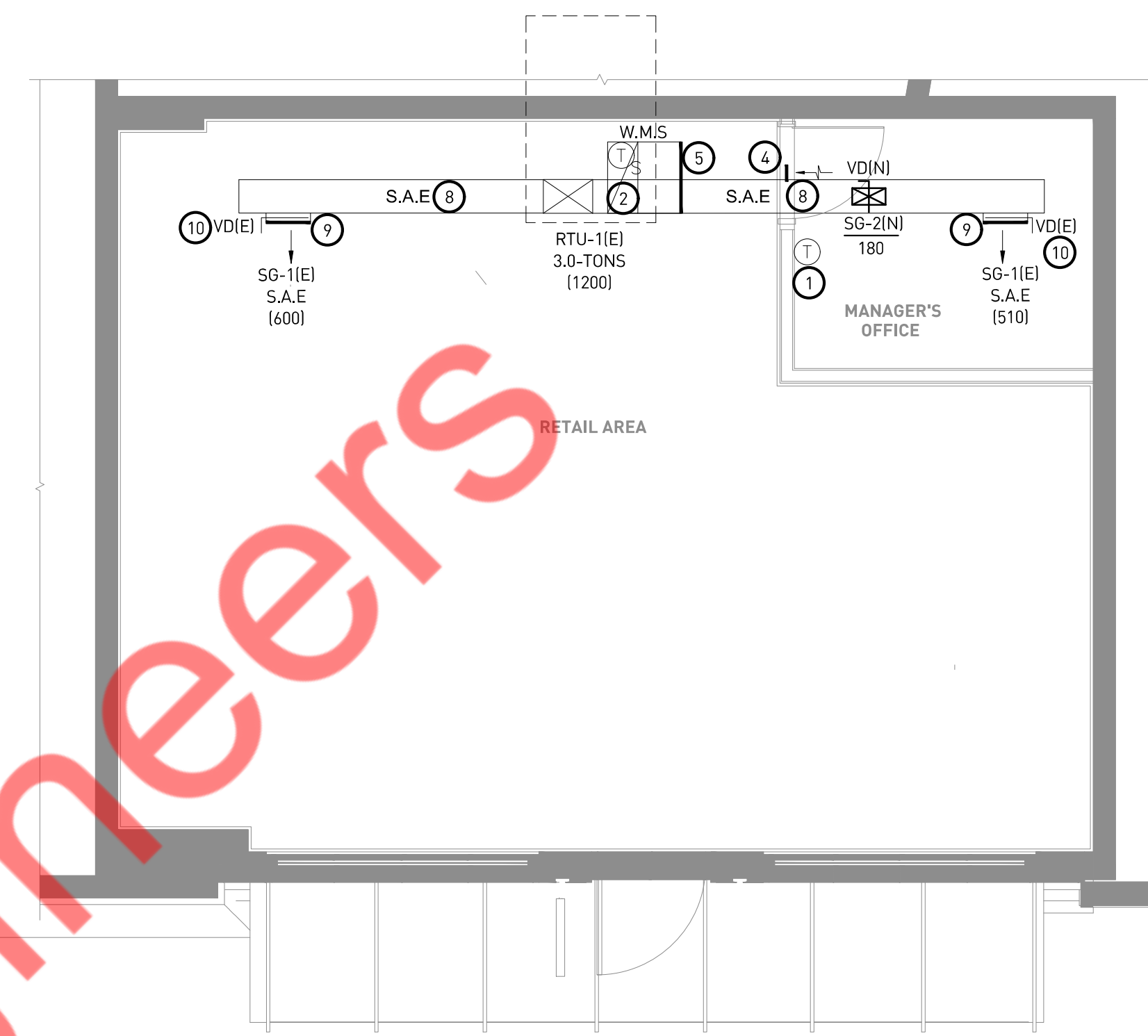
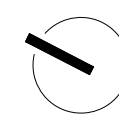
MECHANICAL SPECIFICATIONS

M1.02



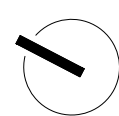
MECHANICAL PARTIAL ROOF PLAN | 2

NTS



MECHANICAL FLOOR PLAN | 1

1/4" = 1'-0"



MECHANICAL GENERAL NOTES
A. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
B. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
C. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
D. TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO G.C AND OWNER.
E. ALL EXPOSED ROUND DUCTWORK SHALL BE INTERNALLY LINED. ALL DUCTWORK DIMENSIONS ARE INSIDE CLEAR.
F. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF THE WALLS.
G. PROVIDE MINIMUM R-6 INSULATION (INTERNAL FOR EXPOSED DUCTS AND EXTERNAL FOR CONCEALED DUCTS) FOR SUPPLY & RETURN AIR DUCTS. PROVIDE ACOUSTIC INSULATION ON MAIN SUPPLY AND RETURN DUCTS UP TO 10 FT. FROM HVAC UNIT.
H. KEEP ALL ADJOINING AREAS ADJACENT TO THE WORK AREAS CLEAN AND FREE OF DEBRIS.
I. ALL EXHAUST AND RETURN AIR TERMINALS TO HAVE RIGID DUCT CONNECTIONS.
J. REUSE EXISTING DUCTWORK, DIFFUSERS, DAMPERS AS MUCH AS POSSIBLE. REPLACE AS/IF REQUIRED. REPLACE DUCT INSULATION IF DAMAGED. INSULATION VALUES SHALL MATCH WITH THE LOCAL CODE OR AS MENTIONED IN MECHANICAL SPECIFICATIONS.

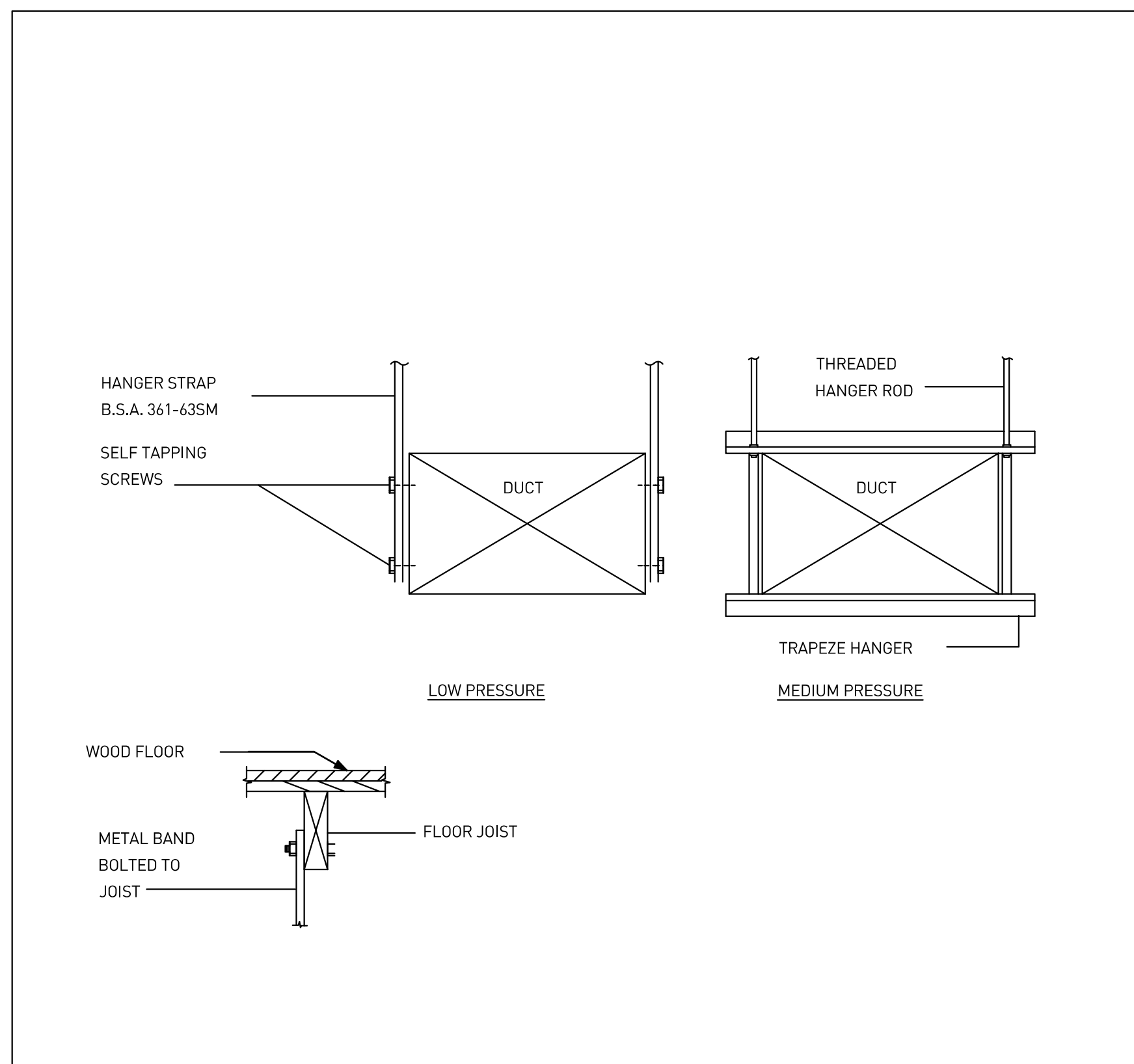
MECHANICAL FLOOR PLAN & PARTIAL ROOF PLANS
① REUSE & RELOCATE EXISTING THERMOSTAT. IF EXISTING THERMOSTAT IS NOT IN GOOD CONDITION TO REUSE, THEN INSTALL & WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT & OWNER PRIOR TO ROUGH-IN.
② REUSE EXISTING REMOTE TEMP. SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
③ EXISTING MECHANICAL ROOFTOP UNIT ALONG WITH ALL ASSOCIATED SUPPORTS AND DUCT DROPS TO REMAIN. CONTRACTOR TO ENSURE RTU IS WORKING AT THEIR 100% RATED CAPACITY. VERIFY IN FIELD PRIOR TO BID. BALANCE THE AIRFLOW AS PER AIR BALANCE TABLE ON SHEET M-3.01. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID AND START OF WORK. CONTRACTOR TO FIELD VERIFY EXISTING DRAIN LINE FROM RTU-1(E) AND KEEP AS IT IS FLUSH WITH EXISTING DRAIN. REPLACE WITH KIND IF DAMAGED.
④ PROVIDE 4"x6" DOOR GRILLE OR 1" DOOR UNDERCUT.
⑤ PROVIDE FULL SIZE OF WIRE MESH SCREEN TO RETURN AIR DUCT DROP, CONTRACTOR TO FIELD VERIFY THE EXACT SIZE OF RETURN AIR DUCT ON SITE.
⑥ GC TO FIELD VERIFY THE EXISTING LOCATION, CONFIGURATION, WORKING CONDITION AND ACCESSORIES OF THE RTU. REPLACE ALL AIR FILTERS WITH MERV-13 FILTERS.
⑦ CONTRACTOR TO FIELD VERIFY THAT THE LOCATION OF ANY EXHAUST SOURCE SHOULD BE AT LEAST 10'-0" AWAY FROM THE OUTSIDE AIR INTAKE OPENING OF RTU.
⑧ EXISTING SUPPLY & EXHAUST AIR DUCTWORK TO REMAIN & TO BE REUSED. CONTRACTOR SHALL CLEAN AND REFURBISH TO "LIKE NEW" CONDITION. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING DUCTWORK. EXTEND/MODIFY DUCTWORK AS/IF REQUIRED. REPLACE WITH SIMILAR KIND IF BEYOND REPAIR/CLEAN. CONTRACTOR TO VERIFY IN FIELD PRIOR TO BID.
⑨ REUSE EXISTING SUPPLY AIR GRILLES AS SHOWN ON PLAN. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING GRILLES. CLEAN AND REFURBISH TO "LIKE NEW" CONDITION. EXTEND/MODIFY DUCTWORK AS/IF REQUIRED. REPLACE WITH SIMILAR KIND IF BEYOND REPAIR/CLEAN. CONTRACTOR TO VERIFY IN FIELD PRIOR TO BID. EXISTING VOLUME DAMPERS TO REMAIN & TO BE REUSED.
⑩ EXISTING VOLUME DAMPERS TO REMAIN & TO BE REUSED. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF EXISTING VOLUME DAMPERS. RE-BALANCE OR RE-ADJUST THE VOLUME DAMPERS TO MATCH THE AIRFLOW AS INDICATED ON PLAN. PROVIDE A NEW VOLUME DAMPER OR COLLAR DAMPER IF THE EXISTING ONE IS DAMAGED. CONTRACTOR TO VERIFY IN FIELD PRIOR TO BID.

IMPORTANT NOTE:
G.C. TO PROVIDE AND INSTALL "MERV-13" PRE MEDIA FILTRATION OVER EXISTING HVAC EQUIPMENT RETURN DUCT OPENING.
WHEN REQUIRED, IT IS THE OWNER'S RESPONSIBILITY TO CONTACT WITH A COMMISSIONING AUTHORITY TO COMPLY WITH LOCAL CODES.

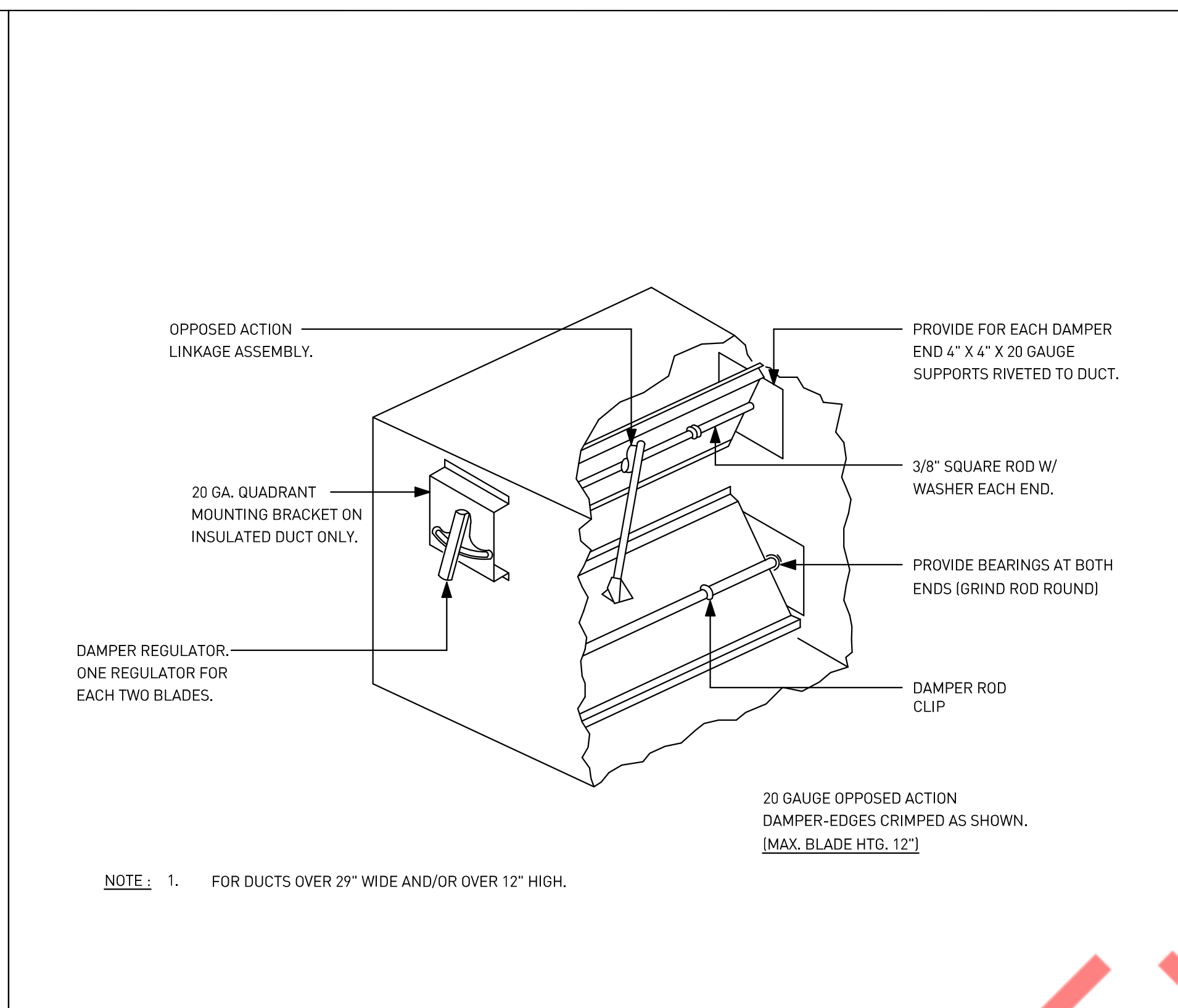
Property of [Redacted] Engineers

CATBIRD

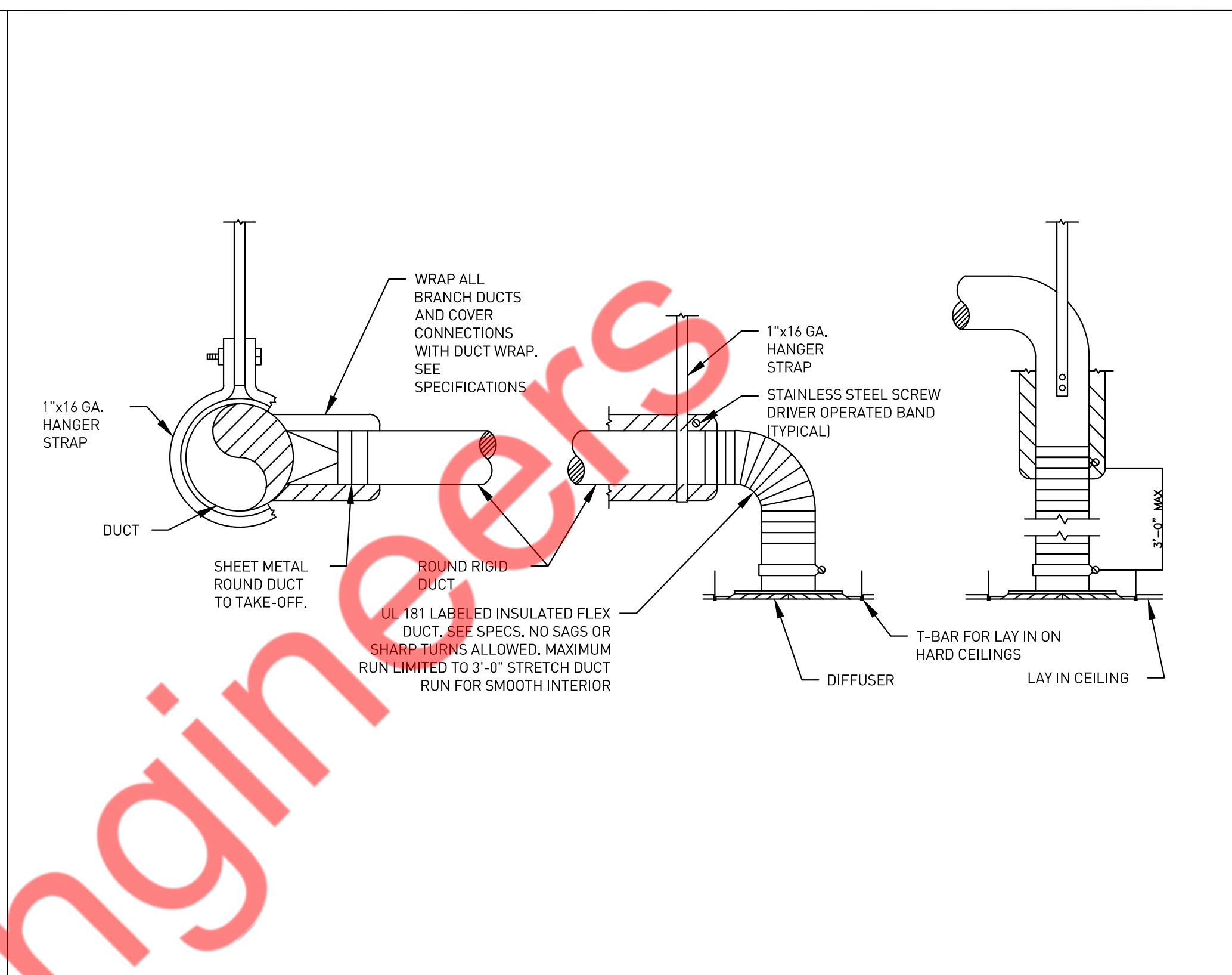
ISSUANCE NAME	DATE
CD SET	11/14/25
PERMIT SET/BID SET	12/22/25
1 IFC	01/20/26



1 METHOD OF HANGING DUCTWORK
M3.01 N.T.S



2 LOW PRESSURE BALANCING DAMPER
M3.01 N.T.S



3 TYPICAL DIFFUSER CONNECTION DETAIL
M3.01 N.T.S

EXISTING GAS FIRED PACKAGED ROOF TOP UNIT SCHEDULE																					
UNIT ID	MANUFACTURER	MODEL	NOMINAL TONS	SUPPLY FAN DATA					COOLING DATA					ELECTRICAL DATA			SEER	OPERATING WEIGHT (LBS)	REMARKS		
				TOTAL CFM	OUTSIDE AIR CFM	EXTERNAL STATIC PRESSURE (IN. W.G.)	INPUT MBH	OUTPUT MBH	EFFICIENCY %	TOTAL MBH	SENSIBLE MBH	AMBIENT TEMP. DB (°F)	ENTERING TEMP. DB / WB (°F)	VOLTS	PHASE	Hz				MCA(A)	MOC(A)
RTU-1(E)	CARRIER (V.I.F.)	48TCDA04A2A6A0A0A0(V.I.F.)	3.0 (V.I.F)	1200 (V.I.F)	150	S.A.E	72 (V.I.F)	59 (V.I.F)	82 (V.I.F)	34.6 (V.I.F)	S.A.E	S.A.E	S.A.E	460 (V.I.F)	3 (V.I.F)	60 (V.I.F)	11 (V.I.F)	15 (V.I.F)	S.A.E	S.A.E	1-7

NOTES:
 1. S.A.E. : SAME AS EXISTING, V.I.F. : VERIFY IN FIELD
 2. EXISTING RTU WITH ALL ACCESSORIES TO REMAIN SAME AND TO BE REUSED.
 3. CONTRACTOR TO FIELD VERIFY RTU IS WORKING AT THEIR 100% RATED CAPACITY. INFORM TO DESIGN ENGINEER IF ANY DISCREPANCIES ARE FOUND IN PERFORMANCE PRIOR TO CONSTRUCTION.
 4. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND CONFIGURATION OF UNIT ON SITE.
 5. IF REQUIRED, PROVIDE NEW THERMOSTAT AND TEMPERATURE SENSOR COMPATIBLE WITH EXISTING RTU. CO-ORDINATE FINAL LOCATION OF T-SENSOR WITH ARCHITECT/OWNER.
 6. REPLACE FILTERS, IF REQUIRED. PROVIDE MERV-13 FILTER.
 7. CONTRACTOR SHALL VERIFY EXACT ELECTRICAL CONNECTIONS, WIRE SIZES, BREAKER, DISCONNECT ETC. PRIOR TO ORDERING AND BID.

VENTILATION CALCULATION							
ROOM NAME	AREA (SQ.FT.)	NUMBER OF PEOPLE/1000sq.ft AS PER SMC 2021	NUMBER OF PEOPLE AS PER SMC 2021	NO. OF PEOPLE	MIN OUTSIDE AIR AS PER SMC 2021	REQUIRED OUTDOOR AIR (CFM)	PROVIDED OUTDOOR AIR (CFM)
RETAIL AREA	575	15	9	9	7.5	0.12	137
MANAGER OFFICE	66	5	1	1	5	0.06	9
TOTAL	641	-	1	10	TOTAL	146	150

AIR TERMINAL DEVICES SCHEDULE						
TAG	MANUFACTURER	MODEL NO.	SIZE (IN)	DESCRIPTION	MAX. NOISE CRITERIA	REF. NOTE
SG-1(E)	S.A.E	S.A.E	S.A.E	S.A.E	S.A.E	1,2
SG-2(N)	TITUS (OR EQUIVALENT)	S300FL	12X6	ALUMINUM DIRECT SPIRAL DUCT MOUNTED DOUBLE DEFLECTION SUPPLY GRILLE	<35	1,2,3,4,5

NOTES FOR EXISTING :-
 1. S.A.E. - SAME AS EXISTING.
 2. CLEAN THE EXISTING DIFFUSERS; IF NOT IN GOOD CONDITION, REPLACE WITH SIMILAR KIND.

NOTES FOR NEW :-
 1. PROVIDE FRAME FOR MOUNTING AIR DEVICE IN LAY-IN GRID CEILING UNLESS REFLECTED CEILING PLAN INDICATES HARD CEILING. IN AREAS WITH HARD CEILING, PROVIDE FRAMES FOR SURFACE MOUNTING.
 2. UNLESS OTHERWISE NOTED, BRANCH DUCTS SERVING AIR DEVICES SHALL BE SAME SIZE AS NECK OF AIR DEVICE.
 3. COORDINATE FINAL COLOR/FINISH WITH ARCHITECT/OWNER.
 4. MAXIMUM NOISE CRITERION RATING < 35 DBA.
 5. FOR ROUND NECK DIFFUSERS; NECK SIZES SHALL BE:-
 15" DIA: 901-1100 CFM
 14" DIA: 601-900 CFM
 12" DIA: 376-600 CFM
 10" DIA: 226-375 CFM
 8" DIA: 101-225 CFM
 6" DIA: 0-100 CFM

AIR BALANCE TABLE					
UNIT	AREA SERVED	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	RETURN AIR (CFM)	EXHAUST AIR (CFM)
RTU-1(E)	SEE PLAN	1200	150	1050	0 CFM
TOTAL:		1200 CFM	150 CFM	1050 CFM	0 CFM
	BUILDING PRESSURE:		150 CFM	POSITIVE

NOTES:
 1. CONTRACTOR TO BALANCE OUTSIDE AIR & RETURN AIR DAMPER ON RTU-1(E) TO MATCH VALUES MENTIONED IN ABOVE TABLE.

CATBIRD

ISSUANCE NAME	DATE
CD SET	11/14/25
PERMIT SET/BID SET	12/22/25
1 IFC	01/20/26

LIGHTING PLAN LEGENDS	
	SWITCH TYPE (SUPERSCRIP IN UPPERCASE) 20A, 120V SPST WALL SWITCH (UON)
	SWITCH TAG (SUBSCRIPT IN LOWERCASE)
	WALL SWITCH WITH OCCUPANCY SENSOR
	WALL SWITCH WITH VACANCY SENSOR
	WALL SWITCH WITH TIMER
	WALL SWITCH WITH DIMMER & TIMER
	3 WAY WALL SWITCH (SPDT)
	4 WAY/INTERMEDIATE WALL SWITCH(DPDT)
	WALL SWITCH WITH SPEED REGULATOR
	MOTOR RATED WALL SWITCH
	THERMOSTAT WALL SWITCH
	MANUAL OVERRIDE WALL SWITCH
	PHOTOCELL WALL MOUNTED
	OCCUPANCY SENSOR WALL MOUNTED
	OCCUPANCY SENSOR CEILING MOUNTED
	VACANCY SENSOR CEILING MOUNTED
	DAY LIGHT SENSOR CEILING MOUNTED
	TIME CLOCK - DUAL CHANNEL
	LIGHTING CONTACTOR
	BUG EYE-EMERGENCY LIGHT WITH BATTERY
	ILLUMINATED EXIT SIGN
	ILLUMINATED DIRECTIONAL SIGN
	BUG EYE&EXIT SIGN COMBO WITH BATTERY

POWER AND COMMUNICATION PLAN LEGEND	
	WALL MOUNTED SIMPLEX RECEPTACLE.RATING SHALL BE SAME AS BREAKER OR AS NOTED
	20A, 120V WALL MOUNTED DUPLEX RECEPTACLE
	20A, 120V WALL MOUNTED RECEPTACLE WITH USB OUTLET
	20A, 120V WALL MOUNTED SWITCHED CONTROLLED DUPLEX RECEPTACLE
	20A, 120V WALL MOUNTED FULL SWITCHED DUPLEX RECEPTACLE WITH SWITCH
	20A, 120V WALL MOUNTED GFCI DUPLEX RECEPTACLE
	20A, 120V CEILING MOUNTED DUPLEX RECEPTACLE
	20A, 120V FLOOR MOUNTED DUPLEX RECEPTACLE
	20A, 120V WALL MOUNTED QUAD RECEPTACLE
	WALL MOUNTED SPECIAL RECEPTACLE.RATING SHALL BE SAME AS BREAKER OR AS NOTED
	DATA OUTLET - QUANTITY AS INDICATED
	TELEPHONE OUTLET - QUANTITY AS INDICATED
	DATA / TELEPHONE COMBINATION OUTLET - QUANTITY AS INDICATED
	DATA RACK + TELEPHONE DISTRIBUTION BOARD - AS REQUIRED
	CABLE TV OUTLET
	NON FUSED DISCONNECT SWITCH-RATING EQUAL TO OR MORE THAN BREAKER RATING
	FUSED DISCONNECT SWITCH - FUSE RATING AS NEEDED -

ELECTRICAL ABBREVIATIONS	
A	AMPERES
AF	AMPERE FRAME / AMP FUSE
AFF	ABOVE FINISHED FLOOR
AS	AMP SWITCH
AIC	AMPS INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
COMM	COMMUNICATION
CT	CURRENT TRANSFORMER
CU	COPPER
°C	DEGREE CELSIUS
CL	CURRENT LIMITER
DWG	DRAWING
DPS	DOUBLE POLE SINGLE THROW
DPDT	DOUBLE POLE DOUBLE THROW
E	EXISTING
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
ER	EXISTING TO BE RELOCATED
ETR	EXISTING TO REMAIN
EOR	ENGINEER OF RECORD
E.C.	ELECTRICAL CONTACTOR
FA	FIRE ALARM
G	GROUND
GFI	GROUND FAULT INTERRUPTER
G.C.	GENERAL CONTRACTOR
HD	HAND DRYER
HP	HORSEPOWER
HZ	HERTZ
IG	ISOLATED GROUND
IC	INTERRUPTING CAPACITY
JB	JUNCTION BOX
KCMIL	ONE THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT-AMPERES
KW	KILOWATTS
LP	LIGHTING PANEL
LL	LANDLORD
LTG	LIGHTING
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MIN	MINIMUM
MLO	MAIN LUGS ONLY
N	NEUTRAL
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
PP	POWER PANEL
PVC	POLYVINYL CHLORIDE
PWR	POWER
R	REMOVE
RE	RELOCATED EXISTING
RR	REMOVE & RELOCATE
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
TR	TAMPER RESISTANT
TYP	TYPICAL
USB	USB JACK
UON	UNLESS OTHERWISE NOTED
VA	VOLT AMPERE
VF	VERIFY IN FIELD
WP	WEATHER PROOF
W	WIRE / WATT
XMER	TRANSFORMER

ELECTRICAL SHEET GENERAL NOTES	
A.	CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR FAILURE TO DO SO.
B.	CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, TEST REPORTS, AND CERTIFICATIONS FOR TEMPORARY AND FINAL CERTIFICATE OF OCCUPANCY.
C.	FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER IN ORDER TO MAINTAIN FIRE RATINGS. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED WATERTIGHT.
D.	SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
E.	LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED. FURNISH FISH WIRE.
F.	VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
G.	CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
H.	ALL UNUSED MATERIALS AND DEBRIS SHALL BE LEGALLY REMOVED AND DISPOSED OF AWAY FROM THE PREMISES ON A DAILY BASIS.
I.	CONTRACTOR SHALL PATCH, PAINT, AND RESTORE EXISTING SURFACES DAMAGED DURING THE COURSE OF THIS CONSTRUCTION TO PRE-EXISTING CONDITIONS OR BETTER.
J.	MINIMUM SIZE OF CONDUIT SHALL BE 1/2", AND TYPE SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED. PROVIDE NYLON DRAG LINE AND CONDUIT CAP FOR ALL EMPTY CONDUITS.
K.	CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
L.	PULL AND JUNCTION BOXES WHERE INDICATED ON THE DRAWINGS. SHALL BE CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THEM AS FIELD CONDITIONS DICTATE. ADDITIONAL PULL AND JUNCTION BOXES NOT SHOWN ON DRAWINGS SHALL BE PROVIDED WHERE REQUIRED BY APPLICABLE CODE PROVISIONS OR WHERE CALLED FOR BY FIELD CONDITIONS. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN UNFINISHED AREAS AND INSTALLED IN CONCEALED IN FINISHED AREAS, AND ALL COVERS TO PULL & JUNCTION BOXES SHALL BE READILY ACCESSIBLE.
M.	SUPPORT PANEL, JUNCTION AND PULL BOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
N.	FOR EXACT LOCATION AND MOUNTING HEIGHT OF LIGHTING FIXTURES AND SWITCH/RECEPTACLE OUTLETS, REFER TO ARCHITECTURAL REFLECTED CEILING AND POWER PLANS.
O.	ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAIN-TIGHT INSTALLATION. ALL BUILDING EXTERIOR MOUNTED RECEPTACLES SHALL BE GFCI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
P.	ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
Q.	ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF NEW WORK WITH THE GENERAL CONTRACTOR AND OTHER ASSOCIATED TRADES IN A TIMELY MANNER. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL, DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
R.	ALL CONDUITS AND EQUIPMENT TO BE CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED. CONDUITS SHALL BE ENCASED IN THE CONCRETE FLOOR SLAB.
S.	ALL EQUIPMENT AND MATERIALS INSTALLED IN PLENUM CEILINGS SHALL BE APPROVED FOR THAT APPLICATION.
T.	OUTLET BOXES AND JUNCTION BOXES ON OPPOSITE SIDES OF FIRE-RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES, UNLESS FIRE-RATED BOXES OR PUTTY PADS ARE UTILIZED.
U.	COORDINATE ALL FLOOR PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. CONFIRM PENETRATION LOCATIONS WITH THE ENGINEER AND OWNER BEFORE INSTALLATION.
V.	COORDINATE THE MOUNTING HEIGHT AND LOCATION OF RACEWAYS, COMMUNICATIONS OUTLETS, AND RECEPTACLES WITH THE ARCHITECTURAL CASEWORK DRAWINGS AND DETAILS. COORDINATE LOCATIONS OF LIGHT FIXTURES, SWITCHES, AND RELATED DEVICES WITH THE ARCHITECTURAL DRAWINGS AND DETAILS.
W.	REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL LUMINARIES AND SWITCHES, AND FOR ALL FINISHED CEILING HEIGHTS.
X.	REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL ELECTRICAL DEVICES, AND FOR FINAL CEILING AND WALL HEIGHTS AND LAYOUTS.
Y.	LIGHTING FIXTURES PROVIDED WITH EMERGENCY BATTERY PACKS AND INDICATED WITH SWITCH CONTROL. SHALL BE WIRED WITH BATTERY CHARGING/SENSING CIRCUIT WIRED AHEAD OF SWITCH CONTROL.
Z.	NUMBER(S) SHOWN AT RECEPTACLES, JUNCTION BOXES AND EQUIPMENT INDICATES CIRCUIT NUMBERS IN PANEL BOARD. PROVIDE WIRE AND CONDUIT TO INTERCONNECT EQUIPMENT AND DEVICES WITH SAME CIRCUIT NUMBERS AND RUN TO PANEL BOARD.

ELECTRICAL SPECIFICATIONS	
1	GENERAL:
A.	THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.
B.	DRAWING ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN THEIR PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS, COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED, MAINTAIN HEADROOM AND SPACE CONDITIONS.
C.	BIDDERS, BEFORE SUBMITTING PROPOSALS, SHALL VISIT AND CAREFULLY EXAMINE THE AREA AFFECTED BY THIS WORK TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSIDERED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS, REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
D.	INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWING MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
E.	REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSAL.
F.	CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.
G.	DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.
H.	THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
I.	SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL, UNLESS OTHERWISE NOTED.
J.	PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT, PROVIDE EQUIPMENT CURBS AS REQUIRED.
K.	ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT OR APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
L.	THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS, WHEN SO DIRECTED. HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
M.	UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
N.	ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
O.	INSURANCE: PROVIDE IN ACCORDANCE WITH OWNER/BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
P.	THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATED OF INSPECTION AND APPROVAL.
2.	GENERAL PROVISIONS FOR ELECTRICAL WORK:
A.	DEFINITIONS:
1)	"PROVIDE": TO FURNISH, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
2)	"INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
3)	"FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
4)	"WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
5)	"WIRING": RACEWAY, FITTINGS, WIRE, BOXES, AND RELATED ITEMS.
6)	"CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FINISHED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
7)	"EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
8)	"SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
9)	TEMPORARY LIGHT AND POWER. PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING HOURS. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.
10)	QUALITY ASSURANCE
11)	QUALITY OF MATERIALS: ALL EQUIPMENT SHALL BE NEW SPECIFICATION GRADE, FREE FROM DEFECTS AND LISTED BY APPROVED TESTING AGENCY AND BEARING THEIR LABEL MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
12)	GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C.
13)	HEIGHTS OF OUTLETS: REFER TO ARCHITECTURAL AND/OR INTERIOR DESIGNER'S PLANS FOR DEVICE HEIGHTS IN NON BOH SPACES.
a.	FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR:
-	RECEPTACLES AND TELEPHONES: 1 FT-6 IN.
-	WALL SWITCHES: 4 FT-0 IN.
-	WALL FIXTURES: 7 FT-0 IN.
-	MOTOR CONTROLLERS: 5 FT-0 IN.
-	CLOCKS: 7 FT 6 IN
b.	EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED.
c.	REFER TO ARCHITECTURAL AND/OR INTERIOR DESIGNER'S PLANS FOR DEVICE HEIGHTS IN NON BOH SPACES.
D.	PRODUCT DELIVERY, STORAGE AND HANDLING
a.	MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.
b.	ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.
E.	MATERIALS
1)	NAMEPLATES: PROVIDE BLACK LAMACOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT.
2)	CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT ORIGIN AND TERMINATION OF THE CIRCUIT.
3)	INSERTS AND SUPPORTS:
a.	INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.
-	SINGLE ROD: SIMILAR TO GRINNELL FIG. 281.
-	MULTI-ROD: SIMILAR TO FEE AND MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS.
-	CLIP FORM NAILS FLUSH WITH INSERTS.
-	MAXIMUM LOADING 75 PERCENT OF RATING.
b.	SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES IN CONCRETE FILL ONLY, CANTILEVER BRACKETS OR OTHER MEANS, SUBMIT FOR REVIEW.
c.	GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS.
d.	WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING. SUBMIT FOR REVIEW.
F.	SUBMIT ELECTRICAL POWER SYSTEM STUDIES INCLUDING SUPPORTING DATA AND RECOMMENDATIONS FOR THE FOLLOWING:
1)	SHORT CIRCUIT CURRENT AND PROTECTIVE DEVICE COMBINATION.
2)	ARC FLASH HAZARD ANALYSIS.
	EQUIPMENT SHOP DRAWINGS SHALL NOT BE SUBMITTED UNTIL THESE STUDIES HAVE BEEN COMPLETED.
G.	PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION, UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.
H.	BRUSH AND CLEAN WORK PRIOR TO CONCEALING. PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED, CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.
I.	FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.
J.	ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

ANNOTATION	
TO A#1 VIA LC#1 AND SA#5B	CONNECT THE HOME RUN TO CIRCUIT BREAKER #1 OF THE ELECTRICAL PANEL "A" VIA LIGHTING CONTACTOR (LC) #1 AND SWITCH(S) "a" WHICH IS LOCATED IN THE SWITCH BANK "5B"

APPLICABLE CODES	
ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS CODES APPLICABLE TO THIS PROJECT:	
A.	2023 SEATTLE ELECTRICAL CODE
B.	2021 INTERNATIONAL ENERGY CONSERVATION CODE

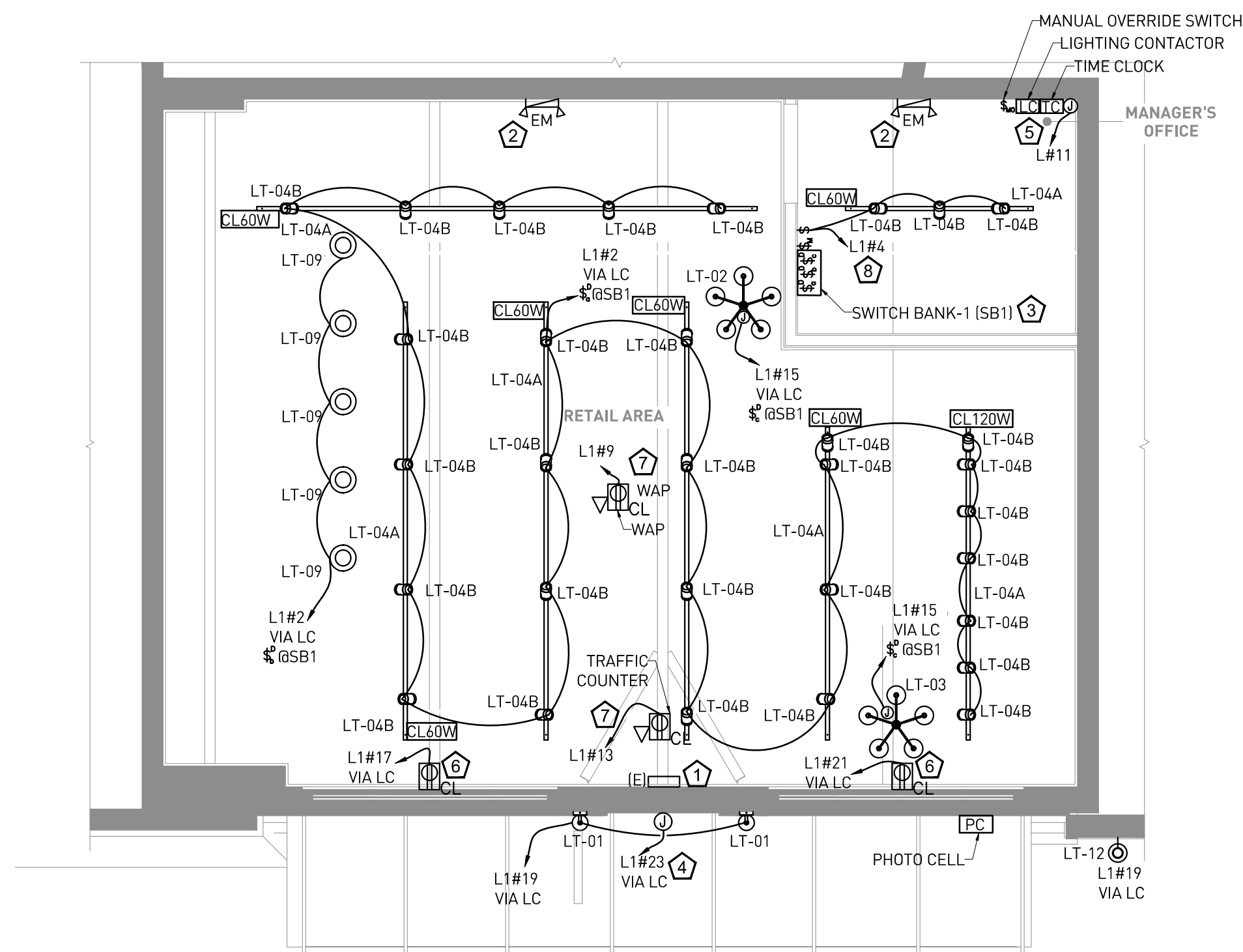
ELECTRICAL DRAWING LIST	
E0.01	ELECTRICAL LEGENDS, ABBREVIATIONS & NOTES
E0.02	ELECTRICAL SPECIFICATION SHEET
E1.01	ELECTRICAL LIGHTING AND POWER PLAN
E2.01	ELECTRICAL RISER DIAGRAM & PANEL SCHEDULE

CATBIRD

ISSUANCE NAME	DATE
CD SET	11/14/25
PERMIT SET/BID SET	12/22/25
1 IFC	01/20/26

ELECTRICAL SYMBOL ABBREVIATIONS, NOTES

E1.01



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

LIGHT FIXTURE SCHEDULE							
TAG	QTY	FIXTURE DETAIL	MAKE	MODEL	LOAD IN VA	DIMMABLE	NOTES
LT-01	2	LED OUTDOOR WALL SCENCE	WESTINGHOUSE	6121400	60W	YES	2
LT-02	1	DECORATIVE "FOUND OBJECT" PENDANT (BY OWNER)	TBD	TBD	50W	-	1,2
LT-03	1	DECORATIVE "FOUND OBJECT" PENDANT (BY OWNER)	TBD	TBD	50W	-	1,2
LT-04A	7	ONE-CIRCUIT TRACK	GES GLOBAL TRACK	AMERLUX	-	-	-
LT-04B	31	LED TRACK HEAD	LIGHTOLIER	SPEQ-S-A17-9-WT-TN1-120-WF-309-LE/TE-SOL	9W	YES	3
LT-09	5	LED PENDANT GLOBE LIGHT	HINKLEY LIGHTING	WARBY 3747HBWH	100W	YES	2
LT-12	1	TBD	TBD	TBD	20W	-	1,2
EM	-	EMERGENCY LIGHT FIXTURE	TBD	TBD	-	-	1,4
E	-	EXISTING EXIT SIGN	TBD	TBD	-	-	4

NOTES:
 1- COORDINATE EXACT MAKE/MODEL NUMBER WITH THE OWNER/ARCHITECT.
 2- THE LIGHTING FIXTURE MAXIMUM WATTAGE HAS BEEN ASSUMED FOR THE COMCHECK AND LOAD CALCULATION PURPOSES ONLY. COORDINATE FINAL SELECTION BY ARCHITECT.
 3- COORDINATE REQUIREMENT OF THE CURRENT LIMITER WITH THE VENDOR AND PROVIDE AS NEEDED.
 4- THE LIGHT FIXTURE SHALL HAVE MINIMUM OF 90 MINUTES OF BATTERY BACKUP.

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

- ALL NEW LIGHTING FIXTURES SHOWN ON THE LIGHTING FIXTURES SCHEDULE ARE SUBJECT TO THE ARCHITECT'S APPROVAL. E.C. SHALL COORDINATE MAKE, MODEL, FINISHES, AND OTHER CRITICAL PARAMETERS WITH THE ARCHITECT BEFORE PURCHASING.
- THE ADDITIONAL ACCESSORIES (HOLDERS, TRACKS, ADAPTERS, DRIVERS, AND CURRENT LIMITERS) REQUIRED FOR THE PROPER WORKING OF THE LIGHTING FIXTURES SHALL BE PURCHASED SEPARATELY IF NOT PROVIDED ALONG WITH THE FIXTURES.
- ALL LIGHTING FIXTURES SHALL BE LED-TYPE OPERABLE AT 120V.
- ALL EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL HAVE A MINIMUM OF 90 MINUTES OF BATTERY BACKUP OR AS REQUIRED BY AHJ.
- WATTS PER FACE FOR EXIT SIGNS SHALL NOT EXCEED 5 WATTS.

LIGHTING CONTROL SCHEDULE						
CIRCUIT #	AUTO. CONTROL	SWITCH#	SWITCH TYPE	FIXTURE NAME	LOAD IN VA	SWITCH BANK#
L1#2	(Time Clock)TC	\$a	Dimmable	Track Light	252	SB1
L1#2	(Time Clock)TC	\$b	Dimmable	Globe Pendant	500	SB1
L1#15	(Time Clock)TC	\$c	Dimmable	Found Object Pendant	100	SB1
L1#4	Manual	\$	Regular	Track Light	27	
L1#8, 10, 20, 22	Manual	\$M	Master switch	Millwork switched receptacle Light	3950	Office

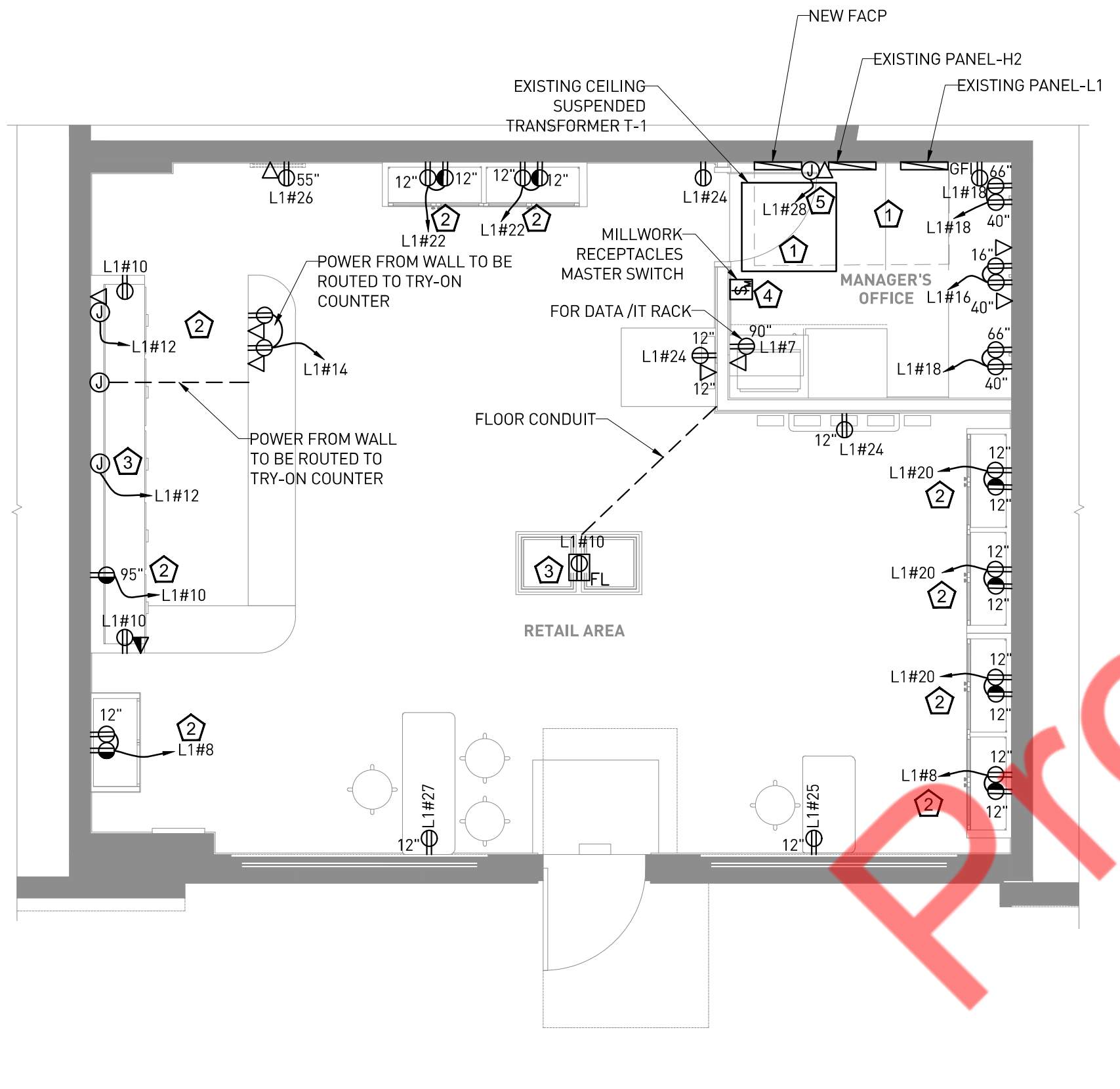
NOTES:
 1- COORDINATE EXACT LOADING CAPACITY OF THE SWITCH AND SENSOR WITH THE VENDOR.
 2- NUMBER OF SENSOR AND SWITCHES REQUIRED MAY VARY BASED ON THE LOADING CAPACITY OF THE SENSOR AND
 3- COORDINATE EXACT CONTROL & WIRING CONFIGURATION WITH VENDOR.

ELECTRICAL LIGHTING PLAN GENERAL NOTES:

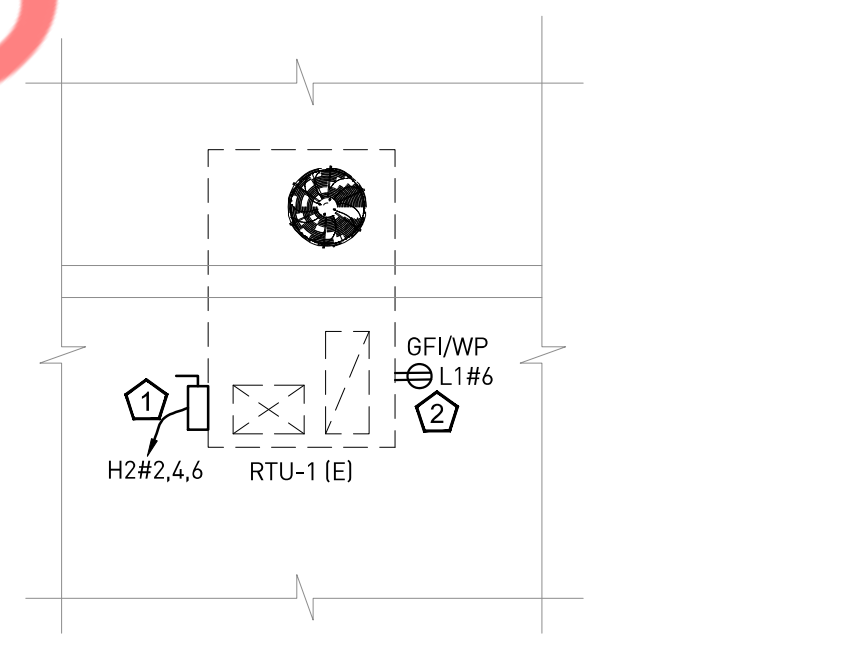
- ALL LIGHT FIXTURES NOT ON THE OCCUPANCY SENSOR/OTHER AUTOMATIC CONTROL SHALL BE CONTROLLED BY TIMER-CONTROLLED LIGHTING CONTACTOR(S), UON.
- REFER TO THE LIGHTING CONTACTOR DETAIL FOR TYPICAL CONNECTION OF THE TIME CLOCK, MANUAL OVERRIDE SWITCH, CONTACTORS AND PHOTOCELL.
- CONNECT THE EMERGENCY LIGHTING, EXIT SIGNS, OR EXIT SIGN AND BUG-EYE COMBO TO THE NEAREST LIGHTING CIRCUIT AHEAD OF SWITCHING, UON.
- EMERGENCY LIGHT FIXTURES (BUG EYES) SHALL TURN ON DURING POWER FAILURE WHEREAS ALL EXIT SIGNS SHALL BE PERMANENTLY ON. E.C. TO WIRE THE FIXTURE ACCORDINGLY.
- LIGHTING CONTROL (SENSORS AND SWITCHES) SHALL BE RATED FOR LINE VOLTAGE (UON); ELSE PROVIDE POWER BASE.
- THE PROPOSED LOCATION OF THE SWITCHES AND SENSORS IS SHOWN ON THE PLAN. FOR CONTROLS WITH DIFFERENT CAPABILITIES, THE CONTRACTOR SHALL ADJUST THE QUANTITY, LOCATION, AND MOUNTING HEIGHT ACCORDINGLY.
- COORDINATE THE EXACT LOCATION, POWER REQUIREMENT & CONNECTION TYPE OF THE CCTV, SPEAKERS AND FIRE ALARM SENSOR IN THE FIELD. PROVIDE POWER PROVISION AS NEEDED IN COORDINATION WITH THE LV VENDOR.
- PHOTOCELL AND PROGRAMMABLE TIME-CLOCK SHALL CONTROL EXTERIOR SIGNAGE, STOREFRONT LIGHTING, AND SHOW-WINDOW LIGHTING AS APPLICABLE. COORDINATE FINAL CONTROL LOCATIONS AND CONNECTIONS WITH ARCHITECT/OWNER. REFER TO SHEET E-3.01 FOR CONTROL DETAILS.

ELECTRICAL LIGHTING PLAN KEY NOTES:

- EXISTING LIGHTING FIXTURES ALONG WITH THEIR CIRCUITS AND CONTROLS SHALL REMAIN. E.C. TO VERIFY OPERABLE CONDITIONS IN THE FIELD. REPLACE IF FOUND INOPERABLE.
- ALL NEW OR EXISTING EMERGENCY/EXIT SIGN CONNECT TO THE NEAREST LIGHTING CIRCUIT AHEAD OF SWITCHING, UON.
- E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF SWITCH BANK-1 (SB1) IN THE FIELD.
- E.C. SHALL VERIFY AVAILABILITY OF SIGNAGE JUNCTION BOX/DISCONNECT IN THE FIELD. ELSE PROVIDE NEW AS INDICATED IN COORDINATION WITH ARCHITECT/SIGNAGE VENDOR.
- COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF TIME CLOCK, LIGHTING CONTACTOR & MANUAL OVERRIDE SWITCH IN THE FIELD.
- E.C. SHALL COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF SHOW WINDOW RECEPTACLE. PROVIDE IN ACCORDANCE WITH ELECTRICAL CODE 210.62.
- COORDINATE REQUIREMENTS FOR THE TRAFFIC COUNTER & WIRELESS ACCESS POINT (WAP) WITH ARCHITECT. COORDINATE EXACT LOCATION & POWER REQUIREMENT WITH ARCHITECT/VENDOR. PROVIDE ACCORDINGLY.
- LIGHTING NEAR ELECTRICAL PANELS SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL BE COMPLIED AS PER ELECTRICAL CODE 110.26(D).



ELECTRICAL POWER PLAN | 2
1/4" = 1'-0"



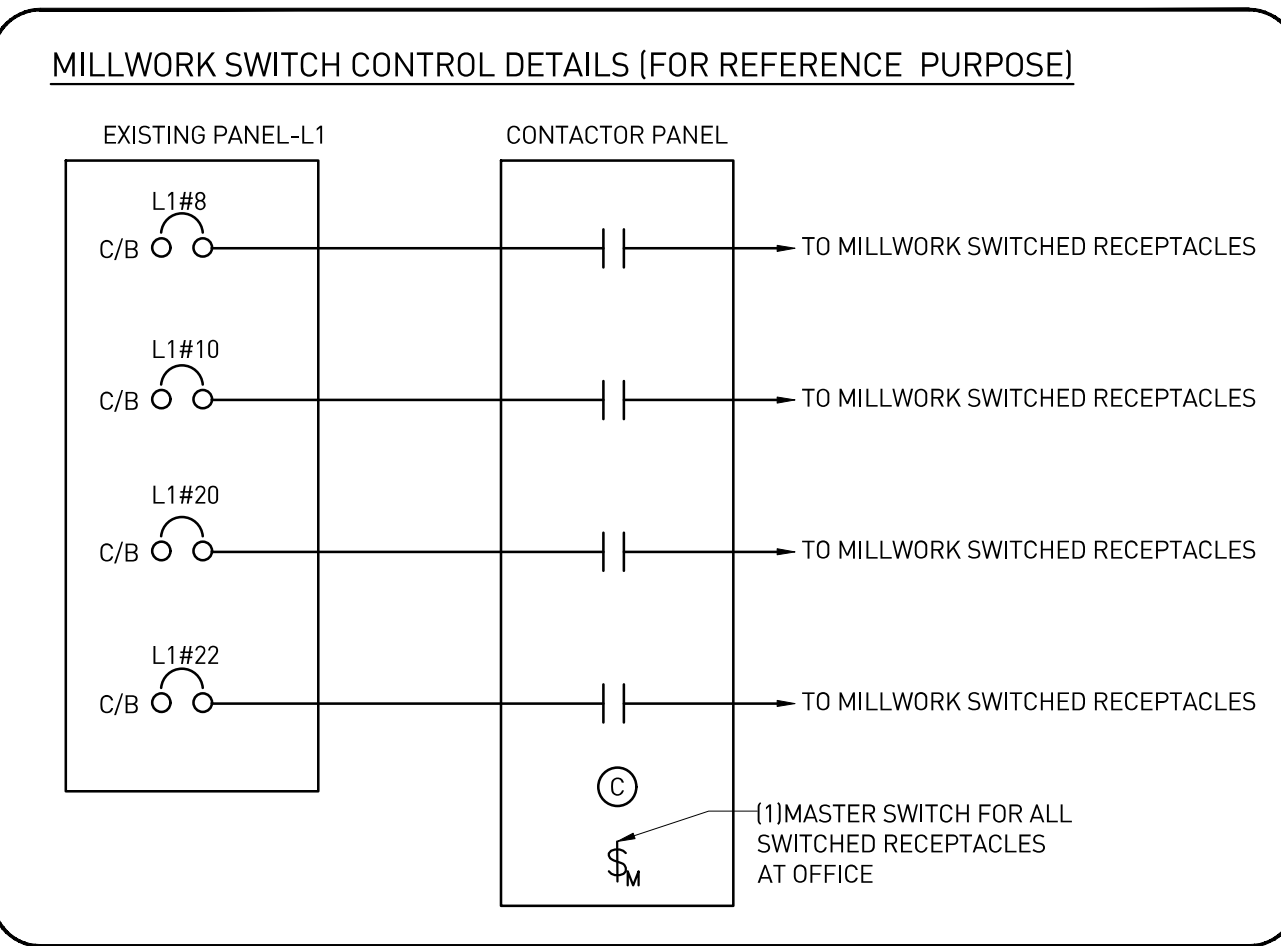
ELECTRICAL ROOF POWER PLAN | 3
1/4" = 1'-0"

ELECTRICAL ROOF POWER PLAN GENERAL NOTES:

- ALL THE ELECTRICAL ELEMENTS, VIZ., CONDUITS, WIRING, AND DISCONNECT SWITCHES, SHALL BE RATED FOR EXTERIOR USE.
- THE DISCONNECT SWITCHES FOR THE BRANCH CIRCUIT SHOWN ON THE PLAN SHALL BE RATED EQUAL TO OR HIGHER THAN THE BREAKER RATING. REFER TO BREAKER RATING IN THE PANEL SCHEDULE AND PROVIDE DISCONNECT AS NEEDED.
- GFI MARKED ON THE PLAN INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE A GFI BREAKER IN THE PANEL FOR THE INDICATED CIRCUIT IF EITHER THE RECEPTACLE IS NOT AVAILABLE OR NOT ACCESSIBLE.

ELECTRICAL ROOF POWER PLAN KEY NOTES:

- EXISTING (E) MECHANICAL UNITS SHALL REMAIN CONNECTED TO THE EXISTING CIRCUIT. E.C. TO VERIFY THE OPERABLE CONDITION OF THE ELECTRICAL CIRCUIT AND CONTROLS IN THE FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- E.C. SHALL VERIFY THE AVAILABILITY AND OPERATING CONDITION OF THE EXISTING SERVICE RECEPTACLE ON THE ROOF. IF NOT FOUND OR FOUND INOPERABLE, PROVIDE A NEW RECEPTACLE AS SHOWN ON THE DRAWINGS.



ELECTRICAL POWER PLAN GENERAL NOTES:

- THE ARCHITECTURAL PLAN SHALL TAKE PRECEDENCE OVER THE ELECTRICAL DRAWING FOR EQUIPMENT LOCATION AND MOUNTING. THE LOCATION OF ALL ELECTRICAL EQUIPMENT NOT PROVIDED IN THE ARCHITECTURAL PLAN SHALL BE VERIFIED WITH THE ARCHITECT/OWNER BEFORE BID.
- POWER AND LOCATION OF ALL THE MECHANICAL AND PLUMBING UNITS SHALL BE COORDINATED WITH THE RESPECTIVE CONTRACTORS BEFORE BID.
- ELECTRICAL OUTLETS AND DEVICES LOCATED IN DEMISING WALLS TO HAVE FIRE PUTTY AROUND THE BOX TO MAINTAIN PARTITION FIRE RATING.
- THE DISCONNECT SWITCHES FOR THE BRANCH CIRCUIT SHOWN ON THE PLAN SHALL BE RATED EQUAL TO OR HIGHER THAN THE BREAKER RATING. REFER TO BREAKER RATING IN THE PANEL SCHEDULE AND PROVIDE DISCONNECT AS NEEDED.
- ALL 125V-250V RECEPTACLES SUPPLIED BY SINGLE-PHASE CIRCUITS RATED 150V OR LESS TO GROUND, 50A OR LESS, AND ALL RECEPTACLES SUPPLIED BY THREE-PHASE BRANCH CIRCUITS RATED 150V OR LESS TO GROUND, 100A OR LESS INSTALLED IN THE LOCATIONS SPECIFIED IN ELECTRICAL CODE 210.8(B)(1) THROUGH (12) SHALL HAVE GFCI PROTECTION.
- GFI MARKED ON THE PLAN INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE A GFI RECEPTACLE DISCONNECT IN THE READILY ACCESSIBLE LOCATION. PROVIDE A GFI BREAKER IN THE PANEL IF EITHER THE RECEPTACLE IS NOT AVAILABLE OR NOT ACCESSIBLE WHEN INSTALLED IN THE DESIRED LOCATION.
- COORDINATE THE EXACT LOCATION AND ELECTRICAL CONNECTION REQUIREMENTS OF THE DUCT SMOKE DETECTORS, FIRE DAMPERS, FIRE SMOKE DAMPERS, MOTORIZED DAMPERS, AND THERMOSTATS IN THE FIELD WITH THE MECHANICAL DRAWING. PROVIDE WIRING AS REQUIRED.
- ALL RECEPTACLE MOUNTING HEIGHTS SHALL BE COORDINATED WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION.
- COORDINATE WITH ARCHITECT/OWNER FOR REQUIREMENTS OF POWER INSIDE CABINETS PROVIDE JUNCTION BOX & WHIP AS NEEDED.

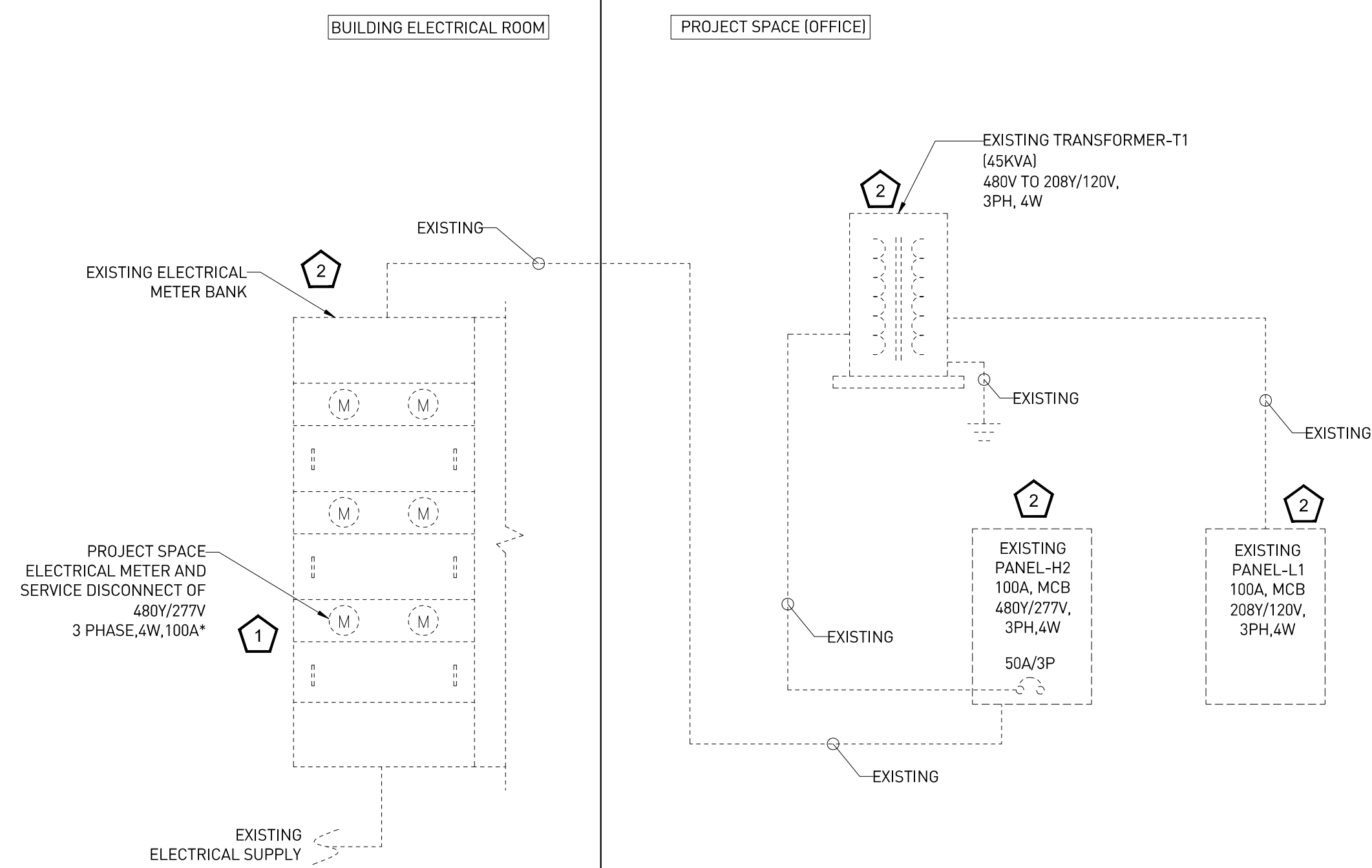
ELECTRICAL POWER PLAN KEY NOTES:

- COORDINATE THE EXACT LOCATION OF ALL THE ELECTRICAL SWITCHGEARS SHOWN ON THE PLAN, AND ENSURE THE CLEAR WORKING AND DEDICATED SPACE HAS BEEN PROVIDED AS PER NEC 110.26.
- HALF-SHADED RECEPTACLE INDICATES SWITCH-CONTROLLED RECEPTACLE. E.C. SHALL COORDINATE WITH ARCHITECT/EQUIPMENT VENDOR FOR EXACT POWER AND CONTROL REQUIREMENTS AND PROVIDE CONNECTIONS AS REQUIRED.
- COORDINATE WITH ARCHITECT FOR EXACT REQUIREMENT & LOCATION PROVIDE POWER & CONTROL AS REQUIRED.
- PROVIDE ONE MASTER SWITCH TO CONTROL ALL MILLWORK SWITCHED RECEPTACLES. COORDINATE WITH EQUIPMENT VENDOR FOR FINAL WIRING CONFIGURATION AND SWITCH RATING. PROVIDE AND INSTALL ACCORDINGLY. DIAGRAM SHOWN FOR REFERENCE ONLY.
- E.C. SHALL COORDINATE WITH FA VENDOR FOR EXACT CONNECTION & POWER REQUIREMENT FOR FACP. PROVIDE ACCORDINGLY.

CATBIRD

ISSUANCE NAME	DATE
CD SET	11/14/25
PERMIT SET/BID SET	12/22/25
1 IFC	01/20/26

ELECTRICAL RISER DIAGRAM



FLOOR LEVEL

ELECTRICAL RISER DIAGRAM GENERAL NOTES :

- VERIFY/COORDINATE THE EXACT POWER DISTRIBUTION AND SCOPE OF WORK WITH THE LANDLORD/OWNER BEFORE BID.
- ENSURE THE COMBINED VOLTAGE DROP OF THE FEEDER AND BRANCH CIRCUIT IS NOT MORE THAN THE 5% PER CODE.
- ENSURE THAT THE CLEAR WORKING AND DEDICATED SPACE HAS BEEN PROVIDED FOR THE EQUIPMENT AS PER ELECTRICAL CODE 110.26.
- REUSE OF THE EXISTING EQUIPMENT IS SUBJECT TO THE VERIFICATION OF THE AVAILABILITY, LOCATION, RATING, OPERABLE CONDITION, AND FAULT CURRENT IN THE FIELD. REPLACE THE EXISTING EQUIPMENT WITH THE EQUIPMENT OF SAME RATING, IF THE EXISTING EQUIPMENT CAN NOT BE REUSED DUE TO ANY OF THE REASONS MENTIONED EARLIER.
- ADDITION OR ALTERATION TO THE EXISTING SYSTEM SHALL NOT BE DONE WITHOUT THE WRITTEN CONSENT OF THE OWNER. THE VOLTAGE AND FREQUENCY FLUCTUATION IN THE ELECTRICAL UTILITY SERVICE AT THE SERVICE ENTRY SHALL NOT BE MORE THAN +/- 5% AND +/- 1%, RESPECTIVELY. PROVIDE THE REGULATORS IF SUCH CASE IS OBSERVED.
- E.C. TO VERIFY THE AVAILABILITY OF THE EXISTING METER AND SERVICE DISCONNECT DEDICATED TO THE PROJECT SPACE. VERIFY THE LOCATION, RATING, AND OPERABLE CONDITION IN THE FIELD. OTHERWISE, PROVIDE NEW IF REQUIRED. INFORM EOR OF ANY DISCREPANCY BEFORE THE BID.
- THE PART OF RISER MARKED AS EXISTING IS FOR REFERENCE PURPOSES ONLY. E.C. SHALL VERIFY THE AVAILABILITY, LOCATION, RATING, OPERABLE CONDITION AND EXACT POWER FLOW IN FIELD. INFORM EOR OF ANY DISCREPANCY BEFORE BID.

ELECTRICAL RISER DIAGRAM KEY NOTES :

- EXISTING 100A, 480Y/277V, 3PH, 4W ELECTRICAL SERVICE FOR THE PROJECT SPACE TO REMAIN. VERIFY LOCATION, RATING, AND OPERABLE CONDITION IN THE FIELD. INFORM THE ENGINEER OF THE RECORD OF ANY DISCREPANCY, BEFORE BID.
- E.C. SHALL VERIFY THE EXACT LOCATION, RATING, AND OPERABLE CONDITION OF EVERY PIECE OF EQUIPMENT MARKED AS EXISTING IN THE FIELD. INFORM THE ENGINEER OF THE RECORD OF ANY DISCREPANCY BEFORE BIDDING.

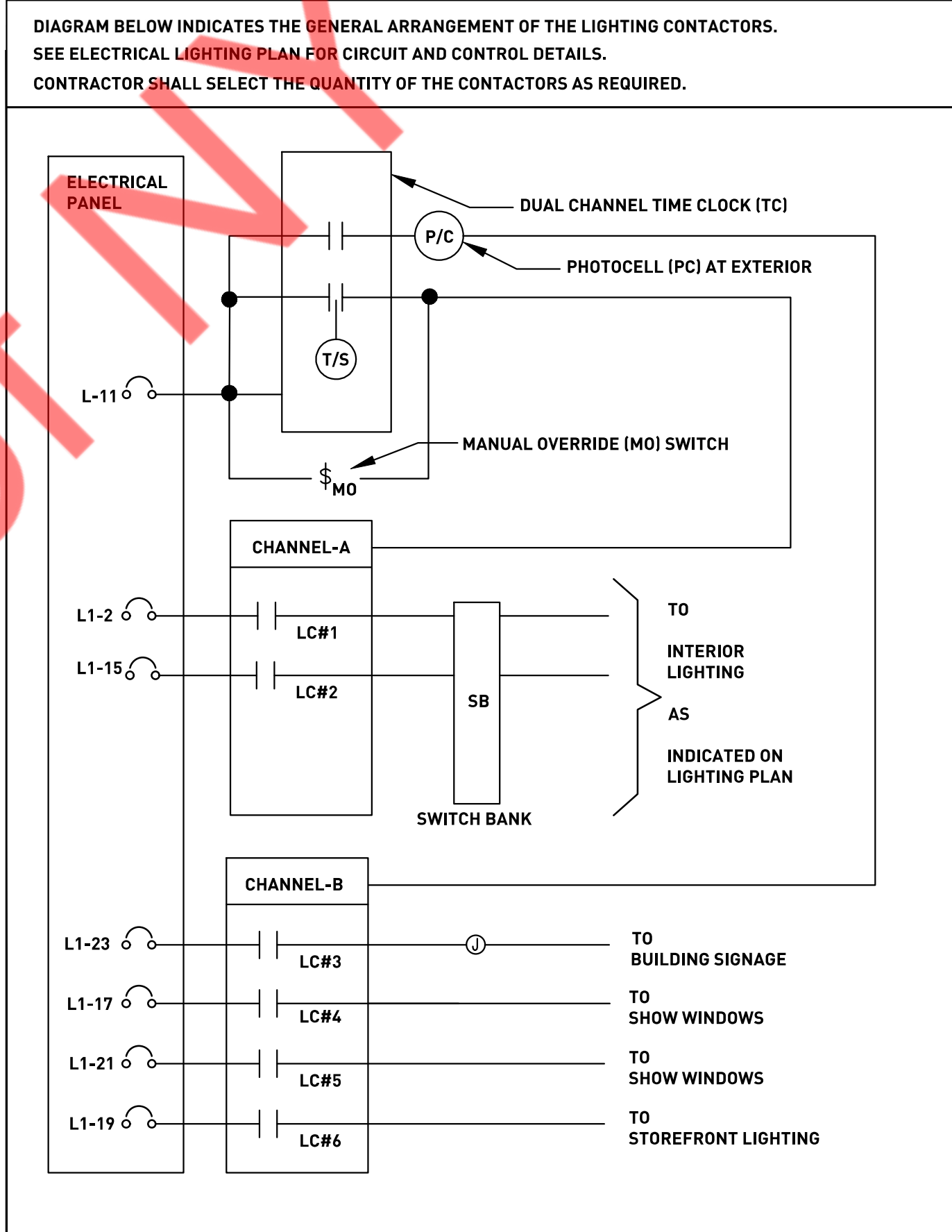
ELECTRICAL PANEL SCHEDULE GENERAL NOTES :

- THE ELECTRICAL LOAD SHALL BE BALANCED WITHIN 10% FOR ALL 3 PHASES.
- THE VOLTAGE DROP FOR THE BRANCH CIRCUIT SHALL NOT EXCEED 3% AND 5% IN COMBINATION WITH THE FEEDER CIRCUIT PER 210.19A NOTE 3.
- ALL CIRCUITS MARKED AS EXISTING TO REMAIN ARE SUPPOSED TO REMAIN CONNECTED AS IS. SOME EXISTING CIRCUIT HAVE BEEN SHOWN AS EXISTING AT DIFFERENT LOCATION DUE TO LACK OF INFORMATION. E.C. SHALL ADJUST THE NEW CIRCUITS ACCORDINGLY AND KEEP THE EXISTING CIRCUIT INTACT.
- THE CONTRACTOR IS TO PROVIDE A CIRCUIT DIRECTORY FOR EACH PANEL BOARD AS PER 408.4 (A).
- THE BREAKER FEEDING HVAC UNITS SHALL BE HACR TYPE.
- REFER TO THE BRANCH CIRCUIT WIRING CHART FOR WIRE SIZES. THE WIRE SIZES HAVE BEEN SELECTED BASED ON THE 75-DEGREE COLUMN OF ELECTRICAL CODE 310.15 B 16 FOR COPPER CONDUCTOR. THE WIRE SIZE MIGHT CHANGE IF THE TEMPERATURE, MATERIAL, OR VOLTAGE DROP IS DIFFERENT. E.C. SHALL SIZE THE BRANCH CIRCUIT ACCORDINGLY.
- GFI MARKED ON THE PLAN INDICATES THAT THE CIRCUIT SHALL BE GFI PROTECTED. E.C. SHALL PROVIDE A GFCI BREAKER IN THE PANEL FOR THE INDICATED CIRCUIT IF EITHER THE RECEPTACLE IS NOT AVAILABLE OR NOT READILY ACCESSIBLE.
- THE CONTRACTOR SHALL MODIFY THE BREAKERS OF THE EXISTING PANEL (WHEREVER REQUIRED) TO BE IN LINE WITH THE PANEL SCHEDULE PROVIDED IN THE ELECTRICAL DRAWING.
- REPAIR OR REPLACE ANY MISSING OR DAMAGED COMPONENTS ON THE EXISTING PANEL TO MAKE THE PANEL FULLY FUNCTIONAL.

ELECTRICAL PANEL SCHEDULE

PANEL: H2 (EXISTING)		3 PHASE		- - -		DEMAND LOAD (in kVA)		24.80		MOUNTING: RECESSED				
480Y/277	VOLTS	3	PHASE	-	-	-	DEMAND LOAD (in kVA)	24.80		PANEL LOCATION: MANAGER OFFICE				
100	AMPS	4	WIRE	-	-	-	DEMAND CURRENT (in Amps)	29.87		FED FROM: ELECTRICAL METER				
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	NOTES	PER PHASE (KVA)			NOTES	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1						8.27				3.05	H			2
3	50/3P	TRANSFORMER (45KVA)	X	5.22	ETR, VIF		8.27		SAE, VIF	3.05	H	RTU-1(E)	15/3P	4
5			X	5.22				8.27		3.05	H			6
7		SPACE				0.00						SPACE		8
9		SPACE				0.00						SPACE		10
11		SPACE				0.00		0.00				SPACE		12
13		SPACE				0.00						SPACE		14
15	100/3P	MAIN BREAKER				0.00		0.00				SPACE		16
17								0.00				SPACE		18
						8.27	8.27	8.27						

PANEL: L1 (EXISTING)		3 PHASE		- - -		DEMAND LOAD (in kVA)		15.66		MOUNTING: RECESSED				
208Y/120	VOLTS	3	PHASE	-	-	-	DEMAND LOAD (in kVA)	15.66		PANEL LOCATION: MANAGER'S OFFICE				
100	AMPS	4	WIRE	-	-	-	DEMAND CURRENT (in Amps)	43.52		FED FROM: PANEL-H2 VIA X'MER				
CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	NOTES	PER PHASE (KVA)			NOTES	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
						A	B	C						
1						0.28			RWC	0.28	L	INTERIOR LIGHTING	20/1P	2
3	100/3P	SUB FEED MAIN BREAKER				0.27			RWC	0.27	L	INTERIOR LIGHTING	20/1P	4
5							0.18		RWC	0.18	R	ROOF SERVICE RECEPTACLE	20/1P	6
7	20/1P	DATA/IT RACK	R	0.18	RWC	0.90			RWC	0.72	L	RETAIL AREA RECEPTACLES	20/1P	8
9	20/1P	WAP RECEPTACLES	R	0.10	RWC	0.82			RWC	0.72	L	RETAIL AREA RECEPTACLES	20/1P	10
11	20/1P	TIME CLOCK	O	0.50	RWC		0.86		RWC	0.36	R	RETAIL AREA JUNCTION BOX	20/1P	12
13	20/1P	TRAFFIC COUNTER	R	0.36	RWC	0.72			RWC,NBEP	0.36	R	RETAIL AREA POS RECEPTACLES	20/1P	14
15	20/1P	INTERIOR LIGHTING	L	0.20	RWC		0.56		RWC,NBEP	0.36	R	MANAGER OFFICE RECEPTACLES	20/1P	16
17	20/1P	SHOW WINDOW RECEPTACLE	L	1.50	RWC			2.40	RWC,NBEP	0.90	R	MANAGER OFFICE,SERVICE RECEPTACLES	20/1P	18
19	20/1P	EXTERIOR LIGHTING	L	0.10	RWC	1.18			RWC,NBEP	1.08	L	RETAIL AREA RECEPTACLES	20/1P	20
21	20/1P	SHOW WINDOW RECEPTACLE	L	1.50	RWC		2.22		RWC,NBEP	0.72	L	RETAIL AREA RECEPTACLES	20/1P	22
23	20/1P	BUILDING SIGN	L	1.20	RWC			1.74	RWC,NBEP	0.54	R	RETAIL AREA RECEPTACLES	20/1P	24
25	20/1P	WELDING STATION RECEPTACLE	R	0.18	RWC, NBEP	0.36			RWC,NBEP	0.18	R	TOUCHSCREEN DISPLAY RECEPTACLE	20/1P	26
27	20/1P	WELDING STATION RECEPTACLE	R	1.00	RWC, NBEP		1.10		RWC,NBEP,LO	0.10	O	FACP	20/1P	28
29		SPACE						0.00				SPACE		30
						3.44	4.97	5.18						



LIGHTING CONTACTORS DETAIL (TYPICAL) | 1

SCALE = N.T.S.

PANEL SCHEDULE ABBREVIATIONS AND NOTES	
TAG	DESCRIPTION
L	LIGHTING
R	RECEPTACLE
H	HVAC
E	ELECTRICAL EQUIPMENT
M	LARGEST MOTOR
O	OTHER
N	NON COINCIDENT
X	LINKED CELL
*	VERIFY/COORDINATE IN FIELD
RWC	REFER TO THE WIRING CHART FOR WIRE SIZE
RRF	REFER RISER FOR FEEDER SIZE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
AFCI	ARC FAULT CIRCUIT INTERRUPTER
NBEP	NEW BREAKER IN THE EXISTING PANEL
HACR	HEAT AIR CONDITIONING AND REFRIGERATION
PAN	PROVIDE ADDITIONAL WIRE FOR NEUTRAL
LO	LOCKOUT BREAKER
STB	SHUNT TRIP BREAKER
SB	SPLIT BREAKER
ETR	EXISTING TO REMAIN
SAE	SAME AS EXISTING
VIF	VERIFY IN FIELD
LC	WIRE THROUGH LIGHTING CONTACTOR
NCL	NON COINCIDENT LOAD
DFB	DUAL FUNCTION BREAKER (AFCI+GFCI)
CB	COMBINATION BREAKER (S/P)

BRANCH CIRCUIT WIRING CHART

BREAKER	BRANCH CIRCUIT SIZE
15/1P	2#12 + 1#12G, 3/4" C
20/1P	2#12 + 1#12G, 3/4" C
25/1P	2#10 + 1#10G, 3/4" C
30/1P	2#10 + 1#10G, 3/4" C
15/2P	2#12 + 1#12G, 3/4" C
20/2P	2#12 + 1#12G, 3/4" C
25/2P	2#10 + 1#10G, 3/4" C
30/2P	2#10 + 1#10G, 3/4" C
35/2P	2#8 + 1#10G, 3/4" C
40/2P	2#8 + 1#10G, 3/4" C
45/2P	2#8 + 1#10G, 3/4" C
50/2P	2#8 + 1#10G, 3/4" C
60/2P	2#6 + 1#10G, 3/4" C
70/2P	2#4 + 1#8G, 1" C
80/2P	2#4 + 1#8G, 1" C
15/3P	3#12 + 1#12G, 3/4" C
20/3P	3#12 + 1#12G, 3/4" C
25/3P	3#10 + 1#10G, 3/4" C
30/3P	3#10 + 1#10G, 3/4" C
35/3P	3#8 + 1#10G, 3/4" C
40/3P	3#8 + 1#10G, 3/4" C
45/3P	3#8 + 1#10G, 3/4" C
50/3P	3#8 + 1#10G, 3/4" C
60/3P	3#6 + 1#10G, 3/4" C
70/3P	3#4 + 1#8G, 1" C
80/3P	3#4 + 1#8G, 1" C
90/3P	3#3 + 1#8G, 1" C
100/3P	3#3 + 1#8G, 1" C
110/3P	3#1 + 1#6G, 1 1/4" C
125/3P	3#1 + 1#6G, 1 1/4" C
150/3P	3#1/0 + 1#6G, 1 1/4" C
175/3P	3#2/0 + 1#6G, 1 1/2" C
200/3P	3#3/0 + 1#6G, 1 1/2" C

CATBIRD

ISSUANCE NAME	DATE
CD SET	11/14/25
PERMIT SET/BID SET	12/22/25
1 IFC	01/20/26

ELECTRICAL RISER DIAGRAM & PANEL SCHEDULE

E3.01