MECHANICAL SYMBOLS LIST

AC-1 / TXF-1	EQUIPMENT SYMBOL
XX / X	RISER SYMBOL
AIR DEVICES	
	CEILING DIFFUSER SUPPLY
	CEILING DIFFUSER RETURN/EXHAUST
DUCT ACCESSORIES	
VD VD	VOLUME DAMPER W/ ACCESS DOOR
BD	BACKDRAFT DAMPER
M	MOTORIZED DAMPER W/ ACCESS DOOR
	FIRE DAMPER W/ ACCESS DOOR
CONTROLS AND SENSORS	
T	THERMOSTAT
T_S	TEMPERATURE SENSOR
DUCTWORK	
24X12	RECTANGULAR DUCT (WIDTH X DEPTH)
FC FC	FLEXIBLE CONNECTION
ø12	ROUND DUCT (DIAMETER)
20X12	OVAL DUCT (WIDTH X DIAMETER)
	ROUND DUCT CROSS SECTION
	POINT OF CONTINUATION
	SUPPLY AIR RECTANGULAR DUCT GOING UP/DOWN
	RETURN AIR RECTANGULAR DUCT GOING UP/DOWN

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AL	ACOUSTIC LINING
BD	BACKDRAFT DAMPER
BOD	BOTTOM OF DUCT
BOE	BOTTOM OF EQUIPMENT
CFM	CUBIC FEET OF AIR PER MINUTE
CD	CONDENSATE DRAIN PIPE
CDS	CEILING DIFFUSER SUPPLY
CDR	CEILING DIFFUSER RETURN
AC	AIR CONDITIONING UNIT
DN	DOWN
EF	EXHAUST FAN
FC	FLEXIBLE CONNECTION
FD/AD	FIRE DAMPER W/ACCESS DOOR
FSD	FIRE AND SMOKE DAMPER
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
SEER	SEASONAL ENERGY EFFICIENCY RATIO
VD	VOLUME DAMPER
MD	MOTORIZED DAMPER
ACCU	AIR COOLED CONDENSING UNIT
EF	EXHAUST FAN
CF	CIRCULATION FAN
DH	DEHUMIDIFIER
EWH	ELECTRIC WALL HEATER
KEF	KITCHEN EXHAUST FAN
OAF	OUTSIDE AIR FAN

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. INTERNATIONAL BUILDING CODE, 2015

b. INTERNATIONAL MECHANICAL CODE, 2015

c. ILLINOIS PLUMBING CODE, 2014

d. 2018 STATE OF ILLINOIS ENERGY CONSERVATION CODE

ELGIN BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF ELGIN BUILDING CODE 2015 AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

1. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS.
2. TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH 2015 INTERNATIONAL BUILDING CODE .
3. 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.
4. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION MC 107 AND THE FOLLOWING SECTIONS OF THE 2015 INTERNATIONAL MECHANICAL CODE:
   A. REFRIGERATION SYSTEMS – MC 1108
5. THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
   A. STANDARDS OF HEATING – 2015–IMC 309.1
   B. DUCT CONSTRUCTION AND INSTALLATION– 2015 IMC 603
   C. AIR INTAKES, EXHAUSTS AND RELIEFS – 2015 IMC 401.5
   D. AIR FILTERS – 2015 IMC 605
6. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
7. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2015– IMC 401.
8. 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 2015–IMC 403.3
9. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE–RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
10. 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.
11. A WRITTEN REPORT DESCRIBING THE ACTIVITIES AND MEASUREMENTS COMPLETED IN ACCORDANCE WITH SECTION 2018–IECC, C408.2.5.1.
12. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
13. SMOKE DETECTOR SHALL MEET UL268A.
14. A COMMISSIONING PLAN SHALL DEVELOPED BY A LICENSED DESIGN PROFESSIONAL, MECHANICAL ENGINEER OR APPROVED AGENCY.
15. A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY THE LICENSED DESIGN PROFESSIONAL, ELECTRICAL ENGINEER, MECHANICAL ENGINEER OR APPROVED AGENCY AND PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT AS PER ELGINS BUILDING CODE; BASE CODE IECC 2018, C408.2.4
16. MECHANICAL SYSTEMS SHALL BE COMMISSIONED PER LINCOLN BUILDING CODE; BASE CODE IECC 2018 C408.2.5.2, C408.2.1, C408.2.5 FINAL COMMISSIONING REPORT SHALL BE DUE WITHIN 90 DAYS OF RECEIPT OF CERTIFICATE OF OCCUPANCY.

SR. NO.	MECHANICAL DRAWING LIST	
1	M0.1	SYMBOL & DRAWING LIST
2	M0.2	MECH SPECIFICATIONS (1 OF 2)
3	M0.3	MECH SPECIFICATIONS (2 OF 2)
4	M1.1	MECH 1ST FLOOR PLAN (WEST)
5	M1.2	MECH 1ST FLOOR PLAN (EAST)
6	M1.3	MECH 2ND FLOOR PLAN (WEST)
7	M1.4	MECH 2ND FLOOR PLAN (EAST)
8	M1.5	MECH ROOF PLAN (WEST)
9	M1.6	MECH ROOF PLAN (EAST)
10	M5.1	MECHANICAL DETAILS (1 OF 2)
11	M5.2	MECHANICAL DETAILS (2 OF 2)
12	M6.1	MECH. SCHEDULES (1 OF 3)
13	M6.2	MECH. SCHEDULES (2 OF 3)
14	M6.3	MECH. SCHEDULES (3 OF 3)

GENERAL NOTES

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

DEFINITIONS:

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

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

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. PROVIDE VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS CONNECTED TO, AND WITHIN 50 FT. OF, ISOLATED EQUIPMENT (EXCEPT AT BASE ELBOW SUPPORTS AND ANCHOR POINTS).

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. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO THE FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF BEAMS.

14. 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.

15. 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.

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

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

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

19. ALL ROOF-MOUNTED EQUIPMENT CURBS/STEEL RAILS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.

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. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO THE NEAREST DRAIN. SEE THE DETAILS SHOWN IN THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR THE DEPTH OF THE AIR CONDITIONING CONDENSATE TRAP.

23. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.

AIR OUTLETS

GENERAL:

1) MARGIN TYPES, COLORS, FINISH AND METHODS OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING AND WALL DETAILS AND SPECIFICATIONS.

2) FRAME TYPE SUITABLE FOR MOUNTING IN CEILING OR WALL CONSTRUCTION AS INDICATED ON ARCHITECTURAL PLANS.

3) EXACT LOCATION OF ALL AIR OUTLETS AS PER ARCHITECTURAL PLANS.

4) SUITABLE FOR OPERATION AT 20% EXCESS AND 20% LESS THAN NOTED CAPACITY FOR CONSTANT VOLUME SYSTEMS AND AT 20% EXCESS AND 60% LESS THAN NOTED CAPACITY FOR VARIABLE VOLUME SYSTEMS. MANUFACTURER RESPONSIBLE FOR EXAMINING APPLICATION OF EACH OUTLET AND GUARANTEE THAT EACH WILL PROVIDE REQUIRED NC LEVELS AND COMFORT SPACE CONDITIONS WITHOUT DRAFTS THROUGHOUT OPERATING RANGE.

5) ALL DIFFUSERS SHALL BE PROVIDED WITH OPPOSED BLADE VOLUME DAMPERS. DAMPER OPERATING LEVERS SHALL BE ACCESSIBLE AT THE FACE OF AIR OUTLETS.

A. SQUARE DIFFUSERS: DIFFUSERS SHALL BE STEEL CONSTRUCTION PAINTED WHITE SIMILAR TO ANEMOSTAT

INSULATION - GENERAL REQUIREMENTS

A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAMESPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.

B. DEFINITIONS:

1) EXPOSED: INDOOR DUCTS, PIPING OR EQUIPMENT LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.

2) CONCEALED: INDOOR DUCTS, PIPING OR EQUIPMENT WHICH IS NOT EXPOSED.

3) OUTDOOR: DUCTS, PIPING OR EQUIPMENT WHICH IS EXPOSED TO THE WEATHER.

DUCTWORK INSULATION

A. INSULATE ALL DUCTWORK IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.

INSULATION SCHEDULE - DUCTWORK

SERVICE	LOCATION	R-VALUE	TYPE	FINISH
SUPP/RET	CONCEALED	R-6	D-1	VAPORSEAL
SUPP/RET	EXPOSED	R-12	D-1	VAPORSEAL
INTAKE	ALL	R-12	D-1	VAPORSEAL

B. REINSULATE ALL DUCTWORK AND PIPING WHICH IS EXISTING TO REMAIN AND WAS DAMAGED DURING CONSTRUCTION OR SHOWN OR REQUIRED TO BE RELOCATED. INSULATE WITH SAME MATERIAL AND THICKNESS.

C. NON-INSULATED DUCTWORK:

1) WHERE SOUND LINING IS OF MINIMUM THICKNESS SPECIFIED FOR INSULATION.

2) AIR CONDITIONING RETURN AIR DUCTWORK EXPOSED IN AIR CONDITIONED SPACES AND INSTALLED IN HUNG CEILINGS WHERE SPACE IMMEDIATELY ABOVE AND BELOW ARE BOTH AIR CONDITIONED.MATERIAL:

D. MATERIAL:

1) TYPE D-1: MINIMUM 1-LB DENSITY FIBERGLASS BLANKET, MAXIMUM 0.28 K-FACTOR AT 75 ADEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FOIL-SKRIM-KRAFT FACING SIMILAR TO MANVILLE MICROLITE.

2) TYPE D-2: 3 LB. FIBERGLASS BOARD. THE MAXIMUM K FACTOR SHALL BE 0.23 AT 75 DEG F MEAN TEMPERATURE WITH A MINIMUM DENSITY OF 3 LB. THE INSULATION SHALL BE PROVIDED WITH A FACTORY-APPLIED ALL PURPOSE OR ALL SERVICE FACING. THE INSULATION SHALL BE EQUAL TO MANVILLE TYPE 814 SPIN-GLAS AP.

3) TYPE D-3: MINIMUM 6 LB FIBERGLASS BOARD. MAXIMUM 0.22 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY APPLIED ALL PURPOSE OR ALL SERVICE FACING. SIMILAR TO MANVILLE 817 SPIN-GLAS AP

E. FINISH:

1) TYPE F-1: FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO MANVILLE ZESTRON.

2) TYPE F-2: WHITE VAPOR BARRIER COATING WITH 10X10 OR 20X20 MESH WHITE GLASS, POLYESTER OR NYLON CLOTH REINFORCING MEMBRANE, MINIMUM 31 MIL DRY FILM THICKNESS. SIMILAR TO FOSTER TITE-FIT, UL LABEL.

3) TYPE F-4: ALUMINUM JACKETING WITH MINIMUM 0.016 IN. WALL THICKNESS AND LONGITUDINAL JOINTS WITH LOCK SEAMS.

4) TYPE F-6: WHITE FINISHING AND INSULATING CEMENT APPLIED OVER HEXAGONAL WIRE MESH. CEMENT SIMILAR TO KEENE SUPERSLICK.

F. INSTALLATION:

a. FIBERGLASS BLANKET: 2 IN. LAP STRIPS AT ALL SEAMS. SECURE BOTTOM OF ALL DUCTS OVER 24 IN. WIDE WITH MIN 2 ROWS OF WELD PINS 12 IN. ON CENTER. SECURE ALL SEAMS WITH FOIL VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE.

b. FIBERGLASS BOARD: SEAL JOINTS AND BREAKS IN FACING WITH 3 IN. WIDE TAPE TO MATCH FACING AND ADHERE WITH VAPOR SEAL ADHESIVE. APPLY 5 IN. WIDE TAPE AT CORNERS, WELD PINS ON TOP, SIDES AND BOTTOM.

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.

B. THE BID IS MADE IN COMPLIANCE WITH THE BIDDING DOCUMENTS.

C. 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.

D. 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.

E. 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 BIDDER'S 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 BUILDING MANAGER.

C. THE BIDDER UNDERSTANDS THAT ANY PROPOSED SHUT-DOWN OF EXISTING SYSTEMS DURING CONSTRUCTION SHALL BE PRE-ARRANGED WITH THE BUILDING MANAGER 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 BUILDING MANAGER 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 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.

2. SHEET STEEL SHALL COMPLY WITH ASTM653 STANDARD SPECIFICATION FOR STEEL SHEET METAL, ZINC COATED (GALVANIZED) OR ZINC IRON ALLOY-COATED (GALVANINEALED) 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.

3. 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.

4. WHERE RECTANGULAR ELBOWS ARE USED, PROVIDE TURNING VANES IN ACCORDANCE WITH SECTION 23 33 00.

5. 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 TRAIGHT TAPS WILL NOT BE ACCEPTED.

6. BUTTON PUNCH SNAP-LOCK CONSTRUCTION WILL NOT BE ACCEPTED ON ALUMINUM DUCTWORK.

7. 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:

USG	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 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. METALAIRE, INC.

e. NAILOR INDUSTRIES INC.

f. RUSKIN

C. ALL DIFFUSERS SHALL HAVE CONTROLLING/EQUALIZING GRID AND OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

D. ALL DUCTED RETURN REGISTERS SHALL HAVE AN OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.

END OF SECTION 233713

NOISE CONTROL

A. ALL ROOM NC LEVELS SHALL BE 35 OR LESS.

B. PROVIDE SOUND LINING FOR THE FOLLOWING DUCTWORK:

1) ALL DUCTWORK WITHIN NOT LESS THAN 20 FT ON EACH SIDE OF ALL FANS AND AC UNITS.

2) AIR TRANSFER DUCTS.

3) DOWNSTREAM OF ALL CONSTANT VOLUME BOXES FOR A MINIMUM OF 15 FT.

4) ALL MIXED AIR PLENUMS.

5) FULL EXTENT OF SUPPLY DUCTS SERVING CONFERENCE ROOMS.

6) ALL EXPOSED INTERIOR SUPPLY DUCTWORK.

7) ALSO WHERE NOTED ON A DRAWING.

C. SOUND LINING IN DUCTWORK: FIBROUS GLASS, MINIMUM 3 LB DENSITY, 1 IN. THICKNESS, MAXIMUM 0.25 K FACTOR AT 75 DEG F MEAN TEMPERATURE WITH ACRYLIC COATED FINISH FACTORY APPLIED EDGE COATING AND STENCILED IN ACCORDANCE WITH NFPA 90. FLAMESPREAD SHALL BE A MAXIMUM OF 25. LINING SHALL NOT SUPPORT MICROBIAL GROWTH AND SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1071 AND ASTM G21/G22. SIMILAR TO MANVILLE PERMACOTE LINA COUSTIC.

D. ALL SOUND LINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, EXCEPT AS OTHERWISE NOTED.

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. 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. 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. 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
h. SILICONE FOAM
i. PILLOWS/BAGS
j. INTUMESCENT WRAP STRIPS
k. INTUMESCENT COMPOSITE SHEET

1.6 MANUFACTURERS

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

END OF SECTION 078413

SECTION 230548 – VIBRATION CONTROLS FOR HVAC EQUIPMENT

PART 1 – GENERAL

1.1 PERFORMANCE REQUIREMENTS

A. SEISMIC–RESTRAINT LOADING:

1. SITE CLASS AS DEFINED IN THE IBC: A, B
2. ASSIGNED SEISMIC USE GROUP OR BUILDING CATEGORY AS DEFINED IN THE IBC: I II III
   a. COMPONENT IMPORTANCE FACTOR: 1.0
   b. COMPONENT RESPONSE MODIFICATION FACTOR: 2.5
   c. COMPONENT AMPLIFICATION FACTOR: 2.5.
3. DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (0.2 SECOND) 18%
4. DESIGN SPECTRAL RESPONSE ACCELERATION AT 1–SECOND PERIOD: 8%

1.2 COMPONENTS

A. VIBRATION ISOLATORS:

1. ISOLATOR PADS: NEOPRENE, RUBBER, HERMETICALLY AND/OR SEALED COMPRESSED FIBERGLASS
2. MOUNTS: DOUBLE–DEFLECTION TYPE.
3. RESTRAINED MOUNTS: ALL DIRECTIONAL MOUNTINGS WITH SEISMIC RESTRAINT; CAST–DUCTILE–IRON HOUSING.
4. SPRING ISOLATORS: FREESTANDING, LATERALLY STABLE, OPEN–SPRING TYPE.
5. RESTRAINED SPRING ISOLATORS: FREESTANDING, STEEL, OPEN–SPRING TYPE WITH SEISMIC RESTRAINT.
6. HOUSED SPRING MOUNTS: DUCTILE–IRON OR STEEL HOUSING, WITH INTEGRAL, VERTICALLY ADJUSTABLE SEISMIC SNUBBERS.
7. ELASTOMERIC HANGERS: DOUBLE–DEFLECTION TYPE.
8. SPRING HANGERS: COMBINATION COIL–SPRING AND ELASTOMERIC–INSERT HANGERS WITH SPRING AND INSERT IN COMPRESSION.
9. SPRING HANGERS WITH VERTICAL–LIMIT STOP: COMBINATION COIL–SPRING AND ELASTOMERIC–INSERT HANGERS WITH SPRING AND INSERT IN COMPRESSION AND WITH VERTICAL–LIMIT STOP.
10. PIPE RISER RESILIENT SUPPORT: ALL–DIRECTIONAL, ACOUSTICAL PIPE ANCHOR.
11. RESILIENT PIPE GUIDES.

B. AIR–MOUNTING SYSTEMS:

1. AIR MOUNTS: FREESTANDING, SINGLE OR MULTIPLE, COMPRESSED–AIR BELLOWS.
2. RESTRAINED AIR MOUNTS: HOUSED COMPRESSED–AIR BELLOWS.

C. RESTRAINED VIBRATION ISOLATION ROOF–CURB RAILS: FACTORY–ASSEMBLED, FULLY ENCLOSED, INSULATED, AIR– AND WATERTIGHT CURB RAIL; WITH SPRING ISOLATORS MOUNTED ON ELASTOMERIC ISOLATION PADS, AND SNUBBER BUSHINGS.

D. VIBRATION ISOLATION EQUIPMENT BASES:

1. STEEL BASE: FACTORY–FABRICATED, WELDED, STRUCTURAL–STEEL BASES AND RAILS.
2. INERTIA BASE: FACTORY–FABRICATED, WELDED, STRUCTURAL–STEEL BASES AND RAILS READY FOR FIELD–APPLIED, CAST–IN–PLACE CONCRETE

1.3 FIELD QUALITY CONTROL

A. TESTING: BY EITHER: OWNER–ENGAGED AGENCY, CONTRACTOR–ENGAGED AGENCY, OR CONTRACTOR.

PART–2 PRODUCTS

1.4 VIBRATION ISOLATORS & SEISMIC–RESTRAINT DEVICES

A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

SECTION 230593 – TESTING, ADJUSTING, AND BALANCING FOR HVAC

1.1 SUMMARY

A. TESTING, ADJUSTING, AND BALANCING FOR THE FOLLOWING:

1. MOTORS.
2. CONDENSING UNITS.
3. AIR SYSTEM: CONSTANT VOLUME

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. ACE MOUNTINGS CO., INC.
2. AMBER/BOOTH COMPANY, INC.
3. CALIFORNIA DYNAMICS CORPORATION.
4. COOPER B–LINE, INC.; A DIVISION OF COOPER INDUSTRIES.
5. HILTI, INC.
6. ISOLATION TECHNOLOGY, INC.
7. KINETICS NOISE CONTROL.
8. LOOS & CO.; CABLEWARE DIVISION.
9. MASON INDUSTRIES.
10. TOLCO INCORPORATED; A BRAND OF NIBCO INC.
11. UNISTRUT; TYCO INTERNATIONAL, LTD.
12. VIBRATION ELIMINATOR CO., INC.
13. VIBRATION ISOLATION.
14. VIBRATION MOUNTINGS & CONTROLS, INC.

END OF SECTION 230548

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 S3ECTION 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. J. ADDITIONAL TESTS: RANDOM TESTS WITHIN 90 DAYS OF COMPLETING TAB TO VERIFY BALANCE CONDITIONS AND SEASONAL TESTS.

END OF SECTION 230593

PIPING INSULATION

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

PIPING INSULATION SCHEDULE

SERVICE	SIZE	THICKNESS	MATERIAL	FINISH
REFRIGERANT PIPING		1.5"	P–6	
CONDENSATE DRAIN		1"	P–6	

B. PIPING, VALVES AND FITTINGS TO BE INSULATED:

1) PROTECTIVE COVERINGS SHALL BE INSTALLED ON AREAS OF INSULATION THAT ARE EXPOSED TO WEATHER OR SUBJECT TO MECHANICAL DAMAGE. THE PROTECTIVE COVERING SHALL BE:

a. ARMA–CHEK SILVER" MULTI–LAYER LAMINATE OF ALUMINUM, COATED WITH A UV PROTECTIVE FILM AND BACKED WITH A FLEXIBLE PVC FILM. THE MATERIAL SHOULD BE ADHERED WITH ARMAFLEX 520 ADHESIVE OR EQUIVALENT, AND ALL JOINS AND SEAMS SECURED WITH "ARMA–CHEK SILVER TAPE". INSTALLATION SHALL BE IN ALL CASES TO THE MANUFACTURER'S RECOMMENDATIONS.

OR

b. HIGH DENSITY RUBBER CLADDING OF THE "ARMA–CHECK R" TYPE BONDED USING AN APPROPRIATE FULL CONTACT ADHESIVE WITH A MINIMUM 50 MM OVERLAP AT ALL BUTT JOINTS AND LONGITUDINAL SEAMS. A WEATHER–PROOF MASTIC SEALANT SHALL BE APPLIED OVER ALL SEAMS AND JOINTS. ALL MATERIAL SHALL BE OVERLAPPED AND STAGGERED IN SUCH A WAY AS TO ENSURE A WATERSHED IS ALWAYS PROVIDED. INSTALLATION SHALL BE IN ALL CASES TO THE MANUFACTURER'S RECOMMENDATIONS. ALL EXCESS ADHESIVE VISIBLE ON THE SURFACE OF THE COMPLETED ASSEMBLY SHALL BE REMOVED USING AN APPROPRIATE CLEANING MATERIAL.

OR

c. METAL CLADDING, COMPRISED OF COATED SHEET METAL, WITH ALL EXTERNAL JOINTS AND FIXING MADE WEATHER–PROOF WITH SILICONE SEALANT.

d.

C. MATERIAL:

1) TYPE P–1: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS, MAXIMUM 0.24 K–FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY–APPLIED FIRE–RETARDANT FOIL–SKRIM–KRAFT FACING. ALL SERVICE JACKET. SIMILAR TO OWENS–CORNING 650 ASJ.

2) TYPE P–3: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS FITTING, MAXIMUM 0.23 K–FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO EPOLUX HAMFAB MOLDED FITTINGS.

3) TYPE P–4: MINIMUM 1 LB DENSITY FIBERGLASS FITTING INSERTS, MAXIMUM 0.27 K–FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO MANVILLE HI–LO TEMP INSULATION INSERTS.

4) TYPE P–6: MINIMUM 6 LB MOLDED FOAMED PLASTIC. MAXIMUM 0.27 K–FACTOR AT 75 DEG F MEAN TEMPERATURE. MAXIMUM 0.17 PERMEANCE. SIMILAR TO ARMSTRONG ARMAFLEX II.

D. FINISH:

1) TYPE F–1: FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO MANVILLE ZESTRON.

2) TYPE F–2: WHITE VAPOR BARRIER COATING WITH 10X10 OR 20X20 MESH WHITE GLASS, POLYESTER OR NYLON CLOTH REINFORCING MEMBRANE, MINIMUM 31 MIL DRY FILM THICKNESS, SIMILAR TO FOSTER TITE–FIT, UL LABEL.

3) TYPE F–4: ALUMINUM JACKETING WITH MINIMUM 0.016 IN. WALL THICKNESS AND LONGITUDINAL JOINTS WITH LOCK SEAMS.

4) TYPE F–6: WHITE FINISHING AND INSULATING CEMENT APPLIED OVER HEXAGONAL WIRE MESH. CEMENT SIMILAR TO KEENE SUPERSLICK.

THERMOSTATIC CONTROLS:

C403.4 HEATING AND COOLING SYSTEM CONTROLS

EACH HEATING AND COOLING SYSTEM SHALL BE PROVIDED WITH THERMOSTATIC CONTROLS AS SPECIFIED IN SECTION C403.4.1, C403.4.1.2, C403.4.1.3 AND C403.4.2

C403.4.1 THERMOSTATIC CONTROLS

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.

C403.4.1.2 DEADBAND

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.

EXCEPTIONS:

1. THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES.
2. OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

C403.4.1.3 SET POINT 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 C403.4.1.2.

C403.4.2 OFF–HOUR CONTROLS

EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.

EXCEPTIONS:

1. ZONES THAT WILL BE OPERATED CONTINUOUSLY.
2. ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A READILY ACCESSIBLE MANUAL SHUTOFF SWITCH.

C403.4.2.1 THERMOSTATIC SETBACK CAPABILITIES

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).

C403.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN CAPABILITIES

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.

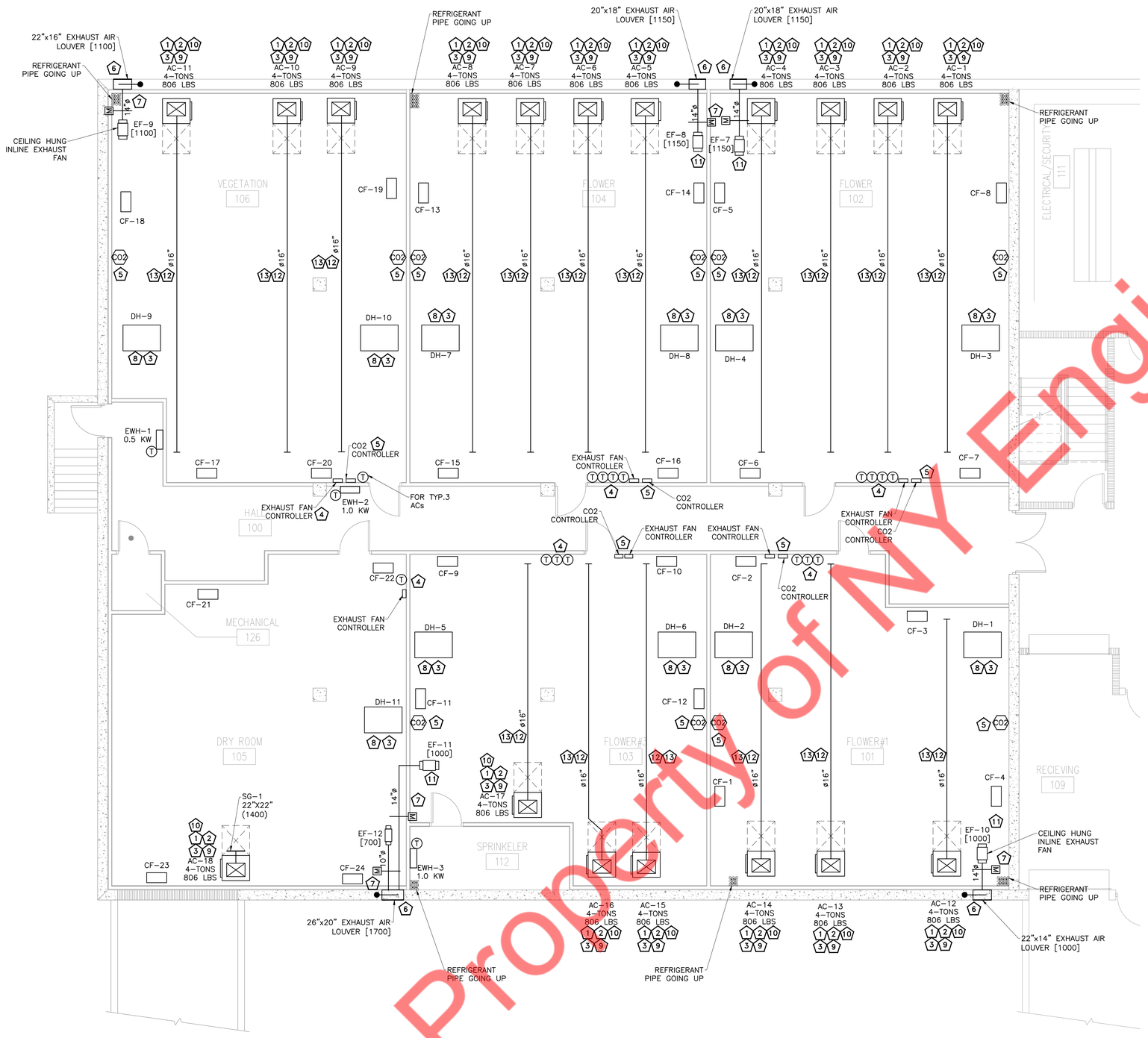
C403.4.2.3 AUTOMATIC AND OPTIMUM START CAPABILITIES

AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CONFIGURED TO AUTOMATICALLY ADJUST THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

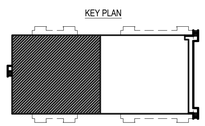
INDIVIDUAL HEATING AND COOLING SYSTEMS WITH SETBACK CONTROLS AND DIRECT DIGITAL CONTROL SHALL HAVE OPTIMUM START CONTROLS. THE CONTROL ALGORITHM SHALL, AS A MINIMUM, BE A FUNCTION OF THE DIFFERENCE BETWEEN SPACE TEMPERATURE AND OCCUPIED SET POINT, THE OUTDOOR TEMPERATURE, AND THE AMOUNT OF TIME PRIOR TO SCHEDULED OCCUPANCY. MASS RADIANT FLOOR SLAB SYSTEMS SHALL INCORPORATE FLOOR TEMPERATURE INTO THE OPTIMUM START ALGORITHM.

C403.4.1.1 HEAT PUMP SUPPLEMENTARY HEAT

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



KEY PLAN



1 LEVEL-1 MECHANICAL FLOOR PLAN- WEST WING

1" = 3/16"

MECHANICAL GENERAL NOTES

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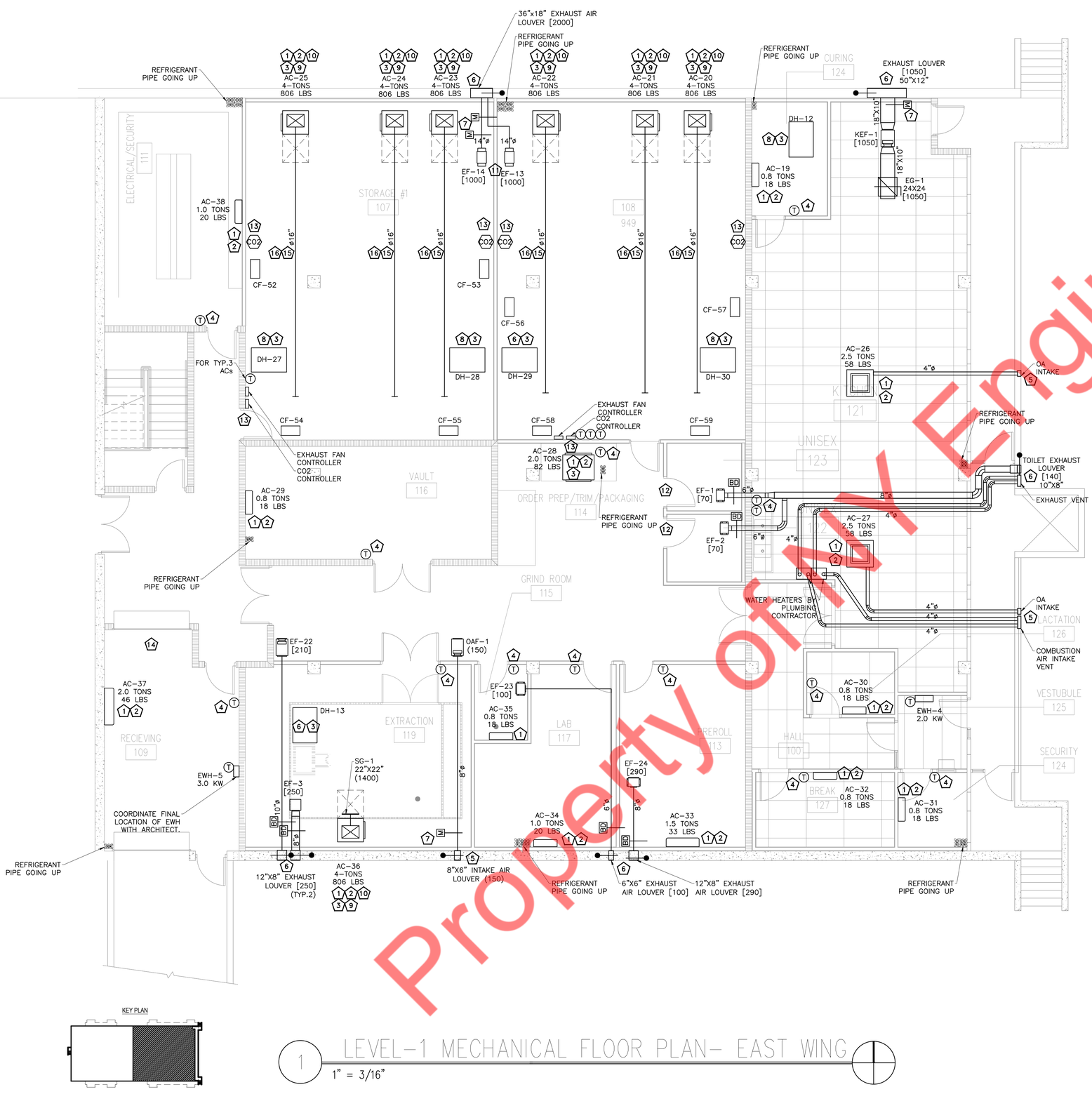
2. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
3. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
4. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
6. MOUNT DUCTWORK AS HIGH AS POSSIBLE.
7. PROVIDE R-8 INSULATION FOR OAI DUCT AND R-6 INSULATION FOR SUPPLY AND RETURN DUCT.
8. 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 COORDINATE WITH ELECTRICAL ENGINEER FOR POWER REQUIREMENT FOR FSD.
9. OUTDOOR AIR INTAKE/ EXHAUST OPENINGS SHALL BE PROVIDED WITH CLASS I MOTORIZED DAMPERS. THE DAMPERS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 4 CFM/FT2 OF DAMPER SURFACE AREA AT 1.0 INCH WATER GAUGE (249 PA) AND SHALL BE LABELED BY AN APPROVED AGENCY WHEN TESTED IN ACCORDANCE WITH AMCA 5000.
10. PROVIDE WEATHER PROOF COATING FOR ALL EXTERIOR PIPING INSULATION.
11. ALL EQUIPMENT SHALL MAINTAIN MINIMUM CLEARANCE FROM THE COMBUSTIBLE MATERIAL AS PER MANUFACTURE RECOMMENDATION.
12. FOR EXPOSED DUCTING PROVIDE INTERNAL INSULATION. FOR CONCEALED DUCTING PROVIDE EXTERNAL INSULATION.
13. COORDINATE LOUVER ELEVATIONS/TERMINATIONS AS PER SITE CONDITION. TERMINATE ABOVE SNOW LEVEL.
14. EXHAUST FAN LOCATIONS TO BE COORDINATED WITH CCTVS.
15. FABRIC DUCTS SHALL MEET THE REQUIREMENTS OF NFPA 90A AND UL 2518 LISTED.

MECHANICAL PLAN KEY NOTES

1. CONNECT ALL THE CONDENSATE DRAINS FROM HVAC UNITS TO THE PLUMBING DRAIN COLLECTION LINES. COORDINATE WITH PLUMBING DRAWINGS/CONTRACTOR FOR MORE DETAILS. PROVIDE CONDENSATE DRAIN PUMP (MAKE: LITTLE GIANT MODEL: VCNA-20UL-PRO OR EQUIVALENT) AS/IF REQUIRED.
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 OF ANY DISCREPANCY BEFORE COMMENCING BID.
3. 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. LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
5. CO2 SENSORS/CONTROLLER TO BE INTERLOCKED WITH THE CO2 CYLINDERS. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM.
6. ALL EXHAUST LOUVERS SHALL BE LOCATED MINIMUM 3 FEET FROM OPERABLE OPENING AND 10 FEET FROM OUTSIDE AIR INTAKE.
7. MD TO INTERLOCK WITH RESPECTIVE AC UNITS AND FANS.
8. CONNECT ALL THE CONDENSATE DRAINS FROM DEHUMIDIFIERS TO THE PLUMBING DRAIN COLLECTION LINES. COORDINATE WITH PLUMBING DRAWINGS/CONTRACTOR FOR MORE DETAILS. PROVIDE CONDENSATE DRAIN PUMP AS/IF REQUIRED. COORDINATE IN FIELD.
9. PROVIDE THE 18" STAND FOR THE FLOOR MOUNTED AC UNITS. PROVIDE ALL THE MOUNTING ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATION.
10. PROVIDE UNIT MOUNTED UV LIGHTS.
11. EXHAUST FANS TO BE INTERLOCKED WITH CO2 SENSORS/CONTROLLER. FINAL INTERLOCKING TO BE CONFIRM WITH ARCHITECT/OWNER.
12. CONTRACTOR TO PROVIDE FABRIC DUCT "DUCTSOX" OR EQUIVALENT. CONTRACTOR MUST OBTAIN SHOP DRAWINGS FOR INSTALLATION FROM MANUFACTURER PRIOR STARTING CONSTRUCTION.
13. CONTRACTOR TO TAKE PRIOR APPROVAL FROM ARCHITECT/OWNER FOR THE FABRIC DUCTS COLORS.



KEY PLAN

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1" = 3/16"

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5. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
6. MOUNT DUCTWORK AS HIGH AS POSSIBLE.
7. PROVIDE R-8 INSULATION FOR OAI DUCT AND R-6 INSULATION FOR SUPPLY AND RETURN DUCT.
8. 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 COORDINATE WITH ELECTRICAL ENGINEER FOR POWER REQUIREMENT FOR FSD.
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10. PROVIDE WEATHER PROOF COATING FOR ALL EXTERIOR PIPING INSULATION.
11. ALL EQUIPMENT SHALL MAINTAIN MINIMUM CLEARANCE FROM THE COMBUSTIBLE MATERIAL AS PER MANUFACTURE RECOMMENDATION.
12. FOR EXPOSED DUCTING PROVIDE INTERNAL INSULATION. FOR CONCEALED DUCTING PROVIDE EXTERNAL INSULATION.
13. COORDINATE LOUVER ELEVATIONS/TERMINATIONS AS PER SITE CONDITION. TERMINATE ABOVE SNOW LEVEL.
14. EXHAUST FAN LOCATIONS TO BE COORDINATED WITH CCTVS.
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MECHANICAL PLAN KEY NOTES

1. CONNECT ALL THE CONDENSATE DRAINS FROM HVAC UNITS TO THE PLUMBING DRAIN COLLECTION LINES. COORDINATE WITH PLUMBING DRAWINGS/CONTRACTOR FOR MORE DETAILS. PROVIDE CONDENSATE DRAIN PUMP (MAKE: LITTLE GIANT MODEL: VCNA-20UL-PRO OR EQUIVALENT) AS/IF REQUIRED.
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3. 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. LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
5. OUTSIDE AIR INTAKE LOUVER SHALL BE 10 FEET AWAY FROM ANY EXHAUST. CONTRACTOR TO MAINTAIN OUTSIDE AIR INTAKE 10 FEET AWAY FROM THE ADJACENT TENANT'S EXHAUST.
6. ALL EXHAUST LOUVERS SHALL BE LOCATED MINIMUM 3 FEET FROM OPERABLE OPENING AND 10 FEET FROM OUTSIDE AIR INTAKE.
7. MD TO INTERLOCK WITH RESPECTIVE AC UNITS AND FANS.
8. CONNECT ALL THE CONDENSATE DRAINS FROM DEHUMIDIFIERS TO THE PLUMBING DRAIN COLLECTION LINES. COORDINATE WITH PLUMBING DRAWINGS/CONTRACTOR FOR MORE DETAILS. PROVIDE CONDENSATE DRAIN PUMP AS/IF REQUIRED. COORDINATE IN FIELD.
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10. PROVIDE UNIT MOUNTED UV LIGHTS.
11. EXHAUST FANS TO BE INTERLOCKED WITH CO2 SENSORS/CONTROLLER. CONFIRM FINAL INTERLOCKING WITH ARCHITECT/OWNER.
12. PROVIDE 1/2" DOOR UNDERCUT FOR MAKE UP AIR.
13. CO2 SENSORS/CONTROLLER TO BE INTERLOCKED WITH THE CO2 CYLINDERS. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM.
14. HVAC SYSTEM SERVING ENCLOSED SHIPPING BAY SHOULD BE ISOLATED FROM THE OTHER PARTS OF BUILDING.
15. CONTRACTOR TO PROVIDE FABRIC DUCT "DUCTSOX" OR EQUIVALENT. CONTRACTOR MUST OBTAIN SHOP DRAWINGS FOR INSTALLATION FROM MANUFACTURER PRIOR STARTING CONSTRUCTION.
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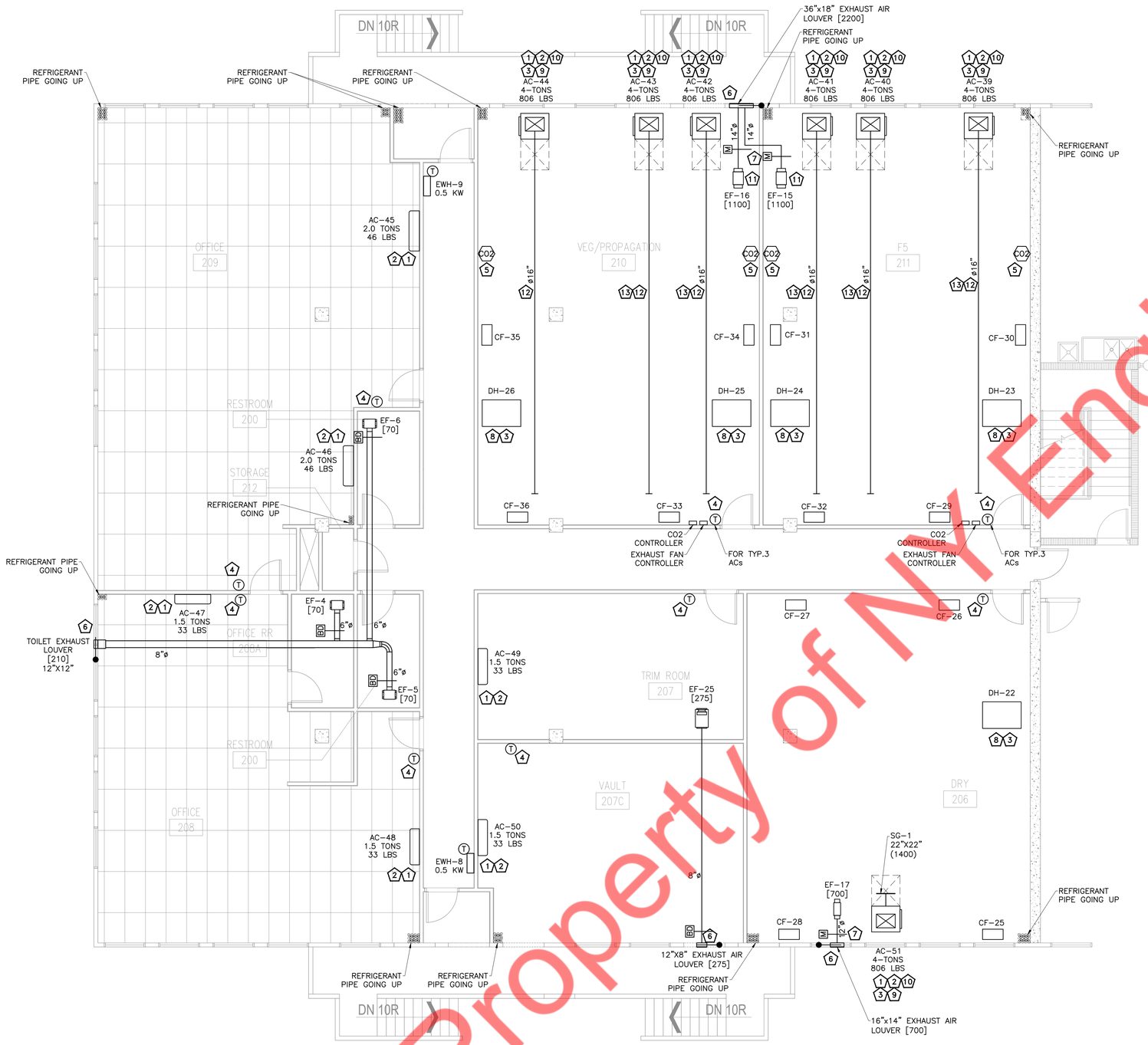

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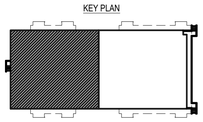

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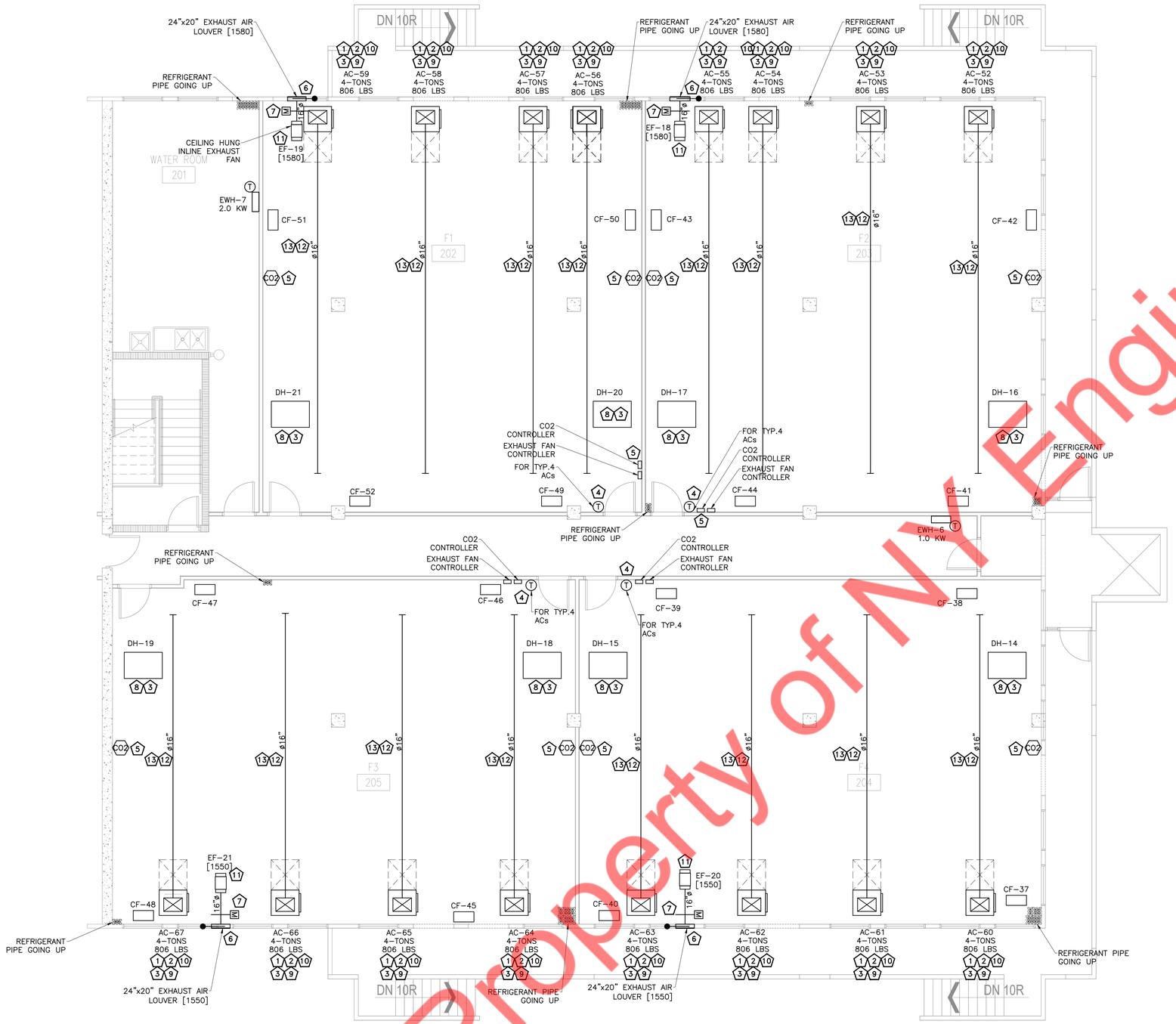

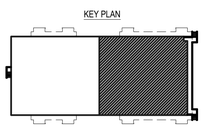

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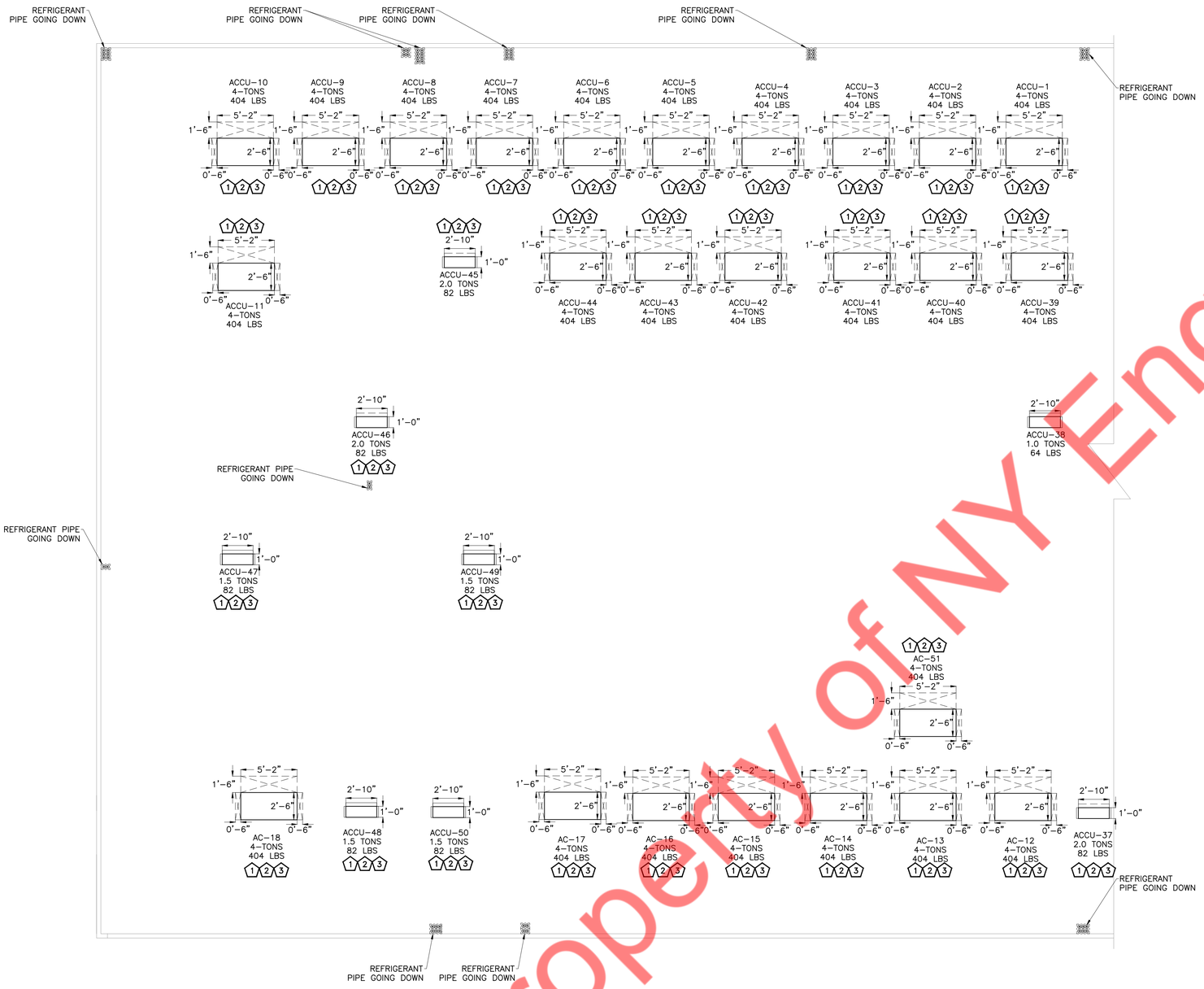
1. CONNECT ALL THE CONDENSATE DRAINS FROM HVAC UNITS TO THE PLUMBING DRAIN COLLECTION LINES. COORDINATE WITH PLUMBING DRAWINGS/CONTRACTOR FOR MORE DETAILS. PROVIDE CONDENSATE DRAIN PUMP (MAKE: LITTLE GIANT MODEL: VCNA-20UL-PRO OR EQUIVALENT) AS/IF REQUIRED.
2. INSTALL REFRIGERANT PIPING BETWEEN INDOOR 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 OF ANY DISCREPANCY BEFORE COMMENCING BID.
3. 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. LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
5. CO2 SENSORS/CONTROLLER TO BE INTERLOCKED WITH THE CO2 CYLINDERS. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM.
6. ALL EXHAUST LOUVERS SHALL BE LOCATED MINIMUM 3 FEET FROM OPERABLE OPENING AND 10 FEET FROM OUTSIDE AIR INTAKE.
7. MD TO INTERLOCK WITH RESPECTIVE AC UNITS AND FANS.
8. CONNECT ALL THE CONDENSATE DRAINS FROM DEHUMIDIFIERS TO THE PLUMBING DRAIN COLLECTION LINES. COORDINATE WITH PLUMBING DRAWINGS/CONTRACTOR FOR MORE DETAILS. PROVIDE CONDENSATE DRAIN PUMP AS/IF REQUIRED. COORDINATE IN FIELD.
9. PROVIDE THE 18" STAND FOR THE FLOOR MOUNTED AC UNITS. PROVIDE ALL THE MOUNTING ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATION.
10. PROVIDE UNIT MOUNTED UV LIGHTS.
11. EXHAUST FANS TO BE INTERLOCKED WITH CO2 SENSORS/CONTROLLER. FINAL INTERLOCKING TO BE CONFIRM WITH ARCHITECT/OWNER.
12. CONTRACTOR TO PROVIDE FABRIC DUCT "DUCTSOX" OR EQUIVALENT. CONTRACTOR MUST OBTAIN SHOP DRAWINGS FOR INSTALLATION FROM MANUFACTURER PRIOR STARTING CONSTRUCTION.
13. CONTRACTOR TO TAKE PRIOR APPROVAL FROM ARCHITECT/OWNER FOR THE FABRIC DUCTS COLORS.



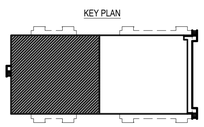
GENERAL NOTES:

1. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.
2. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING, ETC.
3. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
5. PROVIDE WEATHER PROOF COATING FOR ALL EXTERIOR PIPING INSULATION.

ROOF PLAN KEY NOTES:

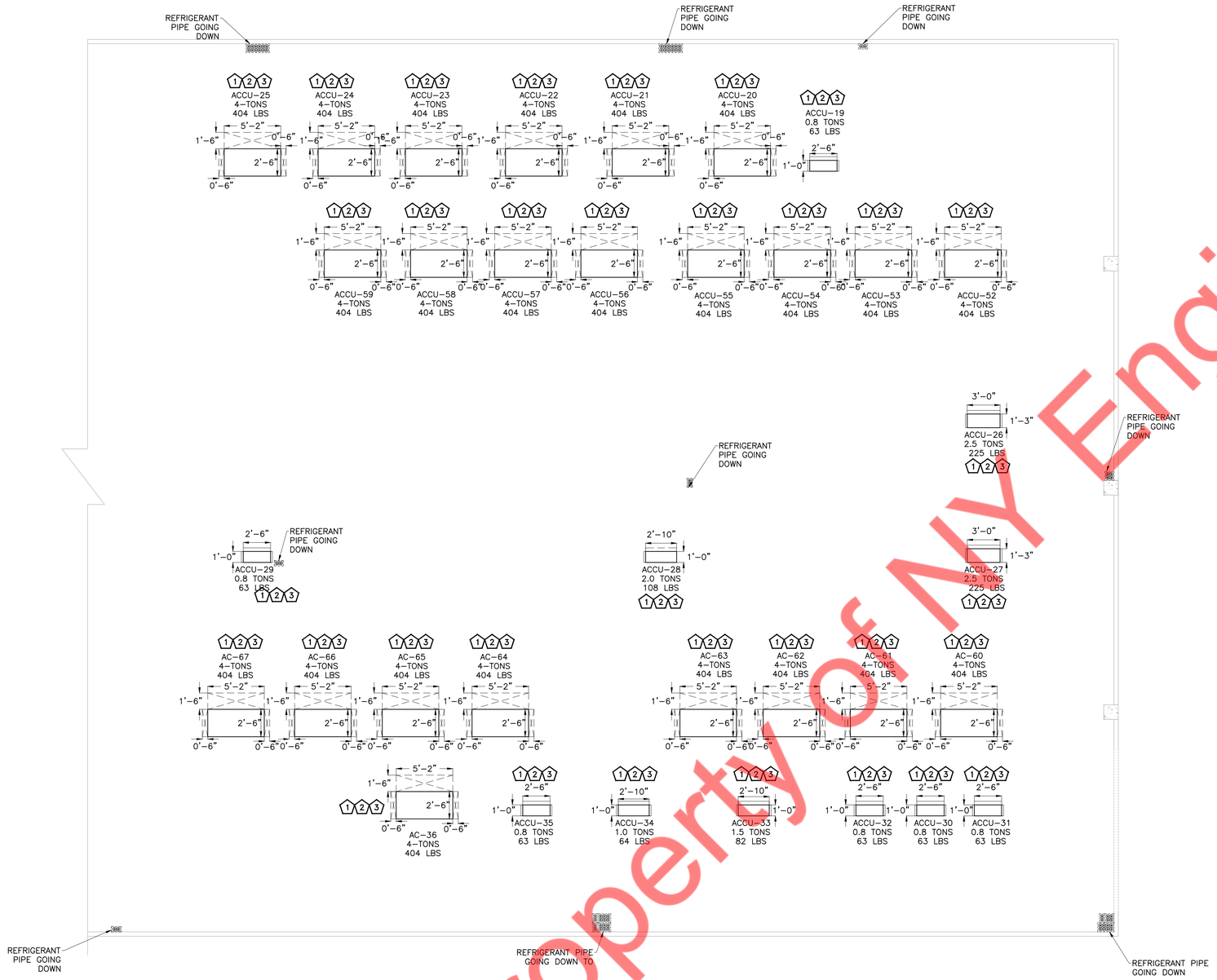
1. CONTRACTOR TO INSTALL OUTDOOR UNIT AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE CONCRETE PAD WITH VIBRATION ISOLATORS.
2. LOCATION OF OUTDOOR UNIT TO BE COORDINATED WITH ARCHITECT/OWNER.
3. INSTALL REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT AS PER MANUFACTURERS RECOMMENDATIONS. PROVIDE INSULATION TO REF PIPING AS PER ENERGY CONSERVATION CODE. COORDINATE WITH BASE BUILDING ENGINEER FOR PIPE ROUTING AND RISER LOCATION. NOTIFY THE ENGINEER OF ANY DISCREPANCY BEFORE COMMENCING BID.

KEY PLAN



1 MECHANICAL ROOF PLAN– WEST WING

1" = 3/16"

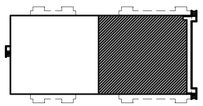


GENERAL NOTES:

1. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.
2. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING, ETC.
3. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
5. PROVIDE WEATHER PROOF COATING FOR ALL EXTERIOR PIPING INSULATION.

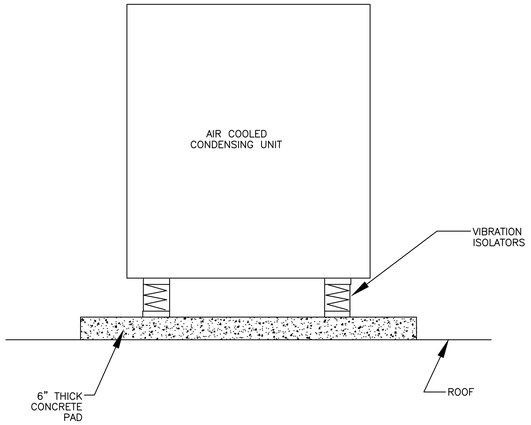
ROOF PLAN KEY NOTES:

1. CONTRACTOR TO INSTALL OUTDOOR UNIT AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE CONCRETE PAD WITH VIBRATION ISOLATORS.
2. LOCATION OF OUTDOOR UNIT TO BE COORDINATED WITH ARCHITECT/OWNER.
3. INSTALL REFRIGERANT PIPING BETWEEN INDOOR AND OUTDOOR UNIT AS PER MANUFACTURERS RECOMMENDATIONS. PROVIDE INSULATION TO REF PIPING AS PER ENERGY CONSERVATION CODE. COORDINATE WITH BASE BUILDING ENGINEER FOR PIPE ROUTING AND RISER LOCATION. NOTIFY THE ENGINEER OF ANY DISCREPANCY BEFORE COMMENCING BID.

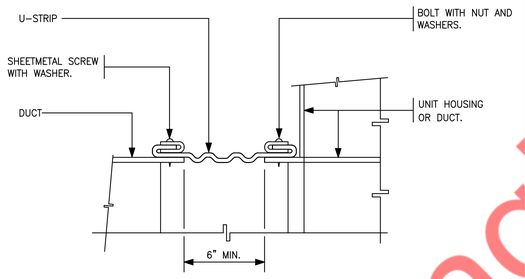


1 MECHANICAL ROOF PLAN– EAST WING

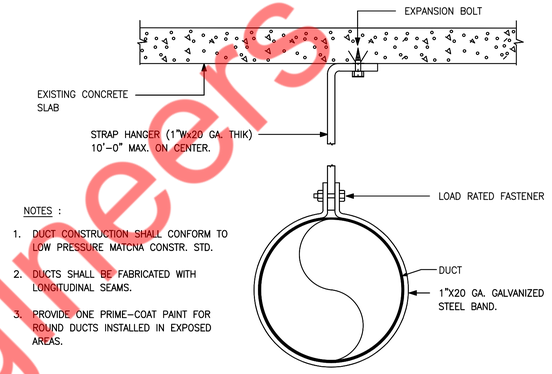
1" = 3/16"



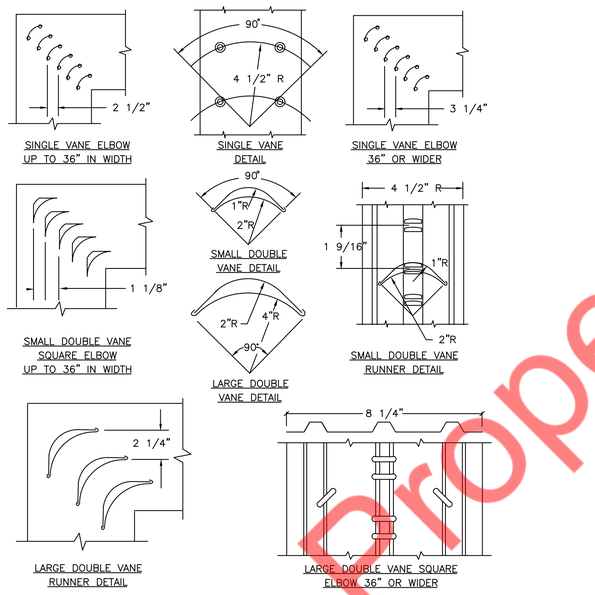
1 / M5.1 OUTDOOR UNIT MOUNTING DETAILS
N.T.S



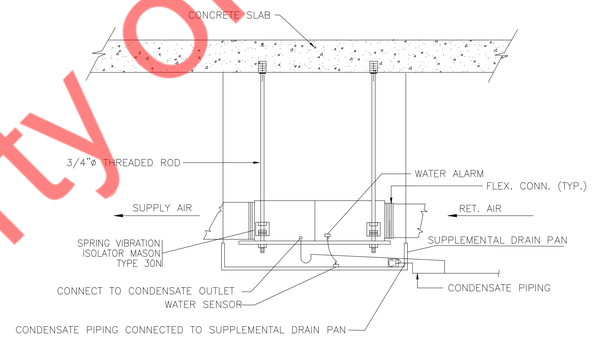
2 / M5.1 FLEXIBLE CONNECTION (DUCT-EQUIPMENT)
N.T.S



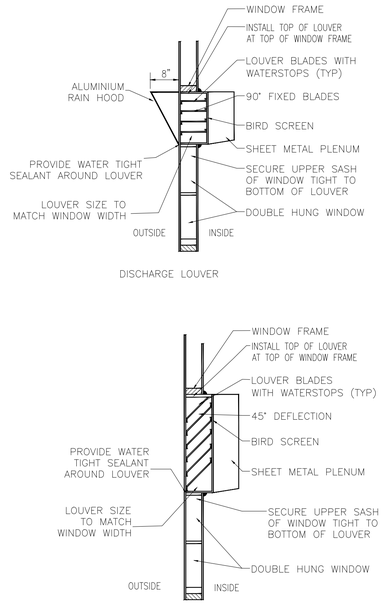
3 / M5.1 METHOD OF HANGING DUCTWORK
N.T.S



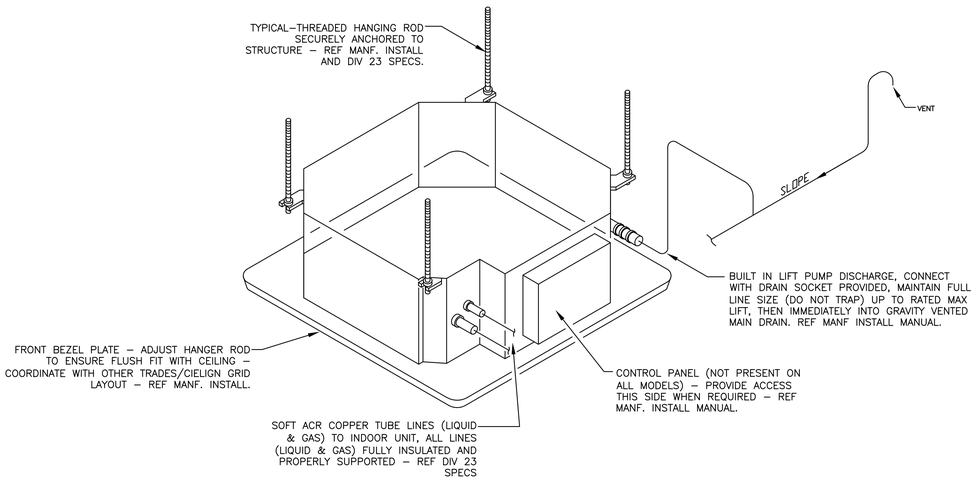
4 / M5.1 LOW VELOCITY DUCTWORK ELBOWS
N.T.S



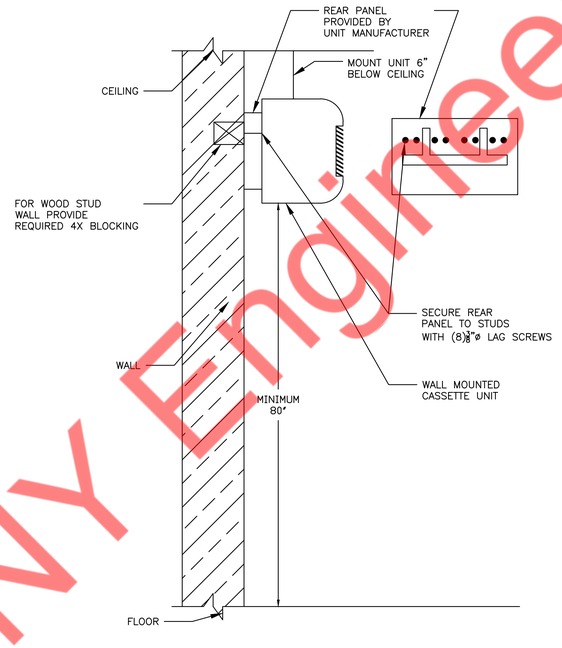
5 / M5.1 AC INSTALLATION DETAIL
N.T.S



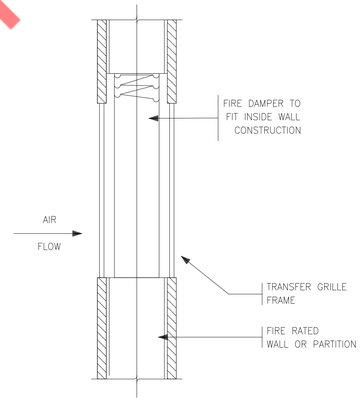
6 / M5.1 INTAKE LOUVER DETAIL
N.T.S



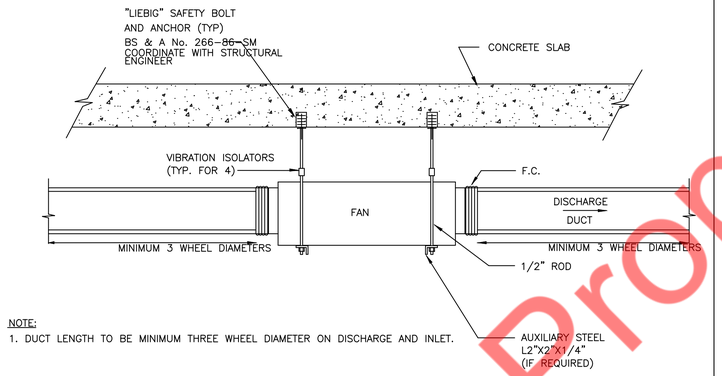
1 M5.2 CEILING MOUNTED CASSETTE UNIT DETAIL N.T.S



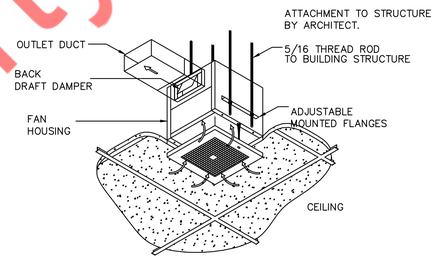
2 M5.2 WALL MOUNTED UNIT DETAIL N.T.S



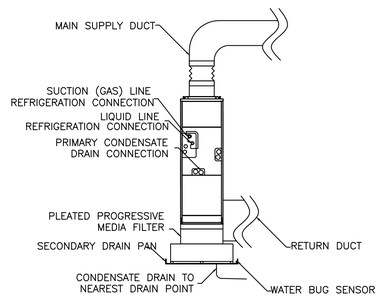
3 M5.2 FIRE DAMPER DETAIL N.T.S



4 M5.2 INLINE FAN DETAILS N.T.S



5 M5.2 CEILING EXHAUST FAN DETAIL N.T.S



6 M5.2 AC UNIT INSTALLATION DETAIL N.T.S

INDOOR AC UNIT SCHEDULE

MAKE:-AAON/DAIKIN (OR EQUIVALENT)

UNIT TAG	LOCATION	AREA SERVED	TYPE	CAP. (TON)	COOLING MBH	HEAT PUMP MBH	AUXILIARY HEATING MBH	TOTAL CFM	OUTDOOR CFM	MAX RATED ESP. (IN. WG)	MAX. SOUND PRESS.(DBA)	ELECTRICAL DATA			DIMENSIONS (HXWXD) (IN.)	PIPE SIZE (INCH)			WEIGHT (LBS.)	MAKE	MODEL NO.
												PH/VOLT/HZ	MCA (A)	MOP (A)	UNIT	LIQ.	SUCTION	DRAIN (ID)			
AC-1	FLOWER ROOM #102	FLOWER ROOM #102	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	V3BLB3A141D7BS-EG1EDCK0000A0AAAAAC000D000000D00
AC-2			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-3			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-4			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-5	FLOWER ROOM #104	FLOWER ROOM #104	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-6			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-7			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-8			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-9	VEGETATION ROOM #106	VEGETATION ROOM #106	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-10			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-11			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-12	FLOWER ROOM #101	FLOWER ROOM #101	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-13			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-14			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-15	FLOWER ROOM #103	FLOWER ROOM #103	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-16			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-17			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-18	DRY ROOM #105	DRY ROOM #105	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-19	CURING	CURING	WALL MONUTED UNIT	0.8	9	10.9	-	417	-	-	43	1/208-230/60	POWER BY OUTDOOR		12X32X10	1/4"	3/8"	5/8"	18	DAIKIN	FTX09WMVJU9
AC-20	FLOWER ROOM #108	FLOWER ROOM #108	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	V3BLB3A141D7BS-EG1EDCK0000A0AAAAAC000D000000D00
AC-21			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-22			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-23	FLOWER ROOM #107	FLOWER ROOM #107	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	V3BRB3A141D7BS-EG1EDCK0000A0AAAAAC000D000000D00
AC-24			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-25			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-26	KITCHEN	KITCHEN	CASSETTE UNIT	2.5	30	34	-	1059	100	-	77	1/208-230/60	1	15	38X38x12	3/8"	5/8"	1"	58	DAIKIN	FCQ30AAVJU
AC-27	KITCHEN	KITCHEN	CASSETTE UNIT	2.5	30	34	-	1059	100	-	42	1/208-230/60	1	15	38X38x12	3/8"	5/8"	1"	58	DAIKIN	FCQ30AAVJU
AC-28	ORDER/PREP	ORDER/PREP	CONCEALED DUCTED	2	21.8	24	-	798	150		40	1/208-230/60	POWER BY OUTDOOR		10X40X32	1/4"	5/8"	1"	82	DAIKIN	FDMQ24RVJU
AC-29	VAULT	VAULT	WALL MOUNTED UNIT	0.8	9	10.9	-	417	-	-	43	1/208-230/60	POWER BY OUTDOOR		12X32X10	1/4"	3/8"	5/8"	18	DAIKIN	FTX09WMVJU9
AC-30	LACTATION	LACTATION	WALL MOUNTED UNIT	0.8	9	10.9	-	417	-	-	43	1/208-230/60	POWER BY OUTDOOR		12X32X10	1/4"	3/8"	5/8"	18	DAIKIN	FTX09WMVJU9
AC-31	SECURITY	SECURITY	WALL MOUNTED UNIT	0.8	9	10.9	-	417	-	-	43	1/208-230/60	POWER BY OUTDOOR		12X32X10	1/4"	3/8"	5/8"	18	DAIKIN	FTX09WMVJU9
AC-32	BREAK	BREAK	WALL MOUNTED UNIT	0.8	9	10.9	-	417	-	-	43	1/208-230/60	POWER BY OUTDOOR		12X32X10	1/4"	3/8"	5/8"	18	DAIKIN	FTX09WMVJU9
AC-33	PREROLL	PREROLL	WALL MOUNTED UNIT	1.5	18	21.6	-	583	-	-	46	1/208-230/60	POWER BY OUTDOOR		14X42X11	1/4"	1/2"	5/8"	33	DAIKIN	FTX18WMVJU9
AC-34	LAB	LAB	WALL MOUNTED UNIT	1	10.6	13.4	-	434	-	-	45	1/208-230/60	POWER BY OUTDOOR		12X32X10	1/4"	3/8"	5/8"	20	DAIKIN	FTX12WMVJU9
AC-35	GRIND ROOM	GRIND ROOM	WALL MOUNTED UNIT	0.8	9	10.9	-	417	-	-	43	1/208-230/60	POWER BY OUTDOOR		12X32X10	1/4"	3/8"	5/8"	18	DAIKIN	FTX09WMVJU9
AC-36	EXTRACTION ROOM	EXTRACTION ROOM	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	V3BRB3A141D7BS-E11EDCKFFD0A0AAA0AC000D000BD00
AC-37	RECEIVING	RECEIVING	WALL MOUNTED UNIT	2	21.2	24	-	643	-	-	51	1/208-230/60	POWER BY OUTDOOR		14X42X11	1/4"	5/8"	5/8"	33	DAIKIN	FTX24WMVJU9
AC-38	ELECTRICAL	ELECTRICAL	WALL MOUNTED UNIT	1	10.6	13.4	-	434	-	-	45	1/208-230/60	POWER BY OUTDOOR		12X32X10	1/4"	3/8"	5/8"	20	DAIKIN	FTX12WMVJU9
AC-39	FLOWER ROOM #211	FLOWER ROOM #211	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	V3BRB3A141D7BS-EG1EDCK0000A0AAAAAC000D000000D00
AC-40			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-41			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-42	VEG/PROPAGATION #210	VEG/PROPAGATION #210	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-43			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-44			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-45	OFFICE #209	OFFICE #209	WALL MOUNTED UNIT	2	21.2	24	-	643	-	-	51	1/208-230/60	POWER BY OUTDOOR		14X42X11	1/4"	5/8"	5/8"	33	DAIKIN	FTX24WMVJU9
AC-46			WALL MOUNTED UNIT	2	21.2	24	-	643	-	-	51	1/208-230/60	POWER BY OUTDOOR		14X42X11	1/4"	5/8"	5/8"	33	DAIKIN	FTX24WMVJU9
AC-47	OFFICE #208	OFFICE #208	WALL MOUNTED UNIT	1.5	18	21.6	-	583	-	-	46	1/208-230/60	POWER BY OUTDOOR		14X42X11	1/4"	1/2"	5/8"	33	DAIKIN	FTX18WMVJU9
AC-48			WALL MOUNTED UNIT	1.5	18	21.6	-	583	-	-	46	1/208-230/60	POWER BY OUTDOOR		14X42X11	1/4"	1/2"	5/8"	33	DAIKIN	FTX18WMVJU9
AC-49	TRIM ROOM	TRIM ROOM	WALL MOUNTED UNIT	1.5	18	21.6	-	583	-	-	46	1/208-230/60	POWER BY OUTDOOR		14X42X11	1/4"	1/2"	5/8"	33	DAIKIN	FTX18WMVJU9
AC-50	VAULT	VAULT	WALL MOUNTED UNIT	1.5	18	21.6	-	583	-	-	46	1/208-230/60	POWER BY OUTDOOR		14X42X11	1/4"	1/2"	5/8"	33	DAIKIN	FTX18WMVJU9
AC-51	DRY ROOM	DRY ROOM	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	V3BRB3A141D7BS-EG1EDCK0000A0AAAAAC000D000000D00
AC-52	FLOWER ROOM #203	FLOWER ROOM #203	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-53			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-54			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-55			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-56	FLOWER ROOM #202	FLOWER ROOM #202	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-57			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-58			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-59			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-60	FLOWER ROOM #204	FLOWER ROOM #204	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-61			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-62			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-63			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-64	FLOWER ROOM #205	FLOWER ROOM #205	VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-65			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-66			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	
AC-67			VERTICAL INDOOR AIR HANDLING UNITS	4	47.57	-	47.8	1400	-	0.7	77	3/460/60	23	25	83X30X56	5/8"	1 -1/8"	-	806	AAON	

NOTES FOR INDOOR UNITS

1) SUPPLY AIR CFM BASED ON HIGH SPEED.
2) REFRIGERANT R410A SHALL BE PROVIDED.
3) PROVIDE MOUNTING BRACKETS AND ALL ASSOCIATED ACCESSORIES.
4) ALL REFRIGERANT PIPING TO BE SIZED PER MANUFACTURERS RECOMMENDATIONS.
5) CEILING MOUNTED UNIT TO BE PROVIDED WITH THE APPROPRIATE FBM FILTER BOXES.
6) INDOOR UNIT ACCESS PANEL FIELD-PROVIDED.
7) CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.
8)ALL DUCTED AC UNIT TO BE INCLUDED SECONDARY DRAIN PANS AS WELL AS WATER BUG SENSORS TO SHUT DOWN THE CORRESPONDING EQUIPMENT AND NOTIFY IN EVENT OF A WATER LEAKAGE.
9) ALL AC TO BE INSTALLED WITH VIBRATION ISOLATION (RESILIENTLY SUPPORTED) TO MINIMIZE SOUND AND VIBRATION INTO THE SPACE.
10) ALL 4.0 TON DUCTED NEED TO HAVE INIT MOUNTED UV LIGHT INSTALLED.

OUTDOOR CONDENSING UNIT SCHEDULE

UNIT TAG	LOCATION	INDOOR AC UNIT CONNECTED	CAP.TR	COOLING MBH	HEAT PUMP MBH	COMPRESSOR TYPE	UNIT DIMENSIONS IN.(HXWXD)	PIPING DIMENSION		ELECTRICAL			REFRIGERANT	EER	SEER/SEER2	COP	HSPF	SOUND LEVEL (Dba)	MODEL NO.	MAKE
								WEIGHT (LBS)	LIQUID-HI PRESSURE (INCH)	GAS HIGH-PRESSURE (INCH)	(V/Hz/Ph)	MCA (A)	MOP (A)								
ACCU-1 TO ACCU-18	ROOF	AC-1 TO AC-18	4	47.57	-	2 STEP CAPACITY SCROLL	57"X62"X30"	404	5/8"	1 -1/8"	460/60/3	11	15	R410	12.15	14.25	-	-	-	CFA004AA3BA0EG-A00H0D0AN0DDE0000B0G000A0000B	AAON
ACCU-19		AC-19	0.8	9	10.9	HERMETICALLY SEALED	22"X27"X12"	63	1/4"	3/8"	208-230/60/1	8.7	15	R410	11.5	19.5	3.96	-	49	RXL09MWVJU9 (OR EQUIVALENT)	DAIKIN
ACCU-20 TO ACCU-25		AC-20 TO ACCU-25	4	47.57	-	2 STEP CAPACITY SCROLL	57"X62"X30"	404	5/8"	1 -1/8"	460/60/3	11	15	R410	12.15	14.25	-	-	-	CFA004AA3BA0EG-A00H0D0AN0DDE0000B0G000A0000B	AAON
ACCU-26		AC-26	2.5	30	34	INVERTER	53"X36"X13"	225	3/8"	5/8"	208-230/60/1	29.1	35	R410	13	21	3.96	10.1	57	RZQ30TBVJUA(OR EQUIVALENT)	DAIKIN
ACCU-27		AC-27	2.5	30	30	INVERTER	53"X36"X13"	225	3/8"	5/8"	208-230/60/1	29.1	35	R410	13	21	3.96	10.1	57	RZQ30TBVJUA(OR EQUIVALENT)	DAIKIN
ACCU-28		AC-28	2	21.2	24	HERMETICALLY SEALED	29"X35"X13"	108	1/4"	5/8"	208-230/60/3	16.9	20	R410	12.5	18.6	3.8	10	58	RX24RMVJUA (OR EQUIVALENT)	DAIKIN
ACCU-29		AC-29	0.8	9	10.9	HERMETICALLY SEALED	22"X27"X12"	63	1/4"	3/8"	208-230/60/1	8.7	15	R410	11.5	19.5	3.96	-	49	RXL09MWVJU9 (OR EQUIVALENT)	AAON
ACCU-30		AC-30	0.8	9	10.9	HERMETICALLY SEALED	22"X27"X12"	63	1/4"	3/8"	208-230/60/1	8.7	15	R410	11.5	19.5	3.96	-	49	RXL09MWVJU9 (OR EQUIVALENT)	AAON
ACCU-31		AC-31	0.8	9	10.9	HERMETICALLY SEALED	22"X27"X12"	63	1/4"	3/8"	208-230/60/1	8.7	15	R410	11.5	19.8	3.96	-	49	RXL09MWVJU9 (OR EQUIVALENT)	DAIKIN
ACCU-32		AC-32	0.8	9	10.9	HERMETICALLY SEALED	22"X27"X12"	63	1/4"	3/8"	208-230/60/1	8.7	15	R410	11.5	19.8	3.96	-	49	RXL09MWVJU9 (OR EQUIVALENT)	DAIKIN
ACCU-33		AC-33	1.5	18	21.6	HERMETICALLY SEALED	29"X35"X13"	132	1/4"	1/2"	208-230/60/1	18.6	20	R410	11.5	19.5	3.26	8.5	48	RXL18MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-34		AC-34	1	10.6	13.4	HERMETICALLY SEALED	22"X27"X12"	73	1/4"	3/8"	208-230/60/1	12.2	15	R410	11.5	19.5	3.56	10	50	RXL12MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-35		AC-35	0.8	9	10.9	HERMETICALLY SEALED	22"X27"X12"	63	1/4"	3/8"	208-230/60/1	8.7	15	R410	11.5	19.5	3.96	-	49	RXL09MWVJU9 (OR EQUIVALENT)	DAIKIN
ACCU-36		AC-36	4	47.57	-	2 STEP CAPACITY SCROLL	57"X62"X30"	404	5/8"	1 -1/8"	460/60/3	11	15	R410	12.15	14.25	-	-	-	CFA004AA3BA0EG-A00H0D0AN0DDE0000B0G000A0000B	AAON
ACCU-37		AC-37	2	21.2	24	HERMETICALLY SEALED	29"X35"X13"	132	1/4"	5/8"	208-230/60/3	18.8	20	R410	11.5	19.5	3.02	8.5	55	RXL24MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-38		AC-38	1	10.6	13.4	HERMETICALLY SEALED	22"X27"X12"	73	1/4"	3/8"	208-230/60/3	12.2	15	R410	11.5	19.5	3.56	10	50	RXL12MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-39 TO ACCU-44		AC-39 TO AC-44	4	47.57	-	2 STEP CAPACITY SCROLL	57"X62"X30"	404	5/8"	1 -1/8"	460/60/3	11	15	R410	12.15	14.25	-	-	-	CFA004AA3BA0EG-A00H0D0AN0DDE000	AAON
ACCU-45		AC-45	2	21.2	24	HERMETICALLY SEALED	29"X35"X13"	132	1/4"	5/8"	208-230/60/3	18.8	20	R410	11.5	19.5	3.02	8.5	55	RXL24MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-46		AC-46	2	21.2	24	HERMETICALLY SEALED	29"X35"X13"	132	1/4"	5/8"	208-230/60/3	18.8	20	R410	11.5	19.5	3.02	8.5	55	RXL24MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-47		AC-47	1.5	18	21.6	HERMETICALLY SEALED	29"X35"X13"	132	1/4"	1/2"	208-230/60/3	18.6	20	R410	11.5	19.8	3.26	8.5	48	RXL18MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-48		AC-48	1.5	18	21.6	HERMETICALLY SEALED	29"X35"X13"	132	1/4"	1/2"	208-230/60/3	18.6	20	R410	11.5	19.8	3.26	8.5	48	RXL18MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-49		AC-49	1.5	18	21.6	HERMETICALLY SEALED	29"X35"X13"	132	1/4"	1/2"	208-230/60/3	18.6	20	R410	11.5	19.8	3.26	8.5	48	RXL18MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-50		AC-50	1.5	18	21.6	HERMETICALLY SEALED	29"X35"X13"	132	1/4"	1/2"	208-230/60/3	18.6	20	R410	11.5	19.8	3.26	8.5	48	RXL18MWVJU9(OR EQUIVALENT)	DAIKIN
ACCU-51 TO ACCU-67		AC-51 TO AC-67	4	47.57	-	2 STEP CAPACITY SCROLL	57"X62"X30"	404	5/8"	1 -1/8"	460/60/3	11	15	R410	12.15	14.25	-	-	-	CFA004AA3BA0EG-A00H0D0AN0DDE0000B0G000A0000B	AAON

NOTES:-
1. UNIT SHALL HAVE TEN YEAR EXTENDED WARRANTY FOR COMPRESSORS/PARTS.
2. PROVIDE LOW AMBIENT CONTROL FOR CONDENSING UNIT OPERATION DOWN TO -4°F.
3. PROVIDE COMPRESSOR CYCLE PROTECTOR.
4. CONCRETE PAD WITH VIBRATION ISOLATOR TO BE PROVIDED BY MECHANICAL CONTACTOR.
5. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEED THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.

FAN SCHEDULE

UNIT ID	MANUFACTURER	CFM	ESP(IN W.G.)	RPM	HP	VOLTS/PH	FLA(A)	MAXIMUM POWER (A)	WEIGHT (LBS)	MODEL	NOTES
EF-1	GREENHECK	70	0.57	838	0.5	115/1	0.29	-	124	SP-A50-90-VG	1,2,3,4
EF-2	GREENHECK	70	0.57	838	0.5	115/1	0.29	-	124	SP-A50-90-VG	1,2,3,4
EF-3	SOLERPALAU	250	0.25	1850	0.25	115/1	1	-	30	SQD 60	2,3,4,5,6
EF-4	GREENHECK	70	0.57	838	0.5	115/1	0.29	-	124	SP-A50-90-VG	1,2,3,4
EF-5	GREENHECK	70	0.57	838	0.5	115/1	0.29	-	124	SP-A50-90-VG	1,2,3,4
EF-6	GREENHECK	70	0.57	838	0.5	115/1	0.29	-	124	SP-A50-90-VG	1,2,3,4
EF-7	AC INFINITY INC.	1150	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-8	AC INFINITY INC.	1150	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-9	AC INFINITY INC.	1100	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-10	AC INFINITY INC.	1000	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-11	AC INFINITY INC.	1000	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-12	AC INFINITY INC.	700	2.99	-	-	240/1	2.3	180	-	AI-CLS8	1,2,3,4,6
EF-13	AC INFINITY INC.	1000	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-14	AC INFINITY INC.	1000	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-15	AC INFINITY INC.	1100	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-16	AC INFINITY INC.	1100	4.25	-	-	240/1	2.7	255	-	AI-CLS10	2,3,4,6,7
EF-17	AC INFINITY INC.	700	2.99	-	-	240/1	2.3	180	-	AI-CLS8	1,2,3,4,6
EF-18	AC INFINITY INC.	1580	3.28	-	-	240/1	2.5	250		AI-CLS12	2,3,4,6,7
EF-19	AC INFINITY INC.	1580	3.28	-	-	240/1	2.5	250		AI-CLS12	2,3,4,6,7
EF-20	AC INFINITY INC.	1550	3.28	-	-	240/1	2.5	250		AI-CLS12	2,3,4,6,7
EF-21	AC INFINITY INC.	1550	3.28	-	-	240/1	2.5	250		AI-CLS12	2,3,4,6,7
EF-22	GREENHECK	210	0.5	1580	0.25	115/1	3.8	-	60	SQ-97-VG	1,2,3,4
EF-23	GREENHECK	100	0.6	825	116 (WATTS)	115/1	0.46	-	60	CSP-A200	1,2,3,4
EF-24	GREENHECK	290	0.6	1350	132 (WATTS)	115/1	1.42	-	60	CSP-A390	1,2,3,4
EF-25	GREENHECK	275	0.6	1550	0.125	115/1	-	-	60	SQ-95	1,2,3,4
KEF	GREENHECK	1050	0.5	1567	0.25	115/1	0.12	-	60	SQ-100-VG	2,3,4
OAF-1	GREENHECK	150	0.6	1408	0.25	115/1	3.8	-	60	SQ-97-VG	1,2,3,4

REMARK:
1. INTERLOCK FANS WITH OCCUPANCY SENSOR
2. FAN SHALL BE UL-705 LISTED.
3. UL 705 LISTED (HEAT OR STEAM)
4. 2 YEARS PART WARRANTY.
5. INLET GUARD TO BE PROVIDED.
6. FAN SHALL BE EXPLOSION PROOF, CLASS-1, DIV-2 RATED.
7. INTERLOCK FANS WITH CO2 SENSOR/COTROLLER. CONFIRM FINAL INTERLOCKING WITH ARCHITEC/OWNER.

ELECTRIC WALL HEATERS SCHEDULE

UNIT TAG	SERVING	TYPE	KW	BTU/HR	ELECTRIC DATA (V/PH/HZ)	AMPS	QTY (NOS	DIMENSIONS (WXHXD)	MODEL NO.	MAKE
EWH-1	SEE PLAN	WALL MOUNTED	0.5	1706	120/1/60	4.2	2	11"X12"X5"	CWH1101DSAF	QMARK
EWH-2	SEE PLAN	WALL MOUNTED	1	3413	120/1/60	8.4	1	11"X12"X5"	CWH1101DSAF	QMARK
EWH-3	SEE PLAN	WALL MOUNTED	1	3413	120/1/60	8.4	1	11"X12"X5"	CWH1101DSAF	QMARK
EWH-4	SEE PLAN	WALL MOUNTED	2	6826	240/1/60	8.4	1	11"X12"X5"	CWH1202DSAF	QMARK
EWH-5	SEE PLAN	WALL MOUNTED	3	10200	240/1/60	12.5	1	14"X16"X7.5"	MUH03-21	QMARK
EWH-6	SEE PLAN	WALL MOUNTED	1	3413	120/1/60	8.4	1	11"X12"X5"	CWH1101DSAF	QMARK
EWH-7	SEE PLAN	WALL MOUNTED	2	6826	240/1/60	8.4	1	11"X12"X5"	CWH1202DSAF	QMARK
EWH-8	SEE PLAN	WALL MOUNTED	0.5	1706	120/1/60	4.2	2	11"X12"X5"	CWH1101DSAF	QMARK
EWH-9	SEE PLAN	WALL MOUNTED	0.5	1706	120/1/60	4.2	2	11"X12"X5"	CWH1101DSAF	QMARK

1) PROVIDE DISCONNECTION SWITCH.
2) "HEATER ON" PILOT LIGHT.
3) THREE-POSITION SELECTOR SWITCH (HEATER-STANDBY-FAN)
4) BUILT-IN THERMOSTAT 40F TO 85 F RANGE.
5) ALL UNIT HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH THE LISTING AND MANUFACTURER'S INSTALLATION INSTRUCTIONS.

CIRCULATION FAN SCHEDULE

UNIT ID	MANUFACTURER	MOUNTING TYPE	CFM	MAX RPM	HP	VOLTS/PH	MCA(A)	WEIGHT (LBS)	MODEL
CF-1 - TO CF-59	SCHAEFER	CEILING HUNG	1200	1725	0.5	115/1	4.8	46	VK24

MANUAL SPEED CONTROL SWITCH (MODEL NO-H-115) TO BE PROVIDED/PURCHASED SEPARATELY. COORDINATE WITH ELECTRICAL CONTRACTOR FOR POWER REQUIREMENTS AND CONTROL CABLE. COORDINATE SWITCH LOCATIONS WITH ARCHITECT/OWNER.

SCHEDULE OF GRILLES

MAKE: TITUS

TAG	TYPE	CFM RANGE	DIMENSION(IN)	MODEL NO.	MAX NC dBA
EG-1	RETURN	1050	24X24	50F-NT	25
SG-1	SUPPLY	1200-1500	22X22	300FL	25

NOTES FOR DIFFUSERS
1. ALL GRILLES : CONTRACTOR SHALL COORDINATE WITH LATEST ARCHITECTURAL
2. COORDINATE COLOR/FINISH WITH ARCHITECT.

DEHUMIDIFIER SCHEDULE

UNIT #	LOCATION	SERVING	ELECTRICAL DATA	DIMENSION (WXHXD)	UNIT WEIGHT (LBS)	CAP. (PINTS/DAY)	BASIS OF DESIGN	
							MFR	MODEL
DH-1	FLOWER ROOM #101	FLOWER ROOM #101	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-2	FLOWER ROOM #101	FLOWER ROOM #101	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-3	FLOWER ROOM #102	FLOWER ROOM #102	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-4	FLOWER ROOM #102	FLOWER ROOM #102	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-5	FLOWER ROOM #103	FLOWER ROOM #103	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-6	FLOWER ROOM #103	FLOWER ROOM #103	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-7	FLOWER ROOM #104	FLOWER ROOM #104	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-8	FLOWER ROOM #104	FLOWER ROOM #104	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-9	VEG ROOM	VEG ROOM	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	25X24X33	215	350	QUEST	335-80/60
DH-10	VEG ROOM	VEG ROOM	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	25X24X33	215	350	QUEST	335-80/60
DH-11	DRY CURE ROOM	DRY CURE ROOM	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	25X24X33	215	350	QUEST	335-80/60
DH-12	CURING	CURING	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 6.9A, CIRCUIT REQUIREMENT 20 A	21X22X38	180	225	QUEST	225
DH-13	EXTRACTION ROOM	EXTRACTION ROOM	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 6.9A, CIRCUIT REQUIREMENT 20 A	21X22X38	180	225	QUEST	225
DH-14	FLOWER ROOM #204	FLOWER ROOM #204	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-15	FLOWER ROOM #204	FLOWER ROOM #204	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-16	FLOWER ROOM #203	FLOWER ROOM #203	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-17	FLOWER ROOM #203	FLOWER ROOM #203	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-18	FLOWER ROOM #205	FLOWER ROOM #205	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-19	FLOWER ROOM #205	FLOWER ROOM #205	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-20	FLOWER ROOM #202	FLOWER ROOM #202	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-21	FLOWER ROOM #202	FLOWER ROOM #202	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-22	DRY ROOM #206	DRY CURE ROOM	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	25X24X33	215	350	QUEST	335-80/60
DH-23	FLOWER ROOM #211	FLOWER ROOM #211	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-24	FLOWER ROOM #211	FLOWER ROOM #211	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-25	VEG ROOM #210	VEG ROOM #210	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	25X24X33	215	350	QUEST	335-80/60
DH-26	VEG ROOM #210	VEG ROOM #210	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	25X24X33	215	350	QUEST	335-80/60
DH-27	STORAGE ROOM #1	STORAGE ROOM #1	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-28	STORAGE ROOM #1	STORAGE ROOM #1	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-29	STORAGE ROOM #2	STORAGE ROOM #2	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60
DH-30	STORAGE ROOM #2	STORAGE ROOM #2	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	31X34X49	280	506	QUEST	506-80/60

NOTES :-

1) DEHUMIDIFIER CONTROLS PROVIDED WITH UNIT.
2) CONTRACTOR MUST PROVIDE SECONDARY DRAIN PAN.
3) DEHUMIDIFIER TO BE INSTALLED IN VERTICAL(WALL MOUNTED)/HORIZONTAL (CEILING MOUNTED) AS PER SITE CONDITIONS.

ELECTRICAL SYMBOLS LIST

LIGHTING

	LIGHTING FIXTURE AND OUTLET BOX. HALF SHADED FIXTURE OR "EM" INDICATES FIXTURES WITH INTEGRAL BATTERY PACK FOR EMERGENCY SERVICE, U.O.N.
A 2 a	LUMINAIRE TYPE : INDICATE BY LIPPERCASE LETTER SEE LIGHTING EXTURE SCHEDULE. CIRCUIT NUMBER : INDICATED BY NUMBER SWITCHING INDICATED BY LOWER CASE LETTERS.
EM	DENOTES LUMINAIRE ON EMERGENCY CIRCUIT.
NL	DENOTES FIXTURES DESIGNATED AS NIGHTLIGHT, WIRED TO 24 HOURS UNSWITCHED CIRCUIT.
	CEILING/WALL MOUNTED SELF POWERED EXIT LIGHT FIXTURE WITH DIRECTIONALARROWS AS INDICATED. SHADED AREA DENOTES FACE(S). ISOLITE ELITE SERIES LED EXIT SIGN

SWITCHES AND CONTROLS

$a	20A SPST TOGGLE SWITCH U.O.N. "a" DENOTES LIGHTING FIXTURE/SWITCHED RECEPTACLE CONTROLLED.
$3 a	20A 3-WAY TOGGLE SWITCH U.O.N. "a" DENOTES LIGHTING FIXTURE CONTROLLED
OS A	CEILING OCCUPANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE. 'A' LETTER REFERES TO WIRING DIAGRAM.

WIRING SYSTEMS

3 5 UP-	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 2#12 ø, 2#12 N. & 2#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.
3 5 7 UP-	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF 3#12 ø, 3#12 N. & 3#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.
	CONDUIT AND WIRE TO BUILDING GROUND.
	UNDERGROUND
	EXISTING
	NEW
	STROBE

POWER AND TELECOMMUNICATION

J	JUNCTION BOX WITH BLANK COVER PLATE, FLUSH IN FLOOR.
A	SIMPLEX RECEPTACLE, +18" AFF OR AS NOTED. SUFFIXE DENOTES FOLLOWING: A- NEMA 5-15R B- NEMA 6-15R C- NEMA 14-30R D- NEMA 14-50R
GFI	DUPLEX GFI RECEPTACLE
	DUPLEX CONVENIENCE RECEPTACLE, +18" AFF OR AS NOTED.
	DEDICATED DUPLEX CONVENIENCE RECEPTACLE, +18" AFF OR AS NOTED.
	TELEPHONE/DATA OUTLET, 4"SQUARE OUTLET BOX WITH SINGLE GANG COLLAR AND BLANK PLATE. PROVIDE 3/4" E.C., U.O.N., UP TO HUNG CEILING AND TERMINATE WITH 90° ELBOW, BUSHING AND DRAG WIRE.
	QUAD RECEPTACLE
	SPECIAL RECEPTACLE, VOLTAGE AND AMPERAGE BASED ON CONNECTED CIRCUIT.
	DATA OUTLET

MOTORS AND CONTROLS

M	AC INDOOR UNIT MOTOR AS NOTED WITH LIQUID TIGHT FLEXIBLE CONNECTION WITH JUNCTION BOX AND MOTOR SWITCH.
M WP	AC OUTDOOR UNIT MOTOR AS NOTED WITH CONTROLLER AND DISCONNECT SWITCH WITH WEATHER PROOF.
	NON FUSED DISCONNECT SWITCH AMPERAGE, AND NUMBER OF POLES AS NOTED.
A	30A/240V NON FUSED DISCONNECT SWITCH
B	60A/240V NON FUSED DISCONNECT SWITCH
C	100A/240V NON FUSED DISCONNECT SWITCH
D	200A/240V NON FUSED DISCONNECT SWITCH
	COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH, FURNISHED BY HVAC/CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
400 350	FUSED DISCONNECT SWITCH AND FUSE AMPERAGE AS INDICATED. TOP NUMBER DENOTS SWITCH SIZE AND BOTTOM NUMBER DENOTES FUSE.
M M	DUPLEX PUMP. NUMBER INDICATES HP RATING OF PUMP.
1.5 kW	ELECTRICAL HEATER, NUMBER DENOTES HEATER RATING
$os	WALL MOUNT OCCUPANCY SENSOR SWITCH
$T	THERMAL OVERLOAD SWITCH AT MOTOR. PROVIDE THERMAL ELEMENTS AS PER MOTOR RATING.
$M	MANUAL MOTOR SWITCH

ANNOTATION

X	KEYED NOTE REFERENCE
+24"	INDICATES MOUNTING HEIGHT, CENTER LINE TO FINISHED FLOOR.
1 E/2-1	DETAIL REFERENCE: DETAIL NUMBER INDICATED ON TOP; DRAWING NUMBER INDICATED ON BOTTOM

POWER DISTRIBUTION

	MAJOR ELECTRICAL COMPONENT OR DEVICE. VOLTAGE AND AMPERAGE AS NOTED.
	DISTRIBUTION PANELBOARD, 120/208V-SURFACE OR FLUSH MOUNTED.

ELECTRICAL ABBREVIATIONS

A	AMPERES	EA	EACH
A/C, AC	AIR CONDITIONING UNIT	EM	EMERGENCY
AF	AMPERE FRAME/AMP FUSE	EMT	ELECTRICAL METALLIC TUBING
AFF	ABOVE FINISHED FLOOR	EQUIP	EQUIPMENT
AS	AMP SWITCH	ER	EXISTING TO BE RELOCATED
AIC	AMPS INTERRUPTING CAPACITY	FA	FIRE ALARM
AT	AMP TRIP	E	EXISTING
ATS	AUTOMATIC TRANSFER SWITCH	FL	FLOOR
AUTO	AUTOMATIC	G	GROUND
AWG	AMERICAN WIRE GAUGE	GFI	GROUND FAULT INTERRUPTER
C	CONDUIT	GP	GENERAL PURPOSE
C/B,CB	CIRCUIT BREAKER	HP	HORSEPOWER
CKT	CIRCUIT	HWH	HOW WATER HEATER
CLG	CEILING	HZ	HERTZ
COMM	COMMUNICATION	IC	INTERRUPTING CAPACITY
CT	CURRENT TRANSFORMER	PP	POWER PANEL
CU	COPPER	PWR	POWER
DIA	DIAMETER	R	REMOVE
DISC	DISCONNECT	RE	RELOCATED EXISTING
DN	DOWN	REC	RECEPTACLE
DP	DISTRIBUTION PANEL	RGS	RIGID GALVANIZED STEEL
DWG	DRAWING	RR	REMOVE & RELOCATE
JB	JUNCTION BOX	SECT	SECTION
KCMIL	ONE THOUSAND CIRCULAR MILS	SPDT	SINGLE POLE DOUBLE THROW
KV	KILOVOLT	SPST	SINGLE POLE SINGLE THROW
KVA	KILOVOLT-AMPERES	SPEC	SPECIFICATION
KW	KILOWATTS	SW	SWITCH
LTG	LIGHTING	SWBD	SWITCHBOARD
MAX	MAXIMUM	SYM	SYMMETRICAL
MC	MOTOR CONTROLLER	SYS	SYSTEMS
MCB	MAIN CIRCUIT BREAKER	TELE	TELEPHONE
MLO	MAIN LUGS ONLY	TEMP	TEMPERATURE
MTD	MOUNTED	TXF	TOILET EXHAUST FAN
MTS	MANUAL TRANSFER SWITCH	TYP	TYPICAL
N	NEUTRAL	UON	UNLESS OTHERWISE NOTED
NIC	NOT IN CONTRACT	V	VOLT/VOLTAGE
NTS	NOT TO SCALE	VA	VOLT AMPERE
PNL	PANEL	WP	WEATHER PROOF
W	WATT	ø	PHASE

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE 2014 EDITION OF THE NATIONAL ELECTRICAL CODE WITH ELGIN AMENDMENTS, LOCAL JURISDICTION REQUIREMENTS, AND ALL GOVERNING LOCAL CODES, LAWS, AND REGULATIONS.
2. 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.
3. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, TEST REPORTS, AND CERTIFICATIONS FOR TEMPORARY AND FINAL CERTIFICATE OF OCCUPANCY.
4. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER IN ORDER TO MAINTAIN FIRE RATING. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED WATERTIGHT.
5. 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.
6. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH FISH WIRE.
7. 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.
8. CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
9. ALL UNUSED MATERIALS AND DEBRIS SHALL BE LEGALLY REMOVED AND DISPOSED OF AWAY FROM THE PREMISES ON A DAILY BASIS.
10. CONTRACTOR SHALL PATCH, PAINT, AND RESTORE EXISTING SURFACES DAMAGED DURING THE COURSE OF THIS CONSTRUCTION TO PRE-EXISTING CONDITIONS OR BETTER.
11. MINIMUM SIZE OF CONDUIT SHALL BE ¾", AND TYPE SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED. PROVIDE NYLON DRAG LINE AND CONDUIT CAP FOR ALL EMPTY CONDUITS.
12. 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.
13. 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 CANCEALED IN FINISHED AREAS, AND ALL COVERS TO PULL & JUNCTION BOXES SHALL BE READILY ACCESSIBLE.
14. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
15. FOR EXACT LOCATION AND MOUNTING HEIGHT OF LIGHTING FIXTURES AND SWITCH/RECEPTACLE OUTLETS, REFER TO ARCHITECTURAL REFLECTED CEILING AND POWER PLANS.
16. ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAINTIGHT INSTALLATION. ALL BUILDING EXTERIOR MOUNTED RECEPTACLES SHALL BE GFCI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
17. ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
18. 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.
19. ALL CONDUITS AND EQUIPMENT TO BE CONCEAL ED IN FINISHED SPACES UNLESS OTHERWISE NOTED. CONDUITS SHALL BE ENCASED IN THE CONCRETE FLOOR SLAB.
20. ALL EQUIPMENT AND MATERIALS INSTALLED IN PLENUM CEILINGS SHALL BE APPROVED FOR THAT APPLICATION.
21. 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.
22. COORDINATE ALL FLOOR PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. CONFIRM PENETRATION LOCATIONS WITH THE ENGINEER AND OWNER BEFORE INSTALLATION.
23. 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.
24. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL LUMINARIES AND SWITCHES, AND FOR ALL FINISHED CEILING HEIGHTS.
25. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL ELECTRICAL DEVICES, AND FOR FINAL CEILING AND WALL HEIGHTS AND LAYOUTS.
26. 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.
27. NUMBER(S) SHOWN AT RECEPTACLES, JUNCTION BOXES AND EQUIPMENT INDICATES CIRCUIT NUMBERS IN PANELBOARD. PROVIDE WIRE AND CONDUIT TO INTERCONNECT EQUIPMENT AND DEVICES WITH SAME CIRCUIT NUMBERS AND RUN TO PANELBOARD.

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 HIS 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 CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS, REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

D. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.

E. 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.

F. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL, UNLESS OTHERWISE NOTED.

G. 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.

H. 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 ND 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.

I. 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.

J. 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.

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

L. INSURANCE: PROVIDE IN ACCORDANCE WITH OWNER/BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

M. 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 FURRED 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.

B. 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 OWNER. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.

C. QUALITY ASSURANCE

1) 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.

2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C.

3) CURRENT CHARACTERISTICS:

a. SERVICE: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.

b. DISTRIBUTION: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.

4) HEIGHTS OF OUTLETS:

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.

D. PRODUCT DELIVERY, STORAGE AND HANDLING

1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE SPACES.

2) 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 LAMICOID 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 OF 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. 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.

G. 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.

H. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.

I. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

3. SCOPE OF WORK:

A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMING WITH NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.

B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLIED OR SPECIFIED HEREIN.

C. 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 PROVIDED THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR

D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, 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.

E. CONTRACTOR SHALL PERFORM ALL CONTROLLED INSPECTIONS IN ACCORDANCE WITH THE FLORIDA BUILDING CODE. SECURE ALL REQUIRED PERMITS AND APPROVALS AND TRANSMIT SAME TO OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES.

F. AREAS WITH NO ELECTRICAL WORK SHALL REMAIN AS IS. CONTRACTOR SHALL MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS TO ALL AREAS NOT COVERED BY THIS RENOVATION AND SHALL PROVIDE 48 HOUR NOTICE TO LANDLORD OF ANY PLANNED POWER INTERRUPTIONS OR SIGNAL SYSTEM OUTAGES.

4. SHOP DRAWINGS

A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:

1) PROJECT NAME AND LOCATION

2) NAME OF ARCHITECT AND ENGINEER

3) ITEM IDENTIFICATION

4) APPROVAL STAMP OF PRIME CONTRACTOR

C. SUBMISSIONS:

1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.

2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1) SAFETY/DISCONNECT SWITCHES

2) FUSES

3) CIRCUIT BREAKERS

4) PANELBOARDS/LOADCENTER (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).

5) RACEWAYS

6) WIRE AND CABLE

7) WALL SWITCHES

8) INSERTION RECEPTACLES

9) MOMENTARY CONTACT SWITCHES

10) TIME SWITCHES

11) LIGHTING FIXTURES.

E. ASSIST AND PROVIDE ALL NECESSARY INFORMATION, DIAGRAMS, SKETCHES, ETC. TO THE HVAC CONTRACTOR, FOR THE PREPARATION OF COORDINATED SHOP DRAWINGS INDICATING ROUTING OF FEEDERS, CONTROL CONDUITS, RECESSED FIXTURES AND ADJACENT NEARBY PIPING AND DUCTWORK WHERE APPLICABLE, CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT FOUR(4) BOOKBOUND OPERATING AND SERVICE MANUALS WHICH SHALL INCLUDE COPIES OF ALL SHOP DRAWING. PROVIDE SHOP DRAWINGS FOR PANELS, FIXTURES, WIRING DEVICES, CONDUIT, CABLE, DISCONNECT SWITCH, RELAYS, CONTRACTORS, AND OTHER SYSTEMS AS DIRECTED BY THE ENGINEER.

5. AS–BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS

A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND 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. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.

D. REPRODUCIBLE "AS–BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS–BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

6. LOW–VOLTAGE DISTRIBUTION EQUIPMENT:

A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS.

B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI AND IEEE STANDARDS.

C. DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED. VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, EXCEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 20 AMP AT 600 VOLTS AND 30 AMP AT 240 VOLTS. TWO–POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 6808F. THREE–POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 7810F. KNIFE–BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK–MAKE– QUICK–BREAK, UL CLASS R UP TO 600 AMP. MAXIMUM RATING EXCEPT AS NOTED SHALL BE 800 AMP. ARC QUENCHERS SHALL BE PROVIDED. SWITCHES SHALL BE SIMILAR TO GENERAL ELECTRIC QMR. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.

7. FUSES:

A. CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMAN LOW–PEAK DUAL–ELEMENT TIME–DELAY LPN–RK (AMP)SP (250V) /LPS–RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.

B. MOTOR CIRCUITS – ALL INDIVIDUAL MOTOR CIRCUITS WITH FULL LOAD AMPERE RATINGS (FLA) OF 480 AMPERES OR LESS SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW–PEAK DUAL–ELEMENT TIME–DELAY LPN–RK (AMP)SP (250V) /LPS–RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.

C. ALL FUSES SHALL BE PROVIDED BY SAME MANUFACTURER.

D. PROVIDE 1 SPACE MATCHING FUSE FOR EACH SET OF 3.

E. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL–MAGNETIC, QUICK–MAKE–QUICK–BREAK, BOLT–ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP–FREE HANDLE. MULTI–POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT–TRIPPING, OPEN A ND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

1) 120 VOLTS, 100–AMP FRAME: 10,000 AMPS, 1 POLE.

2) 120/240 VOLTS, 225–AMP FRAME: 22,000 AMPS MINIMUM

8. DISTRIBUTION PANELBOARDS, SWITCH AND FUSE:

A. THREE PHASE, 3 OR 4 WIRE WITH COPPER BUS BARS. ALL THROUGH BUS SHALL BE INSULATED.

B. NEMA CLASS 1 CONSTRUCTION TO ACCOMMODATE FUSIBLE, INDIVIDUALLY ENCLOSED SWITCHES, FRONT REMOVABLE, SWITCH AND DOOR INTERLOCKS. COVERS TO BE PAD–LOCKABLE.

C. PANELBOARD SHALL BE CONSTRUCTED OF CODE–GAUGE STEEL, GRAY FINISH OVER RUST INHIBITOR, FOR SURFACE MOUNTING. BOX AND PANEL FRAME SHALL BE FLANGED AND REINFORCED FOR RIGID SUPPORT OF INTERIOR AND ACCURATE ALIGNMENT OF INTERIOR WITH FRONT. TRIMS TO BE FASTENED TO BACK BOX WITH SCREWS.

D. ALL BRANCH SWITCHES SHALL HAVE INDIVIDUAL ENGRAVED LAMICOID NAMEPLATES (BLACK WITH WHITE CORE).

E. DISTRIBUTION PANELBOARD CONSTRUCTION MINIMUM SHORT CIRCUIT RATING 25,000 AMPERES, REMS SYMMETRICAL FOR ALL 120/208V APPLICATIONS. APPLICATIONS.

F. DISCONNECTS

1) DISCONNECT SWITCHES SHALL CONFORM TO NEMA AND UL STANDARDS, AND SHALL BE HORSEPOWER RATED.

2) SWITCHING MECHANISM SHALL BE QUICK–MAKE, QUICK–BREAK, SINGLE THROW WITH EXTERNAL OPERATING HANDLE MECHANCIALLY INTERLOCKED WITH ENCLOSURE COVER TO PROVIDE ACCESS TO INTERIOR WHEN DISCONNECT IS IN OFF POSITION ONLY. PROVIDE MEANS TO LOCK OPERATING HANDLE IN THE OPEN AND CLOSED POSITION. DESIGNATE ON THE ENCLOSURE THE OPEN AND CLOSED POSITION OF THE OPERATING HANDLE.

3) SWITCHES SHALL BE OF THE DOUBLE STATIONARY CONTACT TYPE.

4) SWITCHES SHALL BE EQUIPPED WITH REJECTION TYPE FUSE HOLDERS, FUSIBLE AS SHOWN ON THE DRAWINGS; PROVIDE COMPLETE WITH FUSES AS SCHEDULED.

G. INSTALLATION

1) DISTRIBUTION PANELBOARD SHALL BE MOUNTED TO STRUCTURAL STEEL CHANNEL (KINDORF) WHICH SHALL BE BOLTED TO THE WALL USING EXPANSION ANCHORS FOR LARGE PANELS.

H. IDENTIFICATION

1) PROVIDE NAMEPLATE AT EACH SWITCH IDENTIFYING THE LOAD SERVED.

2) NAMEPLATES SHALL BE MOUNTED ON THE FRONT COVER SECURED WITH SELF–TAPPING SCREWS OR NUTS AND BOLTS. NAMEPLATES SHALL BE LAMINATED PHENOLIC, BLACK WITH A MINIMUM OF ¼" HIGH WHITE LETTERING.

I. DISTRIBUTION AND SUB–DISTRIBUTION PANELBOARDS SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.

J. POWER PANELBOARDS SHALL BE SIMILAR TO GENERAL ELECTRIC TYPE "OMR", AS MANUFACTURED BY ATLAS SWITCH COMPANY, ELECTRIC SWITCHBOARD COMPANY OR APPROVED EQUAL.

K. PANELBOARD SHALL HAVE MAIN CIRCUIT BREAKER OR MAIN LUGS AS INDICATED ON THE DRAWINGS. QUANTITY, POLES AND TRIP RATINGS OF BRANCH CIRCUIT BREAKERS TO BE AS INDICATED ON DRAWINGS.

L. PANELBOARD SHALL HAVE ENGRAVED WHITE CORE, BLACK LAMACOID NAMEPLATE SCREWED ONTO PANE TRIM WITH DESIGNATION LISTED (PANELBOARD NAME, VOLTAGE, RATING OR MAINS IN AMPS).

M. MATERIALS

1) RACEWAYS:

a. RIGID STEEL CONDUIT: FULL–WEIGHT PIPE, GALVANIZED, THREADED.

b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.

c. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP, GALVANIZED. IN LENGTH NOT IN EXCESS OF 6' FOR UTILIZATION EQUIPMENT, TAP CONNECTIONS TO LUMINAIRES AS PERMITTED IN 410.117(C) PER NEC.

d. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW–ON.

e. SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN., COVER 0.25 IN. MATERIAL SHALL BE STEEL. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW–ON.

2) FITTINGS AND ACCESSORIES:

a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE CAST NOT PERMITTED.

b. ELECTROMETALLIC TUBING: COMPRESSION TYPE. GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER.

c. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT.

d. BUSHINGS: METALLIC INSULATED TYPE.

ELECTRICAL SPECIFICATIONS (CONT.)

3) BOXES:

a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1-1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2-3/4 IN. DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK-TO-BACK OUTLETS WITH MINIMUM 6 IN. SEPARATION.

b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. PROVIDE BARRIERS IN NEW AND RENOVATED BOXES BETWEEN 120/208 VOLT AND 265/460 VOLT WIRING AND BETWEEN EMERGENCY AND NORMAL WIRING. FLOOR BOXES SHALL BE SUITABLE FOR CONDUIT AND DEVICES NOTED. RAISED OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH ABOVE FLOOR FITTING. TELEPHONE: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL FLAP COVER WITH DUPLEX RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.

N. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS. PROVIDE U-BOLTS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND CONNECTED TO ACCEPTABLE SUPPORTS. PROVIDE RISER CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND RESTING ON SLAB. FOR THROUGH-THE-FLOOR SYSTEMS, UTILIZE AN ASSEMBLY SIMILAR TO HUBBELL FIRE RATED POKE-THROUGH-FLOOR BOX SYSTEM. FOR ABOVE FLOOR FITTINGS TELEPHONE SHALL BE BUSHED HOLE AND POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN POWER AND TELEPHONE COMPARTMENTS. PROVIDE JUNCTION BOX ON UNDERSIDE OF FLOOR. PACK FITTING TO RESTORE FIRE RATING OF FLOOR.

SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN THROUGH STRAPS IN METAL DECK. NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPLATES.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

EMPTY RACEWAYS OVER 10 FT LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE.

RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT MALE THREADS OF FIELD-THREADED CONDUIT WITH GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED. EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS, DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS. FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL. FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.

CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.

ALL COUPLINGS SHALL BE COMPRESSION TYPE. NO SET SCREW FITTINGS.

EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION.

RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT.

O. PROVIDE CABLE SUPPORTS IN ACCORDANCE WITH NATIONAL ELECTRIC CODE ARTICLE 300.19. CABLE SUPPORTS SHALL UTILIZE A ONE-PIECE PLUG WITH POZI-GRIP WEDGING PLUG AS MANUFACTIURED BY OZ-GEDNEY. TYPE SF SHALL BE USED FOR ARMORED CABLE.

INSTALL CABLE SUPPORTS AT THE TOP OF A VERTICAL RISE AND PROVIDE INTERMEDIATE ADDITIONAL SUPPORTS AS REQUIRED TO LIMIT SUPPORTED CONDUCTOR LENGTHS TO NOT GREATER THAN THOSE SPECIFIED IN TABLE 300.19(A).

P. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.

Q. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.

R. FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS, SLEEVES OR OPENINGS IN FIRE-PARTITIONS ROOMS.

S. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

9. WIRE AND CABLE:

A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG EXCEPT AS NOTED.

B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 100 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. AT 265 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM.

C. CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 12 MINIMUM. OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.

D. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE SFF-2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90 DEG C. FOR UNGROUNDED ISOLATED BRANCH CIRCUITS PROVIDE CROSS-LINKED POLYETHYLENE INSULATION (TYPE XHHW).

E. COLOR CODING SHALL BE AS FOLLOWS:

120/208 VOLT SYSTEM:
BLACK FOR A PHASE
RED FOR B PHASE
BLUE FOR C PHASE

1) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR TAPING IN ACCESSIBLE LOCATIONS.

G. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS.

H. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISEIZE COMPOUND ON TANG.

I. NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF 120/208 AND 265/460 VOLT SYSTEMS, EXCEPT 460 VOLT MOTOR BRANCH CIRCUIT WIRING AND RELATED 120 VOLT CONTROL WIRING. THERMOPLASTIC WIRES SHALL NOT BE INSTALLED IN COMPUTER AREA RAISED FLOORS.

J. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.

K. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS OVER 25 HP.

PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

11. WIRING DEVICES:

A. WIRING DEVICES SHALL BE SPECIFICATION GRADE UNLESS OTHERWISE SPECIFIED. ALL DEVICES SHALL BE FLUSH MOUNTED, UNLESS OTHERWISE NOTED. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS NOTED.

B. LOCAL WALL SWITCHES SHALL BE ROCKER TYPE, QUIET OPERATING, RATED 20 AMP, 120/208 VOLT, AC. SIMILAR TO LEVITON DECORA SERIES A5621 (SINGLE POLE), A5623 (3-WAY) AND A5624 (4-WAY).

C. STRAIGHT BLADE RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE DUPLEX CONVENIENCE 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT, DECORA SERIES BY LEVITON. GROUNDED, EXCEPT AS NOTED.

1) SINGLE GANG, RECESSED, DUPLEX RECEPTACLE: TAMPER RESISTANT, 2-POLE, 3-WIRE GROUNDING, 15A, 125V, NEMA 5-20R; LEVITON 689 SERIES (COLOR AS SPECIFIED BY ARCHITECT).
2) USB CHARGER/ DUPLEX TAMPER-RESISTANT RECEPTACLE: TAMPER RESISTANT,

E. DEVICE PLATES: SEE ARCHITECT FOR TYPE. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.

F. COLORS: COORDINATE COLORS WITH ARCHITECT.

G. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

12. LIGHTING FIXTURES:

A. FIXTURES TO BE AS SPECIFIED BY ARCHITECT AND SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY SOCKETS, BALLASTS, SUPPORTING HARDWARE AND ACCESSORIES. REFER TO DRAWINGS FOR INDIVIDUAL FIXTURE DESCRIPTIONS.

B. FIXTURE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. PROVIDE ACCESSORIES TO SUIT.

C. BALLAST: CLASS P, HIGH POWER FACTOR, LOWEST AVAILABLE NEMA RATED NOISE LEVEL, ET1 AND CBM APPROVED. ENERGY SAVING TYPE. TRIGGER START FOR 24-INCH LAMPS AND RAPID START FOR 48-INCH. TWO LAMP BALLASTS; NO THREE LAMP BALLASTS. BALLASTS SHALL BE ADVANCE MAGNETEK, UNIVERSAL OR EQUAL.

D. LED DRIVERS SHALL BE ELECTRONIC TYPE, LABELED AS COMPLIANT WITH RADIO FREQUENCY INTERFERENCE (RFI) REQUIREMENTS OF FCC TITLE 47, PART 15 AND COMPLY WITH NEMA SSL 1 "ELECTRONIC DRIVERS FOR LED DEVICES, ARRAYS OR SYSTEMS". LED DRIVERS SHALL HAVE A SOUND RATING OF "A", HAVE A MINIMUM EFFICIENCY OF 85% AND BE RATED FOR A THD OF LESS THAN 20% AT ALL INPUT VOLTAGES.

E. DIMMABLE LED DRIVERS SHALL BE CAPABLE OF DIMMING WITHOUT LED STROBING OR FLICKER ACROSS THEIR FULL DIMMING RANGE. PROVIDE TYPE OF LED DRIVER AS PER LIGHTING FIXTURE SCHEDULE, DIMMABLE LED DRIVERS SHALL BE 0-10V WHERE NOT INDICATED.

F. CONTINUOUS ROW, TWO LAMP STRIP FIXTURES SHALL BE STAGGERED TYPE.

G. FLUORESCENT LIGHTING FIXTURES, INCLUDING GENERAL CONSTRUCTION, LAMPS AND BALLASTS SHALL CONFORM TO THE ENERGY EFFICIENCY REQUIREMENTS OF CONSOLIDATED EDISON CO. AND QUALITY FOR A UTILITY REBATE TO OWNER UNDER CON EDISON'S ENLIGHTENED ENERGY LIGHTING REBATE PROGRAM. CONTRACTOR SHALL COORDINATE REBATE PROGRAM WITH CON EDISON AND ARRANGE FOR CON EDISON TO PERFORM A SURVEY TO INVENTORY ALL EXISTING FIXTURES PRIOR TO DEMOLITION.

H. EXIT SIGNS SHALL BE PRECISION DIE-CAST ALUMINUM HOUSING WITH LASER-FORMED ACRYLIC LEGEND. EXIT SIGNS SHALL COMPLY WITH UL 924 AND BE MEA APPROVED. AC POWERED WITH PREMIUM LONG-LIFE NICKEL CADMIUM BATTERY WITH STANDARD UL LISTED 3-HOUR RUN TIME. PROVIDE WITH INTEGRAL AUTOMATIC CHARGER IN A SELF CONTAINED POWER PACK. LED INDICATOR WITH PUSH TO TEST SWITCH.

13. TELEPHONE CONDUIT SYSTEM:

A. PROVIDE COMPLETE SYSTEM OF: RACEWAYS AND ACCESSORIES, OUTLET BOXES, SLEEVES AND FISHWIRES.

B. EQUIPMENT SHALL CONFORM TO REQUIREMENTS OF TELEPHONE COMPANY.

C. OUTLETS SHALL BE:

1) WALL: 4 IN. SQUARE WITH BUSHED COVER PLATE.

D. PROVIDE FISHWIRES, IN RACEWAYS OVER 10 FT LONG.

E. CONDUIT SHALL BE 3/4 IN. MINIMUM. FURNISH EMPTY CONDUIT FROM OUTLET BOX TO BUSHED END THRU WALL 6" BELOW THE PLASTER CEILING.

F. FACE RACEWAYS IN ROOMS SHALL HUBBELL HBL500, HBL750 OR HBL2000 SERIES OR AS ACCEPTABLE.

14. GROUNDING AND BONDING:

A. PROVIDE GROUNDING SYSTEM IN ACCORDANCE WITH (2017) NATIONAL ELECTRICAL CODE), AND THESE SPECIFICATIONS. THE WIRING SYSTEM SHALL BE INSTALLED AS REQUIRED TO PROVIDE A CONTINUOUSLY GROUNDED SYSTEM. WHERE FLEXIBLE CONDUIT IS USED FOR PART OF A CONDUIT RUN, EXCEPT LIGHTING BRANCH CIRCUITS, AN INSULATED GROUNDING CONDUCTOR SHALL BE PROVIDED IN THE CONDUIT AND CONNECTED TO GROUNDING BUSHINGS AT EACH END OF THE RUN.

B. USE EXOTHERMIC WELDING PROCESS FOR INACCESSIBLE CONNECTIONS.

C. EXTEND EXISTING SYSTEM GROUND TO INCLUDE ALL THE ELECTRICAL EQUIPMENT IN THE SCOPE OF WORK.

D. WHERE FLEXIBLE METALLIC CONDUIT IS USED AN INTERNAL BONDING CONDUCTOR SHALL BE INSTALLED.

E. IN ADDITION, FURNISH A SEPARATE INSULATED GREEN EQUIPMENT GROUND CONDUCTOR WHERE INDICATED ON DRAWINGS AND FOR THE FOLLOWING BRANCH CIRCUITS:

1) CIRCUITS SERVING ANY WALL BOX DIMMER.

2) CIRCUITS SERVING ANY ISOLATED GROUND RECEPTACLES. TERMINATE GROUND DIRECTLY AT AN EQUIPMENT GROUNDING CONDUCTOR TERMINAL OF THE SOURCE AT THE SOURCE , OR AS OTHER WISE NOTED ON DRAWINGS.

3) CIRCUITS SERVING ANY DUPLEX OR SIMPLEX COMPUTER RECEPTACLES

4) ANY CIRCUIT SERVED VIA AN ISOLATION TRANSFORMER OR COMPUTER POWER DISTRIBUTION UNIT.

15. PANELBOARDS:

A. PANELBOARDS SHALL BE OF THE DEAD FRONT TYPE MANUFACTURED IN CODE GAUGE AND SIZE BOXES FOR MOUNTING AS INDICATED ON PLANS COMPLETE WITH TRIM, DOORS AND LOCKS. ALL LOCKS SHALL BE KEYED ALIKE.

B. CIRCUIT BREAKERS SHALL BE OF THE BOLT-ON THERMAL MAGNETIC MOLDED CASE TYPE, AND SHALL HAVE THE TRIP RATINGS AND NUMBER OF POLES SHOWN IN SCHEDULES ON THE CONTRACT DRAWINGS. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL RATED BUS. MINIMUM GUTTER SPACES SHALL BE 5-3/4". SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. PROVIDE 25% COPPER GROUND BUS AND 100% COPPER NEUTRAL BUS AND INCREASE NEUTRAL BUS INDICATED.

C. LOCKING TABS SHALL BE PROVIDED ON ALL CIRCUIT BREAKERS SERVING EMERGENCY LIGHTING, FIRE ALARM SYSTEM, SECURITY SYSTEMS AND OTHER EMERGENCY OR CRITICAL EQUIPMENT AND AS NOTED ON THE CONTRACT DRAWINGS. A TOTAL OF 5 SPARE LOCKING TABS SHALL BE FURNISHED TO THE OWNER.

D. BUSES SHALL BE HARD DRAWN COPPER OF 98 PERCENT CONDUCTIVITY AND SHALL HAVE CROSS SECTIONAL AREAS LARGE ENOUGH TO LIMIT THE TEMPERATURE RISE, WHEN CARRYING FULL LOAD, TO 35 DEGREES C. ABOVE AN AMBIENT INSIDE THE ENCLOSURE OF 55 DEGREES C. AS DEFINED IN IEEE STANDARD RULES. MAIN BUS CAPACITY SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.

E. ENCLOSURES SHALL BE SURFACE OR FLUSH AS INDICATED. TRIMS SHALL BE SECURED TO PANEL WITH MACHINE SCREWS. COVERS SHALL BE HINGED DOOR-IN-DOOR CONSTRUCTION WITH CYLINDER LOCKS AND CATCHES. LOCKS MUST BE COMPATIBLE WITH BUILDING STANDARD KEY SYSTEM AND WHEN NONE EXISTS, THEY SHALL BE SIMILAR TO A YALE NO. 911 KEY.

F. DISTRIBUTION AND SUB-DISTRIBUTION PANELBOARD SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.

G. ALL STANDARD PANELBOARDS SHALL BE A MINIMUM OF 20" WIDE AND 5 3/4" DEEP.

H. FURNISH ALL PANELBOARDS WITH FEED-THRU LUGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

I. ALL NEW PANELBOARDS SHALL BE PROVIDED WITH AN ENGRAVED WHITE CORE LAMACOID NAMEPLATE, WITH 3/4 IN. WHITE LETTERING ON A BLACK BACKGROUND, WITH DESIGNATION LISTED (PANELBOARD NAME), FASTENED WITH EPOXY CEMENT OR OVAL HEAD CHROME PLATED MACHINE SCREWS.

J. THE CIRCUIT DIRECTORY SHALL BE TYPEWRITTEN AND PROVIDED INSIDE EACH PANEL DOOR TO INDICATE EQUIPMENT AND/OR AREA SERVED. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. THE TYPEWRITTEN LIST INDICATING CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.

K. TIE-BARS SHALL NOT BE USED TO CREATE MULTI-POLE CIRCUITS. MAXIMUM 42 CIRCUITS ALLOWED.

L. ONLY ONE WIRE SHALL BE INSTALLED UNDER EACH CIRCUIT BREAKER LUG.

M. SHORT CIRCUIT RATING OF PANELBOARDS SHALL NOT BE LESS THAN AS INDICATED ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN. WHERE NOT INDICATED OR SPECIFIED THE MINIMUM SHORT CIRCUIT RATING SHALL BE EQUAL TO THE INTERRUPTING CAPACITY OF THE LOWEST RATED CIRCUIT BREAKER IN THE PANELBOARD, BUT IN NO CASE LESS THAN 10,000 AMPERES R.M.S. SYMMETRICAL FOR 208Y/120 VOLT SYSTEM. SERIES RATED PANELBOARDS SHALL BE USED TO ACHIEVE REQUIRED SHORT CIRCUIT RATINGS.

N. FOR ALL EXISTING PANELBOARDS, CONTRACTOR SHALL PROVIDE NEW CIRCUIT BREAKERS TO REPLACE EXISTING AS REQUIRED AS INDICATED ON DRAWINGS.

REV	DATE	BY	REVISION
1	07/18/2023	NYE	REVISION 1

MODULUS ARCHITECTS AND LAND USE PLANNING
8220 SAN PEDRO DR. N.E. SUITE 520
ALBUQUERQUE, NEW MEXICO 87102
PHONE (505) 338-1499 FAX (505) 338-1498

LICENSED PROFESSIONAL ENGINEER MICHAEL D. TOBIAS 062.071542 OF ILLINOIS

PROJECT TITLE: GRAND LEGACY GROUP
450 SHEPARD DR.
ELGIN, ILLINOIS

PROJECT MANAGER: MICHAEL TOBIAS, PE
JOB NO.: ELGIN-GLG
DRAWN BY: NYE

SHEET TITLE: ELE. SPEC.SHEET 2OF2

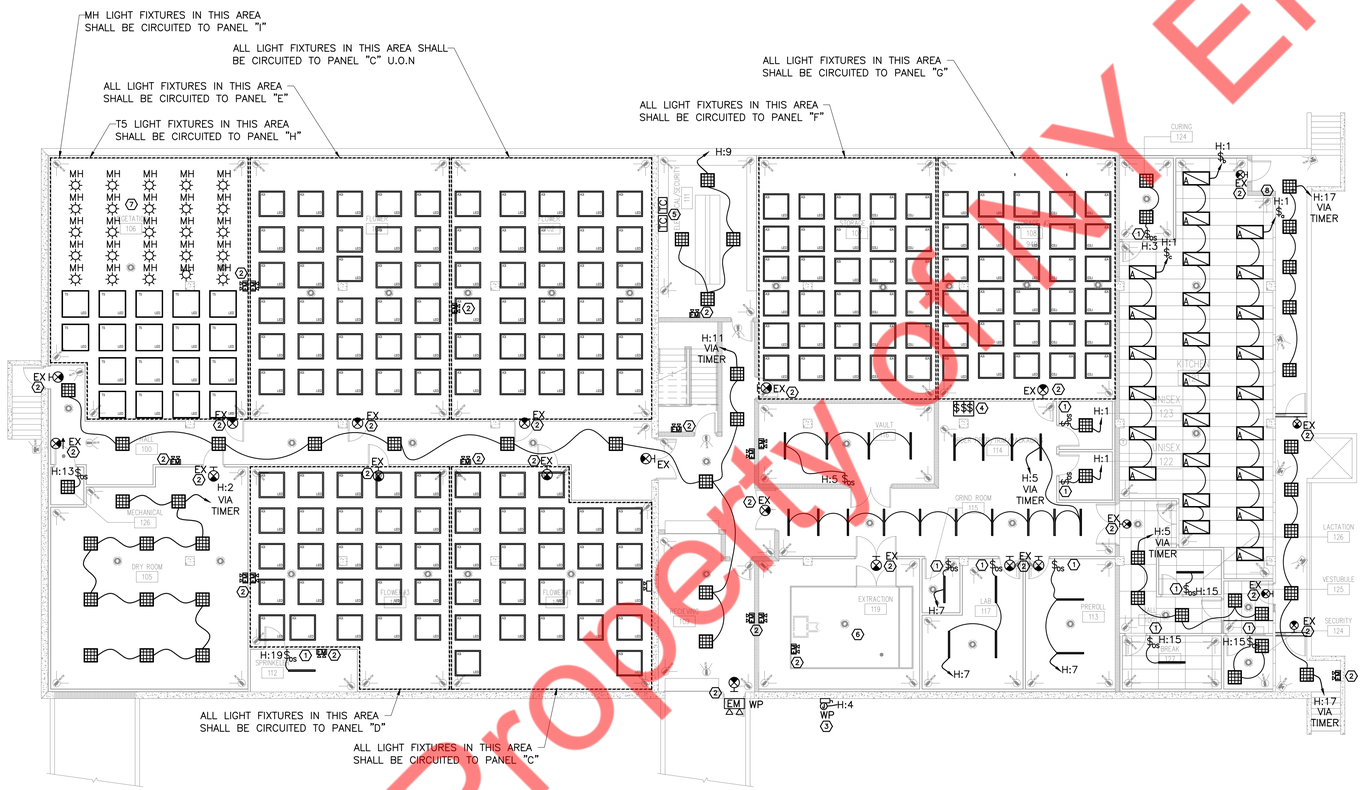
DATE: 1/23/2024
SCALE: N.T.S.

E1.3

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	TYPE	WATTAGE
A3i	LED WRAPAROUND FIXTURE	TBD	TBD	LED	1500W
A	2X4 LAY-IN LED LIGHT FIXTURE (SURFACE MOUNT)	LSI	SPF24-LED50-50-UE-DIM-35-U	LED	50W
B	2X2 LAY-IN TROFFER	CREE	CR22-32L-35K-S-HD	LED	35W
C	PENDANT LED 1X4	METALUX	4WSNLED-LD4-64HL-F-UNV-L830-CD1-U	LED	73W
D	2X2 LAY-IN TROFFER (SURFACE MOUNT)	TBD	TBD	LED	35W
T5	4' LED GROW LIGHT	AG	TBD	LED	25W
MH	METAL HALIDE LIGHT	LUX/TBD	TBD	LED	970W
EX	COMBINATION OF EXIT AND EMERGENCY LED LIGHT	SURE-LITES	APC	LED	
EM	EMERGENCY LIGHT LED	SURE-LITES	APC	LED	

NOTE: 1. VERIFY FINAL SELECTION OF LIGHT FIXTURE WITH ARCHITECT/OWNER PRIOR TO BID.



1 ELECTRICAL LIGHTING PLAN – LEVEL 1
1" = 3/32"

NOTES:

GENERAL NOTES:

1. VERIFY ALL LUMINAIRE COLORS, TRIMS, LENGTHS, ETC. WITH THE ARCHITECT PRIOR TO PLACING FINAL PURCHASE ORDERS. SUBMISSION PF SHOP DRAWINGS WILL BE INTERPRETED AS HAVING BEEN COORDINATED WITH THE ARCHITECTURAL DRAWINGS.
2. PROVIDE ALL LENGTHS, FEEDS, ACCESSORIES, CONNECTORS, WIRING, POWER SUPPLIES, DRIVERS ETC. FOR A COMPLETE INSTALLATION. THE E.C. SHALL VERIFY THE COMPLETE BILL OF MATERIAL WITH MANUFACTURER'S REPRESENTATIVE AND ENSURE ALL EQUIPMENT ARE INCLUDED IN BID PRICE. COORDINATE INSTALLATION WITH ARCHITECTURAL DETAILS.
3. VERIFY FINAL LUMINAIRE LOCATIONS WITH OTHER CEILING MOUNTED EQUIPMENTS SUCH AS DIFFUSER WITH ARCHITECTURAL REFLECTED CEILING PLANS.
4. VERIFY EXACT MOUNTING HEIGHT AND LOCATIONS OF ALL WALL MOUNTED LUMINAIRE WITH ARCHITECTURAL PLANS AND ELEVATIONS PRIOR TO ROUGH-IN.
5. ANY PROPOSED ALTERNATE LUMINAIRES SHALL BE APPROVED BY THE ARCHITECT PRIOR TO FINAL BID PRICING.
6. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS, EQUIPMENT AND DEVICES OTHER THAN THOSE SPECIFIED AND LISTED, THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS, TO THE ENGINEERS AT LEAST TEN (10) BUSINESS DAYS PRIOR TO BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID AND SHALL INCLUDE A COMPLETE SPECIFICATIONS CUTSHEET SUBMITTAL AS OUTLINED IN THE SPECIFICATIONS, COMPLETE WITH DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. INDICATE ANY ADDITIONS OR DEDUCTIONS TO THE CONTRACT PRICE WITH THE SUBSTITUTION SUBMITTAL AND ON THE BID FORM.
7. VERIFY FINAL SELECTION OF LIGHT FIXTURE WITH ARCHITECT.
8. ANY WORK AFFECTING LANDLORD'S BASE BUILDING-SUCH AS SPRINKLER SYSTEM, HVAC SYSTEM, ROOF WORK OR ELECTRICAL WORK OUTSIDE LEASED AREA WILL BE REQUIRED TO BE PERFORMED BY A LANDLORD DESIGNATED OR APPROVED CONTRACTOR AND BE ENGAGED BY THE TENANT AT THE TENANTS EXPENSE.

LIGHTING PLAN GENERAL NOTES:

1. CONTRACTOR IS ADVISED THAT ADJUSTMENTS TO EMERGENCY AND EXIT LIGHT FIXTURE LOCATIONS/QUANTITIES MAY BE REQUIRED BY AHJ UPON FINAL INSPECTION.
2. ALL NIGHT LIGHT, EMERGENCY AND EXIT LIGHT FIXTURES SHALL BE CONNECTED AHEAD OF SWITCHED LIGHTING CIRCUIT.
3. UNLESS OTHERWISE NOTED, LIGHT SWITCHES SHALL BE GANGED TOGETHER UNDER A COMMON FACEPLATE.
4. PROVIDE A GROUND WIRE IN ALL RACEWAYS AND NEUTRAL WIRE AT EACH SWITCH BOX LOCATION.
5. PROVIDE JUNCTION BOX FOR SECURITY CAMERA. PROVIDE NECESSARY WIRING, BREAKER, AND BRANCH CIRCUIT AS REQUIRED. COORDINATE WITH THE OWNER FOR EXACT LOCATION AND FOR POWER REQUIREMENTS COORDINATE WITH THE LV VENDOR.

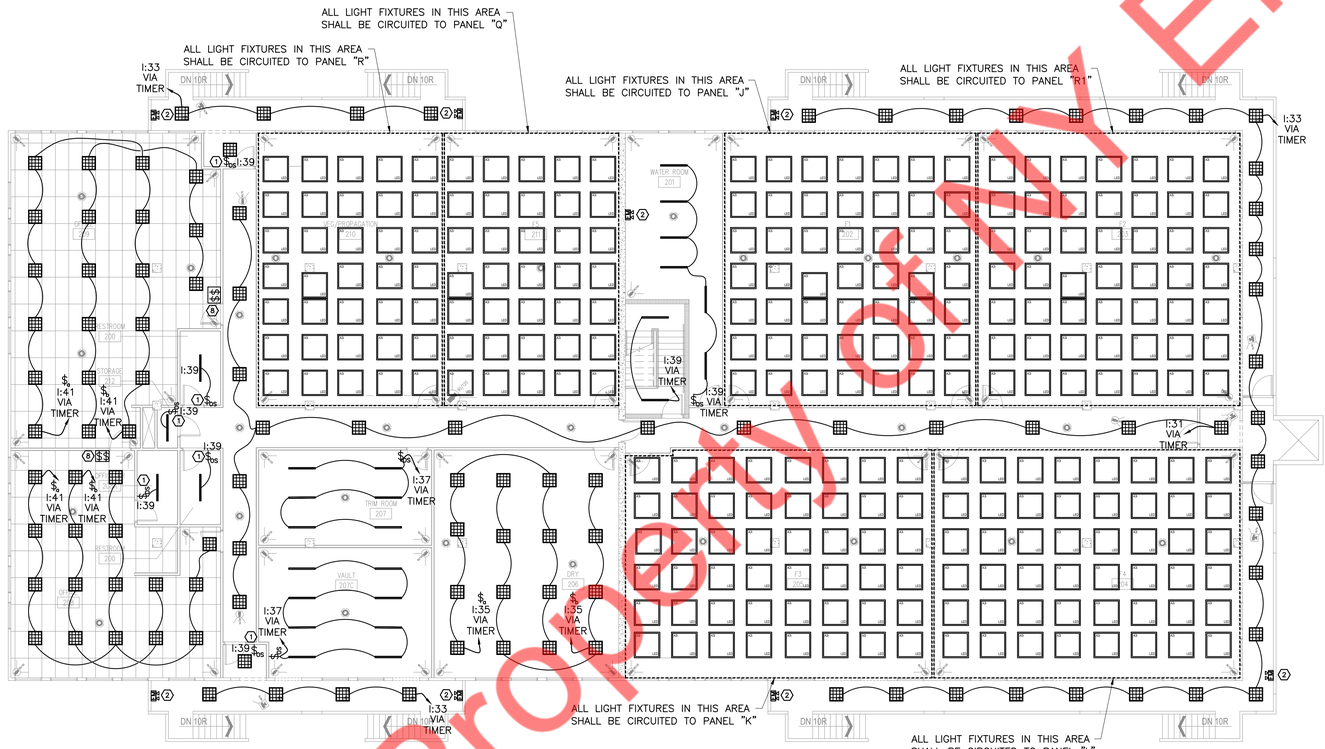
LIGHTING KEYED NOTES: (#)

1. WALL MOUNTED OCCUPANCY SENSOR. SET OFF TIME TO 15 MINUTES FOR RESTROOM, SET DIP SWITCH TO AUTOMATIC ON.
2. WIRE ALL EMERGENCY, EXIT LIGHT AHEAD OF SWITCHING FOR CONTINUOUS OPERATIONS. CONNECT TO ADJACENT LIGHTING CIRCUIT.
3. JUNCTION BOX WITH TOGGLE DISCONNECT PER NEC FOR CONNECTION TO BUILDING MOUNTED SIGNAGE. VERIFY EXACT LOCATION AND CONNECT TO SIGN PER MANUFACTURE'S INSTRUCTION.
4. COORDINATE EXACT LOCATION OF SWITCH BANK WITH ARCHITECT/OWNER. PROVIDE REQUIRED QUANTITY OF THE SWITCHES ACCORDINGLY.
5. COORDINATE EXACT LOCATION OF TIME CLOCK WITH ARCHITECT/OWNER.
6. EXTRACTION ROOM LIGHTS ARE PROVIDED BY EXTRACTION ROOM MANUFACTURER. CONNECT EXTRACTION ROOM LIGHTS TO ADJACENT LIGHTING CIRCUIT AND COORDINATE WITH EXTRACTION ROOM MANUFACTURER FOR THE CONTROLS OF THE EXTRACTION ROOM LIGHTS.
7. TYPE "MH" LIGHTING SHALL BE CIRCUITED TO PANEL I. E.C. TO COORDINATE WITH LIGHTING MANUFACTURER FOR EXACT POWER REQUIREMENT. PROVIDE NECESSARY WIRING, BREAKER AND BRANCH CIRCUIT AS REQUIRED.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	TYPE	WATTAGE
A3i	LED WRAPAROUND FIXTURE	TBD	TBD	LED	1500W
A	2X4 LAY-IN LED LIGHT FIXTURE (SURFACE MOUNT)	LSI	SPF24-LED50-50-UE-DIM-35-U	LED	50W
B	2X2 LAY-IN TROFFER	CREE	CR22-32L-35K-S-HD	LED	35W
C	PENDANT LED 1X4	METALUX	4WSNLED-LD4-64HL-F-UNV-L830-CD1-U	LED	73W
D	2X2 LAY-IN TROFFER (SURFACE MOUNT)	TBD	TBD	LED	35W
T5	4' LED GROW LIGHT	AG	TBD	LED	25W
MH	METAL HALIDE LIGHT	LUX/TBD	TBD	LED	970W
EX	COMBINATION OF EXIT AND EMERGENCY LED LIGHT	SURE-LITES	APC	LED	
EM	EMERGENCY LIGHT LED	SURE-LITES	APC	LED	

NOTE: 1. VERIFY FINAL SELECTION OF LIGHT FIXTURE WITH ARCHITECT/OWNER PRIOR TO BID.



1 ELECTRICAL LIGHTING PLAN – LEVEL 2
1" = 1/32"

NOTES:

GENERAL NOTES:

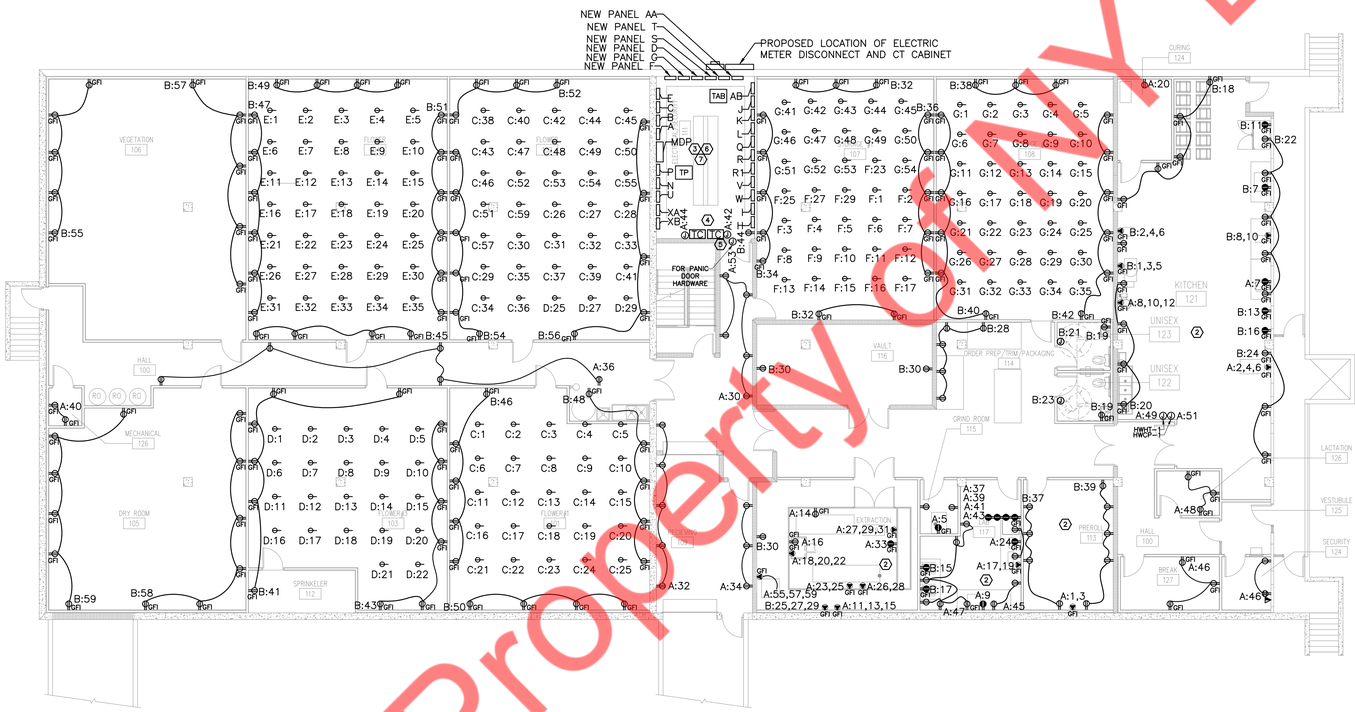
1. VERIFY ALL LUMINAIRE COLORS, TRIMS, LENGTHS, ETC. WITH THE ARCHITECT PRIOR TO PLACING FINAL PURCHASE ORDERS. SUBMISSION PF SHOP DRAWINGS WILL BE INTERPRETED AS HAVING BEEN COORDINATED WITH THE ARCHITECTURAL DRAWINGS.
2. PROVIDE ALL LENGTHS, FEEDS, ACCESSORIES, CONNECTORS, WIRING, POWER SUPPLIES, DRIVERS ETC. FOR A COMPLETE INSTALLATION. THE E.C. SHALL VERIFY THE COMPLETE BILL OF MATERIAL WITH MANUFACTURER'S REPRESENTATIVE AND ENSURE ALL EQUIPMENT ARE INCLUDED IN BID PRICE. COORDINATE INSTALLATION WITH ARCHITECTURAL DETAILS.
3. VERIFY FINAL LUMINAIRE LOCATIONS WITH OTHER CEILING MOUNTED EQUIPMENTS SUCH AS DIFFUSER WITH ARCHITECTURAL REFLECTED CEILING PLANS.
4. VERIFY EXACT MOUNTING HEIGHT AND LOCATIONS OF ALL WALL MOUNTED LUMINAIRE WITH ARCHITECTURAL PLANS AND ELEVATIONS PRIOR TO ROUGH-IN.
5. ANY PROPOSED ALTERNATE LUMINAIRES SHALL BE APPROVED BY THE ARCHITECT PRIOR TO FINAL BID PRICING.
6. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS, EQUIPMENT AND DEVICES OTHER THAN THOSE SPECIFIED AND LISTED, THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS, TO THE ENGINEERS AT LEAST TEN (10) BUSINESS DAYS PRIOR TO BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID AND SHALL INCLUDE A COMPLETE SPECIFICATIONS CUTSHEET SUBMITTAL AS OUTLINED IN THE SPECIFICATIONS, COMPLETE WITH DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. INDICATE ANY ADDITIONS OR DEDUCTIONS TO THE CONTRACT PRICE WITH THE SUBSTITUTION SUBMITTAL AND ON THE BID FORM.
7. VERIFY FINAL SELECTION OF LIGHT FIXTURE WITH ARCHITECT.
8. ANY WORK AFFECTING LANDLORD'S BASE BUILDING-SUCH AS SPRINKLER SYSTEM, HVAC SYSTEM, ROOF WORK OR ELECTRICAL WORK OUTSIDE LEASED AREA WILL BE REQUIRED TO BE PERFORMED BY A LANDLORD DESIGNATED OR APPROVED CONTRACTOR AND BE ENGAGED BY THE TENANT AT THE TENANTS EXPENSE.

LIGHTING PLAN GENERAL NOTES:

1. CONTRACTOR IS ADVISED THAT ADJUSTMENTS TO EMERGENCY AND EXIT LIGHT FIXTURE LOCATIONS/QUANTITIES MAY BE REQUIRED BY AHJ UPON FINAL INSPECTION.
2. ALL NIGHT LIGHT, EMERGENCY AND EXIT LIGHT FIXTURES SHALL BE CONNECTED AHEAD OF SWITCHED LIGHTING CIRCUIT.
3. UNLESS OTHERWISE NOTED, LIGHT SWITCHES SHALL BE GANGED TOGETHER UNDER A COMMON FACEPLATE.
4. PROVIDE A GROUND WIRE IN ALL RACEWAYS AND NEUTRAL WIRE AT EACH SWITCH BOX LOCATION.
5. PROVIDE JUNCTION BOX FOR SECURITY CAMERA. PROVIDE NECESSARY WIRING, BREAKER, AND BRANCH CIRCUIT AS REQUIRED. COORDINATE WITH THE OWNER FOR EXACT LOCATION AND FOR POWER REQUIREMENTS COORDINATE WITH THE LV VENDOR.

LIGHTING KEYED NOTES: (#)

1. WALL MOUNTED OCCUPANCY SENSOR. SET OFF TIME TO 15 MINUTES FOR RESTROOM, SET DIP SWITCH TO AUTOMATIC ON.
2. WIRE ALL EMERGENCY, EXIT LIGHT AHEAD OF SWITCHING FOR CONTINUOUS OPERATIONS. CONNECT TO ADJACENT LIGHTING CIRCUIT.
3. JUNCTION BOX WITH TOGGLE DISCONNECT PER NEC FOR CONNECTION TO BUILDING MOUNTED SIGNAGE. VERIFY EXACT LOCATION AND CONNECT TO SIGN PER MANUFACTURE'S INSTRUCTION.
4. COORDINATE EXACT LOCATION OF SWITCH BANK WITH ARCHITECT/OWNER. PROVIDE REQUIRED QUANTITY OF THE SWITCHES ACCORDINGLY.
5. COORDINATE EXACT LOCATION OF TIME CLOCK WITH ARCHITECT/OWNER.
6. EXTRACTION ROOM LIGHTS ARE PROVIDED BY EXTRACTION ROOM MANUFACTURER. CONNECT EXTRACTION ROOM LIGHTS TO ADJACENT LIGHTING CIRCUIT AND COORDINATE WITH EXTRACTION ROOM MANUFACTURER FOR THE CONTROLS OF THE EXTRACTION ROOM LIGHTS.
7. TYPE "MH" LIGHTING SHALL BE CIRCUITED TO PANEL I. E.C. TO COORDINATE WITH LIGHTING MANUFACTURER FOR EXACT POWER REQUIREMENT. PROVIDE NECESSARY WIRING, BREAKER AND BRANCH CIRCUIT AS REQUIRED.



1 ELECTRICAL POWER PLAN – LEVEL 1
1" = 3/32"

POWER PLAN GENERAL NOTES

1. ALL RECEPTACLES IN KITCHEN OR WET AREA SHALL BE "GFCI" IN ACCORDANCE WITH NEC ARTICLE 210.8(B). PROVIDE GFI RATED BREAKER AT PANEL FOR KITCHEN EQUIPMENT.
2. COORDINATE WITH ARCHITECT FOR PLACEMENT OF DEVICES.
3. COORDINATE EXACT LOCATION OF HVAC EQUIPMENTS ON ABOVE CEILING WITH MECHANICAL CONTRACTOR.
4. ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER FOR FINAL SELECTION PRIOR TO ROUGH-IN. E.C. COORDINATE LOCATION OF DISCONNECT SWITCH WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT SUPPLIER/OWNER AND PROVIDE PLUGS / DISCONNECTS AS REQUIRED. IF ANY EQUIPMENT NEEDS TO BE TERMINATED AS A HARD WIRE, IT IS THE CONTRACTOR RESPONSIBILITY TO PROVIDE THE CONNECTION WITH SUITABLE DISCONNECT / PLUG. BASE BID ACCORDINGLY.
6. ANY WORK AFFECTING LANDLORD'S BASE BUILDING-SUCH AS SPRINKLER SYSTEM, HVAC SYSTEM, ROOF WORK OR ELECTRICAL WORK OUTSIDE LEASED AREA WILL BE REQUIRED TO BE PERFORMED BY A LANDLORD DESIGNATED OR APPROVED CONTRACTOR AND BE ENGAGED BY THE TENANT AT THE TENANTS EXPENSE.
7. PROVIDE A GROUND WIRE IN ALL RACEWAYS AND NEUTRAL WIRE AT EACH SWITCH BOX LOCATION.
8. ALL RECEPTACLES REQUIRE A PIGTAIL GROUNDING WIRE TO THE BOX.

POWER PLAN NOTES: (#)

1. E.C TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF MECHANICAL EQUIPMENTS WITH MECHANICAL CONTRACTOR. PROVIDE THE ELECTRICAL CONNECTION AS PER MECHANICAL EQUIPMENTS REQUIREMENT IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.
2. ELECTRICAL DEVICES SHOWN FOR THE EXTRACTION ROOM, KITCHEN, PREROLL & LAB EQUIPMENT ARE FOR THE REFERENCE ONLY. CONTRACTOR TO VERIFY EXACT CONNECTION DETAILS, POWER REQUIREMENT, WIRE SIZES, BREAKER RATINGS WITH THE EQUIPMENT MANUFACTURER AND PROVIDE ACCORDINGLY. ANY DISCREPANCIES/ADJUSTMENTS REQUIRED SHALL BE COMMUNICATED WITH ENGINEER ON RECORD PRIOR TO BIDDING/ROUGH IN.
3. SWITCHGEAR DIMENSIONS SHOWN HERE ARE FOR REFERENCE ONLY. EXACT DIMENSIONS OF THE SWITCHGEAR SHALL BE AS PER MANUFACTURER SPECIFICATIONS.
4. TIME CLOCKS FOR CONTROLLING THE GROW ROOM LIGHTS AND GENERAL LIGHTING. COORDINATE EXACT LOCATION IN FIELD.
5. PROVIDE JUNCTION BOX FOR ELECTRICAL CONNECTIONS TO PANIC DOOR HARDWARE. E.C. TO COORDINATE WITH MANUFACTURER FOR POWER REQUIREMENT AND EXACT LOCATION OF THE JUNCTION BOX AND PROVIDE NECESSARY WIRING.
6. PROVIDE ARC FLASH WARNING FOR QUALIFIED PERSONS AS STATED IN NEC 110.16. THIS WARNING LABEL SHALL IDENTIFY THE DEGREE OR LEVEL OF POTENTIAL FLASH HAZARD THAT IS PRESENT IN THE INSTALLATION SO THAT THE APPROPRIATE FLASH PROTECTION CLOTHING (PPE) WILL BE WORN.
7. E.C. TO PROVIDE CLEARANCE PER NEC AND MAKE REQUIRED SET-UP ARRANGEMENTS TO POSITION ALL EQUIPMENT IN ACCORDANCE WITH RISER DIAGRAM.
8. E.C. SHALL COORDINATE WITH THE ELEVATOR VENDOR FOR EXACT POWER REQUIREMENT AND CONNECTION DETAILS. PROVIDE NECESSARY WIRING, CIRCUIT AND CONTROL AS REQUIRED, PRIOR TO BID. BASE BID ACCORDINGLY.
9. ELEVATOR CAR LIGHTING CIRCUIT DISCONNECT (120V, 1ø). TO BE LOCATED IN COORDINATION WITH THE VENDOR.
10. PROVIDE SHUNT TRIP DEVICE AND NON FUSED DISCONNECT. IF NOT PROVIDED BY VENDOR. BASE BID ACCORDINGLY.

COORDINATE WITH ARCHITECT TO CONFIRM COLOR OF RECEPTACLES PRIOR TO ORDERING.

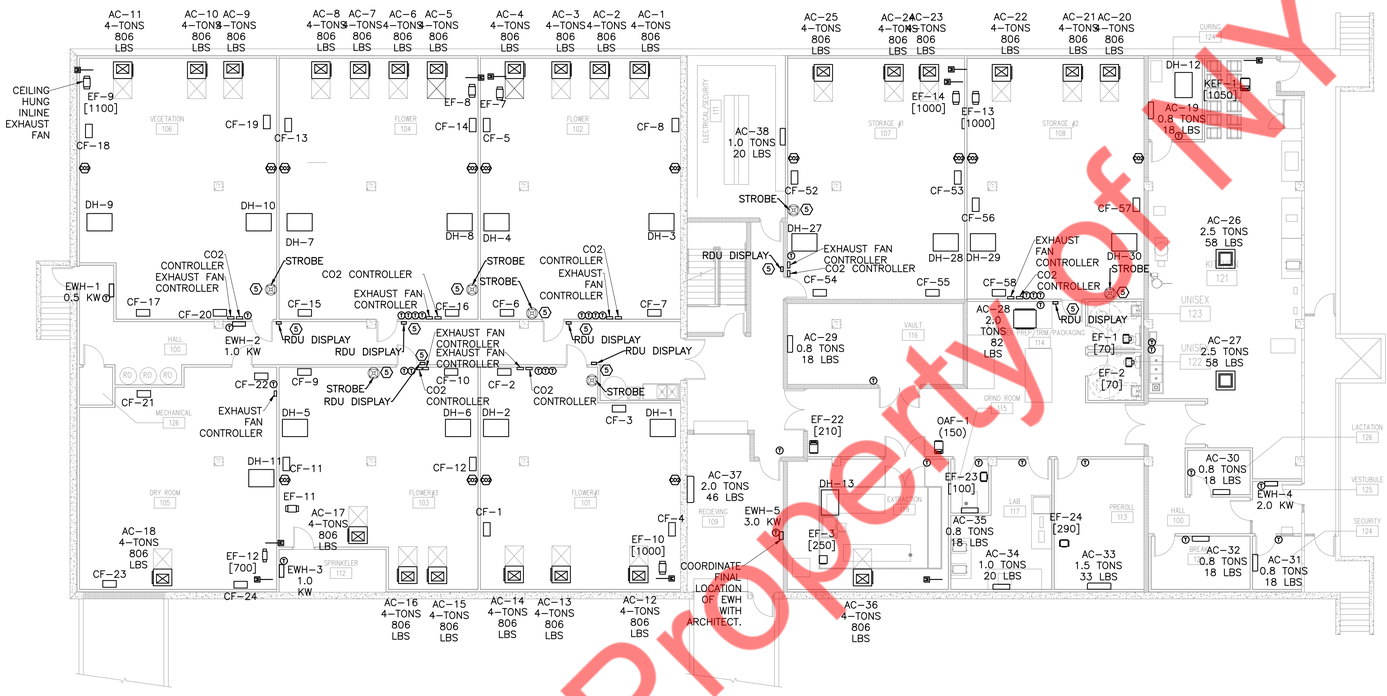
POWER PLAN GENERAL NOTES

1. ALL RECEPTACLES IN KITCHEN OR WET AREA SHALL BE "GFCI" IN ACCORDANCE WITH NEC ARTICLE 210.8(B). PROVIDE GFI RATED BREAKER AT PANEL FOR KITCHEN EQUIPMENT.
2. SEE ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES.
3. SEE SHEET E-3 FOR POINT OF SALES POWER AND DATA WIRING.
4. COORDINATE EXACT LOCATION OF HVAC EQUIPMENTS ON ABOVE CEILING WITH MECHANICAL CONTRACTOR.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER FOR FINAL SELECTION PRIOR TO ROUGH-IN. E.C. COORDINATE LOCATION OF DISCONNECT SWITCH WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT SUPPLIER/OWNER AND PROVIDE PLUGS / DISCONNECTS AS REQUIRED. IF ANY EQUIPMENT NEEDS TO BE TERMINATED AS A HARD WIRE, IT IS THE CONTRACTOR RESPONSIBILITY TO PROVIDE THE CONNECTION WITH SUITABLE DISCONNECT / PLUG. BASE BID ACCORDINGLY.
7. ANY WORK AFFECTING LANDLORD'S BASE BUILDING-SUCH AS SPRINKLER SYSTEM, HVAC SYSTEM, ROOF WORK OR ELECTRICAL WORK OUTSIDE LEASED AREA WILL BE REQUIRED TO BE PERFORMED BY A LANDLORD DESIGNATED OR APPROVED CONTRACTOR AND BE ENGAGED BY THE TENANT AT THE TENANTS EXPENSE.
8. PROVIDE A GROUND WIRE IN ALL RACEWAYS AND NEUTRAL WIRE AT EACH SWITCH BOX LOCATION.

NOTES:

HVAC POWER NOTES:

1. E.C TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF MECHANICAL EQUIPMENTS WITH MECHANICAL CONTRACTOR. PROVIDE THE ELECTRICAL CONNECTION AS PER MECHANICAL EQUIPMENTS REQUIREMENT IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.
2. CONTRACTOR TO VERIFY CONTROL METHOD FOR CIRCULATION FANS AND PROVIDE MOTORIZED SWITCH/DISCONNECT ACCORDINGLY.
3. E.C. TO COORDINATE WITH THE PLUMBING CONTRACTOR FOR THE EXACT LOCATION AND POWER REQUIREMENTS FOR THE CONDENSATE DRAIN PUMP. PROVIDE NECESSARY WIRING, BREAKER, CONTROL AND BRANCH CIRCUIT AS REQUIRED.
4. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM.
5. PER AHJ AND PUBLIC ACT 094-0741 THE CARBON MONOXIDE ALARMS REQUIRED UNDER THIS ACT MAY BE EITHER BATTERY POWERED, PLUG-IN WITH BATTERY BACK-UP, OR WIRED INTO THE STRUCTURE'S AC POWER LINE WITH SECONDARY BATTERY BACK-UP. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM. MAKE PROVISION ACCORDINGLY.



1 ELECTRICAL POWER PLAN - LEVEL 1 (HVAC)
1" = 3/32"

ELECTRIC WALL HEATERS SCHEDULE

UNIT TAG	KW	ELECTRIC DATA (V/PH/HZ)	AMPS	QTY (NOS	PANEL NAME	CIRCUIT NO.
EWH-1	0.5	120/1/60	4.2	2	XA	25
EWH-2	1	120/1/60	8.4	1	XA	27
EWH-3	1	120/1/60	8.4	1	XA	29
EWH-4	2	240/1/60	8.4	1	AB	36,38
EWH-5	3	240/1/60	12.5	1	AB	40,42
EWH-6	1	120/1/60	8.4	1	XA	31
EWH-7	2	240/1/60	8.4	1	AB	32,34
EWH-8	0.5	120/1/60	4.2	2	XA	33
EWH-9	0.5	120/1/60	4.2	2	XA	35

NOTES:
1) PROVIDE DISCONNECTION SWITCH.
2) REFER TO THE PANEL SCHEDULE FOR MORE DETAILS.

ELECTRICAL FAN SCHEDULE

UNIT ID	VOLTS/PH	FLA(A)	PANEL NAME	CIRCUIT NO.
EF-1	115/1	0.29	P	62
EF-2	115/1	0.29	P	64
EF-3	115/1	1	P	66
EF-4	115/1	0.29	N	38
EF-5	115/1	0.29	N	40
EF-6	115/1	0.29	N	42
EF-7	240/1	2.7	AB	1,3
EF-8	240/1	2.7	AB	2,4
EF-9	240/1	2.7	AB	5,7
EF-10	240/1	2.7	AB	6,8
EF-11	240/1	2.7	AB	9,11
EF-12	240/1	2.3	AB	10,12
EF-13	240/1	2.7	AB	13,15
EF-14	240/1	2.7	AB	14,16
EF-15	240/1	2.7	AB	17,19
EF-16	240/1	2.7	AB	18,20
EF-17	240/1	2.3	AB	21,23
EF-18	240/1	2.5	AB	22,24
EF-19	240/1	2.5	AB	25,27
EF-20	240/1	2.5	AB	26,28
EF-21	240/1	2.5	AB	29,31
EF-22	115/1	3.8	XB	35
EF-23	115/1	0.29	XB	37
EF-24	115/1	3.8	XB	39
EF-25	115/1	0.29	XB	41
KEF	115/1	0.12	P	68
OAF-1	115/1	3.8	P	70
			P	72

NOTE:
1. COORDINATE WITH THE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. PROVIDE POWER AND CONTROL ACCORDINGLY.
3. REFER PANEL SCHEDULE MORE DETAILS. (PANEL P, N, AB AND XB)

CONDENSATE DRAIN PUMP

UNIT TAG	ELECTRICAL DATA		
	PH/VOLT/HZ	MCA (A)	MOP (A)
AC-1	1/115/60	1.5	20
AC-2	1/115/60	1.5	20
AC-3	1/115/60	1.5	20
AC-4	1/115/60	1.5	20
AC-5	1/115/60	1.5	20
AC-6	1/115/60	1.5	20
AC-7	1/115/60	1.5	20
AC-8	1/115/60	1.5	20
AC-9	1/115/60	1.5	20
AC-10	1/115/60	1.5	20
AC-11	1/115/60	1.5	20
AC-12	1/115/60	1.5	20
AC-13	1/115/60	1.5	20
AC-14	1/115/60	1.5	20
AC-15	1/115/60	1.5	20
AC-16	1/115/60	1.5	20
AC-17	1/115/60	1.5	20
AC-18	1/115/60	1.5	20
AC-20	1/115/60	1.5	20
AC-21	1/115/60	1.5	20
AC-22	1/115/60	1.5	20
AC-23	1/115/60	1.5	20
AC-24	1/115/60	1.5	20
AC-25	1/115/60	1.5	20
AC-39	1/115/60	1.5	20
AC-40	1/115/60	1.5	20
AC-41	1/115/60	1.5	20
AC-42	1/115/60	1.5	20
AC-43	1/115/60	1.5	20
AC-44	1/115/60	1.5	20
AC-51	1/115/60	1.5	20
AC-52	1/115/60	1.5	20
AC-53	1/115/60	1.5	20
AC-54	1/115/60	1.5	20
AC-55	1/115/60	1.5	20
AC-56	1/115/60	1.5	20
AC-57	1/115/60	1.5	20
AC-58	1/115/60	1.5	20
AC-59	1/115/60	1.5	20
AC-60	1/115/60	1.5	20
AC-61	1/115/60	1.5	20
AC-62	1/115/60	1.5	20
AC-63	1/115/60	1.5	20
AC-64	1/115/60	1.5	20
AC-65	1/115/60	1.5	20
AC-66	1/115/60	1.5	20
AC-67	1/115/60	1.5	20

NOTES:
1) REFER TO THE MECHANICAL/PLUMBING DRAWINGS FOR MORE DETAILS.
2) PROVIDE POWER ACCORDINGLY.

DEHUMIDIFIER SCHEDULE

UNIT #	ELECTRICAL DATA	PANEL NAME	CIRCUIT NO.
DH-1	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	1,3
DH-2	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	5,7
DH-3	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	9,11
DH-4	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	13,15
DH-5	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	17,19
DH-6	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	21,23
DH-7	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	25,27
DH-8	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	29,31
DH-9	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	P	33,35
DH-10	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	P	37,39
DH-11	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	P	2,4
DH-12	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 6.9A, CIRCUIT REQUIREMENT 20 A	P	6,8
DH-13	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 6.9A, CIRCUIT REQUIREMENT 20 A	P	10,12
DH-14	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	43,45
DH-15	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	47,49
DH-16	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	51,53
DH-17	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	55,57
DH-18	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	1,3
DH-19	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	5,7
DH-20	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	9,11
DH-21	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	13,15
DH-22	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	N	17,19
DH-23	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	21,23
DH-24	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	25,27
DH-25	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	N	29,31
DH-26	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	N	33,35
DH-27	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	2,4
DH-28	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	6,8
DH-29	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	10,12
DH-30	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	14,16

NOTES :-
1) PROVIDE CONTROL AS REQUIRED.
2) PROVIDE BRANCH CIRCUIT FROM HVAC UNITS TO ELECTRICAL PANEL
3) REFER PANEL SCHEDULE FOR FEEDER SIZE.
4) COORDINATE WITH MECHANICAL CONTRACTOR FOR MORE DETAIL.

ELECTRICAL CIRCULATION FAN SCHEDULE

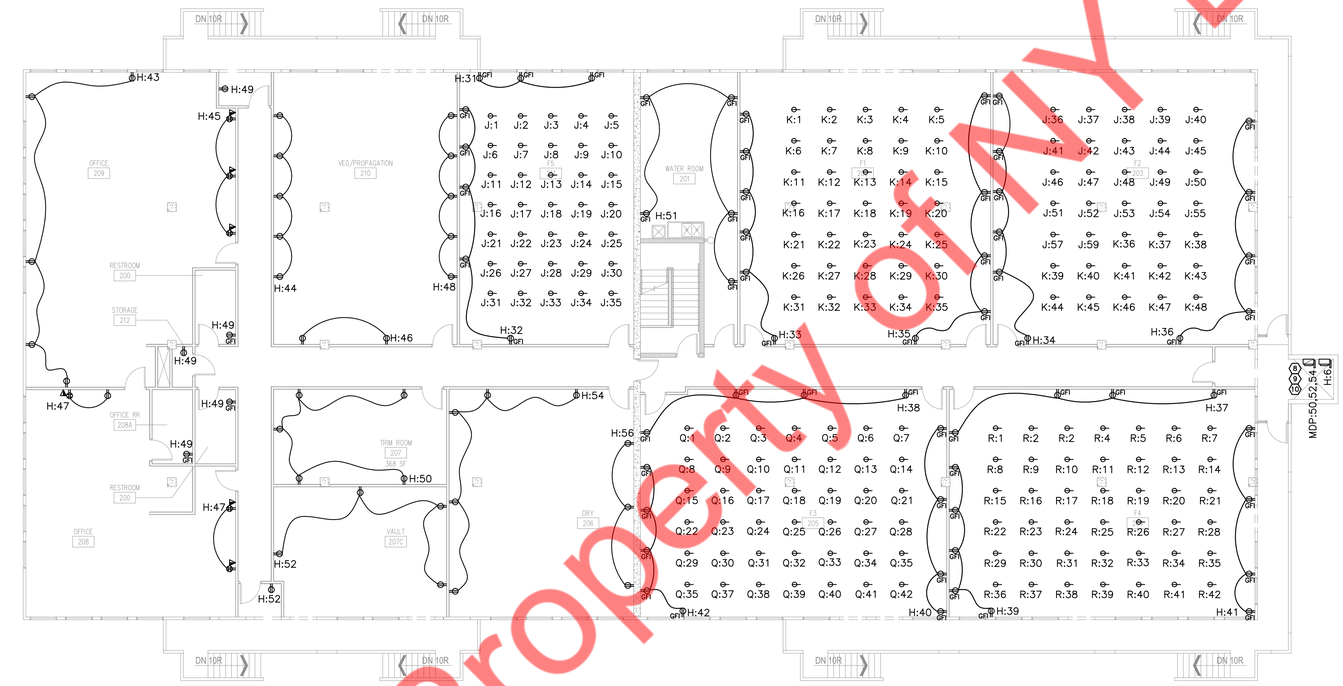
UNIT ID	VOLTS/PH	MCA(A)	PANEL NAME	CIRCUIT
CF-1	115/1	4.8	P	14
CF-2	115/2	5.8	P	16
CF-3	115/3	6.8	P	18
CF-4	115/4	7.8	P	20
CF-5	115/5	8.8	P	22
CF-6	115/6	9.8	P	24
CF-7	115/7	10.8	P	26
CF-8	115/8	11.8	P	28
CF-9	115/9	12.8	P	30
CF-10	115/10	13.8	P	32
CF-11	115/11	14.8	P	34
CF-12	115/12	15.8	P	36
CF-13	115/13	16.8	P	38
CF-14	115/14	17.8	P	40
CF-15	115/15	18.8	P	42
CF-16	115/16	19.8	P	44
CF-17	115/17	20.8	P	46
CF-18	115/18	21.8	P	48
CF-19	115/19	22.8	P	50
CF-20	115/20	23.8	P	52
CF-21	115/21	24.8	P	54
CF-22	115/22	25.8	P	56
CF-23	115/23	26.8	P	58
CF-24	115/24	27.8	P	60
CF-25	115/25	28.8	U	2
CF-26	115/26	29.8	U	4
CF-27	115/27	30.8	U	6
CF-28	115/28	31.8	U	8
CF-29	115/29	32.8	U	10
CF-30	115/30	33.8	U	12

NOTE: - COORDINATE WITH THE MECHANICAL DRAWINGS FOR THE EXACT LOCATION AND POWER REQUIREMENT. PROVIDE

ELECTRICAL CIRCULATION FAN SCHEDULE

UNIT ID	VOLTS/PH	MCA(A)	PANEL NAME	CIRCUIT
CF-31	115/1	4.8	U	14
CF-32	115/2	5.8	U	16
CF-33	115/3	6.8	U	18
CF-34	115/4	7.8	U	20
CF-35	115/5	8.8	U	22
CF-36	115/6	9.8	U	24
CF-37	115/7	10.8	U	26
CF-38	115/8	11.8	U	28
CF-39	115/9	12.8	U	30
CF-40	115/10	13.8	U	32
CF-41	115/11	14.8	U	34
CF-42	115/12	15.8	U	36
CF-43	115/13	16.8	U	38
CF-44	115/14	17.8	U	40
CF-45	115/15	18.8	U	42
CF-46	115/16	19.8	U	17
CF-47	115/17	20.8	U	19
CF-48	115/18	21.8	U	21
CF-49	115/19	22.8	U	23
CF-50	115/20	23.8	U	25
CF-51	115/21	24.8	U	27
CF-52	115/22	25.8	U	29
CF-53	115/23	26.8	U	31
CF-54	115/24	27.8	U	33
CF-55	115/25	28.8	U	35
CF-56	115/26	29.8	U	37
CF-57	115/27	30.8	U	39
CF-58	115/28	31.8	U	41
CF-59	115/29	32.8	U	43

NOTE: - COORDINATE WITH THE MECHANICAL DRAWINGS FOR THE EXACT LOCATION AND POWER REQUIREMENT. PROVIDE



1 ELECTRICAL POWER PLAN – LEVEL 2
1" = 3/32"

POWER PLAN GENERAL NOTES

1. ALL RECEPTACLES IN KITCHEN OR WET AREA SHALL BE "GFCI" IN ACCORDANCE WITH NEC ARTICLE 210.8(B). PROVIDE GFI RATED BREAKER AT PANEL FOR KITCHEN EQUIPMENT.
2. COORDINATE WITH ARCHITECT FOR PLACEMENT OF DEVICES.
3. COORDINATE EXACT LOCATION OF HVAC EQUIPMENTS ON ABOVE CEILING WITH MECHANICAL CONTRACTOR.
4. ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER FOR FINAL SELECTION PRIOR TO ROUGH-IN. E.C. COORDINATE LOCATION OF DISCONNECT SWITCH WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT SUPPLIER/OWNER AND PROVIDE PLUGS / DISCONNECTS AS REQUIRED. IF ANY EQUIPMENT NEEDS TO BE TERMINATED AS A HARD WIRE, IT IS THE CONTRACTOR RESPONSIBILITY TO PROVIDE THE CONNECTION WITH SUITABLE DISCONNECT / PLUG. BASE BID ACCORDINGLY.
6. ANY WORK AFFECTING LANDLORD'S BASE BUILDING–SUCH AS SPRINKLER SYSTEM, HVAC SYSTEM, ROOF WORK OR ELECTRICAL WORK OUTSIDE LEASED AREA WILL BE REQUIRED TO BE PERFORMED BY A LANDLORD DESIGNATED OR APPROVED CONTRACTOR AND BE ENGAGED BY THE TENANT AT THE TENANTS EXPENSE.
7. PROVIDE A GROUND WIRE IN ALL RACEWAYS AND NEUTRAL WIRE AT EACH SWITCH BOX LOCATION.
8. ALL RECEPTACLES REQUIRE A PIGTAIL GROUNDING WIRE TO THE BOX.

POWER PLAN NOTES: (#)

1. E.C TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF MECHANICAL EQUIPMENTS WITH MECHANICAL CONTRACTOR. PROVIDE THE ELECTRICAL CONNECTION AS PER MECHANICAL EQUIPMENTS REQUIREMENT IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.
2. ELECTRICAL DEVICES SHOWN FOR THE EXTRACTION ROOM, KITCHEN, PREROLL & LAB EQUIPMENT ARE FOR THE REFERENCE ONLY. CONTRACTOR TO VERIFY EXACT CONNECTION DETAILS, POWER REQUIREMENT, WIRE SIZES, BREAKER RATINGS WITH THE EQUIPMENT MANUFACTURER AND PROVIDE ACCORDINGLY. ANY DISCREPANCIES/ADJUSTMENTS REQUIRED SHALL BE COMMUNICATED WITH ENGINEER ON RECORD PRIOR TO BIDDING/ROUGH IN.
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5. PROVIDE JUNCTION BOX FOR ELECTRICAL CONNECTIONS TO PANIC DOOR HARDWARE. E.C. TO COORDINATE WITH MANUFACTURER FOR POWER REQUIREMENT AND EXACT LOCATION OF THE JUNCTION BOX AND PROVIDE NECESSARY WIRING.
6. PROVIDE ARC FLASH WARNING FOR QUALIFIED PERSONS AS STATED IN NEC 110.16. THIS WARNING LABEL SHALL IDENTIFY THE DEGREE OR LEVEL OF POTENTIAL FLASH HAZARD THAT IS PRESENT IN THE INSTALLATION SO THAT THE APPROPRIATE FLASH PROTECTION CLOTHING (PPE) WILL BE WORN.
7. E.C. TO PROVIDE CLEARANCE PER NEC AND MAKE REQUIRED SET-UP ARRANGEMENTS TO POSITION ALL EQUIPMENT IN ACCORDANCE WITH RISER DIAGRAM.
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9. ELEVATOR CAR LIGHTING CIRCUIT DISCONNECT (120V, 1ø). TO BE LOCATED IN COORDINATION WITH THE VENDOR.
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3. SEE SHEET E–3 FOR POINT OF SALES POWER AND DATA WIRING.
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5. ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER FOR FINAL SELECTION PRIOR TO ROUGH–IN. E.C. COORDINATE LOCATION OF DISCONNECT SWITCH WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH–IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.
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8. PROVIDE A GROUND WIRE IN ALL RACEWAYS AND NEUTRAL WIRE AT EACH SWITCH BOX LOCATION.

NOTES:

HVAC POWER NOTES:

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3. E.C. TO COORDINATE WITH THE PLUMBING CONTRACTOR FOR THE EXACT LOCATION AND POWER REQUIREMENTS FOR THE CONDENSATE DRAIN PUMP. PROVIDE NECESSARY WIRING, BREAKER, CONTROL AND BRANCH CIRCUIT AS REQUIRED.
4. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM.
5. PER AHJ AND PUBLIC ACT 094–0741 THE CARBON MONOXIDE ALARMS REQUIRED UNDER THIS ACT MAY BE EITHER BATTERY POWERED, PLUG–IN WITH BATTERY BACK–UP, OR WIRED INTO THE STRUCTURE'S AC POWER LINE WITH SECONDARY BATTERY BACK–UP. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM. MAKE PROVISION ACCORDINGLY.

ELECTRIC WALL HEATERS SCHEDULE

UNIT TAG	KW	ELECTRIC DATA (V/PH/HZ)	AMPS	QTY (NOS	PANEL NAME	CIRCUIT NO.
EWH-1	0.5	120/1/60	4.2	2	XA	25
EWH-2	1	120/1/60	8.4	1	XA	27
EWH-3	1	120/1/60	8.4	1	XA	29
EWH-4	2	240/1/60	8.4	1	AB	36,38
EWH-5	3	240/1/60	12.5	1	AB	40,42
EWH-6	1	120/1/60	8.4	1	XA	31
EWH-7	2	240/1/60	8.4	1	AB	32,34
EWH-8	0.5	120/1/60	4.2	2	XA	33
EWH-9	0.5	120/1/60	4.2	2	XA	35

NOTES:
1) PROVIDE DISCONNECTION SWITCH.
2) REFER TO THE PANEL SCHEDULE FOR MORE DETAILS.

ELECTRICAL FAN SCHEDULE

UNIT ID	VOLTS/PH	FLA(A)	PANEL NAME	CIRCUIT NO.
EF-1	115/1	0.29	P	62
EF-2	115/1	0.29	P	64
EF-3	115/1	1	P	66
EF-4	115/1	0.29	N	38
EF-5	115/1	0.29	N	40
EF-6	115/1	0.29	N	42
EF-7	240/1	2.7	AB	1,3
EF-8	240/1	2.7	AB	2,4
EF-9	240/1	2.7	AB	5,7
EF-10	240/1	2.7	AB	6,8
EF-11	240/1	2.7	AB	9,11
EF-12	240/1	2.3	AB	10,12
EF-13	240/1	2.7	AB	13,15
EF-14	240/1	2.7	AB	14,16
EF-15	240/1	2.7	AB	17,19
EF-16	240/1	2.7	AB	18,20
EF-17	240/1	2.3	AB	21,23
EF-18	240/1	2.5	AB	22,24
EF-19	240/1	2.5	AB	25,27
EF-20	240/1	2.5	AB	26,28
EF-21	240/1	2.5	AB	29,31
EF-22	115/1	3.8	XB	35
EF-23	115/1	0.29	XB	37
EF-24	115/1	3.8	XB	39
EF-25	115/1	0.29	XB	41
KEF	115/1	0.12	P	68
OAF-1	115/1	3.8	P	70
			P	72

NOTE:
1. COORDINATE WITH THE MECHANICAL DRAWINGS FOR EXACT LOCATION.
2. PROVIDE POWER AND CONTROL ACCORDINGLY.
3. REFER PANEL SCHEDULE MORE DETAILS. (PANEL P, N, AB AND XB)

CONDENSATE DRAIN PUMP

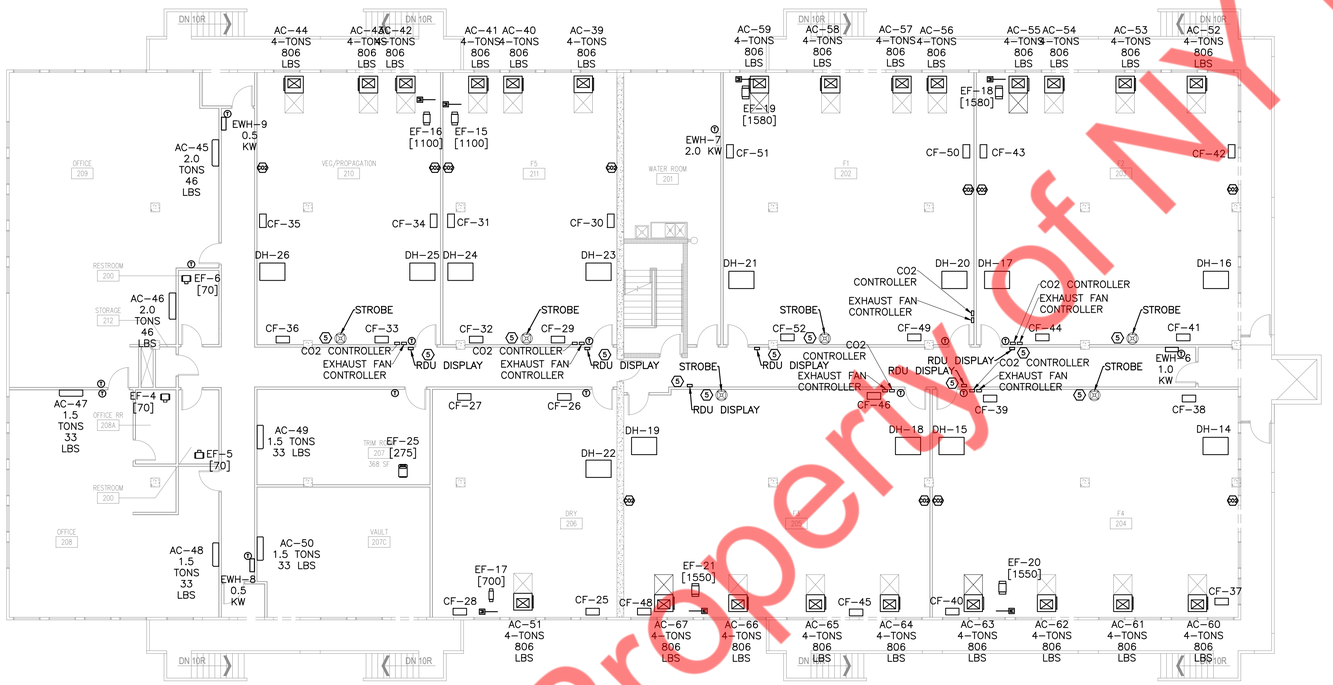
UNIT TAG	ELECTRICAL DATA		
	PH/VOLT/HZ	MCA (A)	MOP (A)
AC-1	1/115/60	1.5	20
AC-2	1/115/60	1.5	20
AC-3	1/115/60	1.5	20
AC-4	1/115/60	1.5	20
AC-5	1/115/60	1.5	20
AC-6	1/115/60	1.5	20
AC-7	1/115/60	1.5	20
AC-8	1/115/60	1.5	20
AC-9	1/115/60	1.5	20
AC-10	1/115/60	1.5	20
AC-11	1/115/60	1.5	20
AC-12	1/115/60	1.5	20
AC-13	1/115/60	1.5	20
AC-14	1/115/60	1.5	20
AC-15	1/115/60	1.5	20
AC-16	1/115/60	1.5	20
AC-17	1/115/60	1.5	20
AC-18	1/115/60	1.5	20
AC-20	1/115/60	1.5	20
AC-21	1/115/60	1.5	20
AC-22	1/115/60	1.5	20
AC-23	1/115/60	1.5	20
AC-24	1/115/60	1.5	20
AC-25	1/115/60	1.5	20
AC-39	1/115/60	1.5	20
AC-40	1/115/60	1.5	20
AC-41	1/115/60	1.5	20
AC-42	1/115/60	1.5	20
AC-43	1/115/60	1.5	20
AC-44	1/115/60	1.5	20
AC-51	1/115/60	1.5	20
AC-52	1/115/60	1.5	20
AC-53	1/115/60	1.5	20
AC-54	1/115/60	1.5	20
AC-55	1/115/60	1.5	20
AC-56	1/115/60	1.5	20
AC-57	1/115/60	1.5	20
AC-58	1/115/60	1.5	20
AC-59	1/115/60	1.5	20
AC-60	1/115/60	1.5	20
AC-61	1/115/60	1.5	20
AC-62	1/115/60	1.5	20
AC-63	1/115/60	1.5	20
AC-64	1/115/60	1.5	20
AC-65	1/115/60	1.5	20
AC-66	1/115/60	1.5	20
AC-67	1/115/60	1.5	20

NOTES:
1) REFER TO THE MECHANICAL/PLUMBING DRAWINGS FOR MORE DETAILS.
2) PROVIDE POWER ACCORDINGLY.

DEHUMIDIFIER SCHEDULE

UNIT #	ELECTRICAL DATA	PANEL NAME	CIRCUIT NO.
DH-1	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	1,3
DH-2	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	5,7
DH-3	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	9,11
DH-4	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	13,15
DH-5	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	17,19
DH-6	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	21,23
DH-7	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	25,27
DH-8	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	29,31
DH-9	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	P	33,35
DH-10	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	P	37,39
DH-11	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	P	2,4
DH-12	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 6.9A, CIRCUIT REQUIREMENT 20 A	P	6,8
DH-13	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 6.9A, CIRCUIT REQUIREMENT 20 A	P	10,12
DH-14	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	43,45
DH-15	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	47,49
DH-16	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	51,53
DH-17	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	P	55,57
DH-18	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	1,3
DH-19	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	5,7
DH-20	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	9,11
DH-21	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	13,15
DH-22	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	N	17,19
DH-23	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	21,23
DH-24	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	25,27
DH-25	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	N	29,31
DH-26	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 7.9 A, CIRCUIT REQUIREMENT 20 A	N	33,35
DH-27	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	2,4
DH-28	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	6,8
DH-29	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	10,12
DH-30	1 PH., 220-240 VAC, 60 HZ, CURRENT DRAW 11.0 A, CIRCUIT REQUIREMENT 30 A	N	14,16

NOTES :-
1) PROVIDE CONTROL AS REQUIRED.
2) PROVIDE BRANCH CIRCUIT FROM HVAC UNITS TO ELECTRICAL PANEL
3) REFER PANEL SCHEDULE FOR FEEDER SIZE.
4) COORDINATE WITH MECHANICAL CONTRACTOR FOR MORE DETAIL.



1 ELECTRICAL POWER PLAN – LEVEL 2 (HVAC)
1" = 3/32"

ELECTRICAL CIRCULATION FAN SCHEDULE

UNIT ID	VOLTS/PH	MCA(A)	PANEL NAME	CIRCUIT
CF-1	115/1	4.8	P	14
CF-2	115/2	5.8	P	16
CF-3	115/3	6.8	P	18
CF-4	115/4	7.8	P	20
CF-5	115/5	8.8	P	22
CF-6	115/6	9.8	P	24
CF-7	115/7	10.8	P	26
CF-8	115/8	11.8	P	28
CF-9	115/9	12.8	P	30
CF-10	115/10	13.8	P	32
CF-11	115/11	14.8	P	34
CF-12	115/12	15.8	P	36
CF-13	115/13	16.8	P	38
CF-14	115/14	17.8	P	40
CF-15	115/15	18.8	P	42
CF-16	115/16	19.8	P	44
CF-17	115/17	20.8	P	46
CF-18	115/18	21.8	P	48
CF-19	115/19	22.8	P	50
CF-20	115/20	23.8	P	52
CF-21	115/21	24.8	P	54
CF-22	115/22	25.8	P	56
CF-23	115/23	26.8	P	58
CF-24	115/24	27.8	P	60
CF-25	115/25	28.8	U	2
CF-26	115/26	29.8	U	4
CF-27	115/27	30.8	U	6
CF-28	115/28	31.8	U	8
CF-29	115/29	32.8	U	10
CF-30	115/30	33.8	U	12

NOTE: - COORDINATE WITH THE MECHANICAL DRAWINGS FOR THE EXACT LOCATION AND POWER REQUIREMENT. PROVIDE

ELECTRICAL CIRCULATION FAN SCHEDULE

UNIT ID	VOLTS/PH	MCA(A)	PANEL NAME	CIRCUIT
CF-31	115/1	4.8	U	14
CF-32	115/2	5.8	U	16
CF-33	115/3	6.8	U	18
CF-34	115/4	7.8	U	20
CF-35	115/5	8.8	U	22
CF-36	115/6	9.8	U	24
CF-37	115/7	10.8	U	26
CF-38	115/8	11.8	U	28
CF-39	115/9	12.8	U	30
CF-40	115/10	13.8	U	32
CF-41	115/11	14.8	U	34
CF-42	115/12	15.8	U	36
CF-43	115/13	16.8	U	38
CF-44	115/14	17.8	U	40
CF-45	115/15	18.8	U	42
CF-46	115/16	19.8	U	17
CF-47	115/17	20.8	U	19
CF-48	115/18	21.8	U	21
CF-49	115/19	22.8	U	23
CF-50	115/20	23.8	U	25
CF-51	115/21	24.8	U	27
CF-52	115/22	25.8	U	29
CF-53	115/23	26.8	U	31
CF-54	115/24	27.8	U	33
CF-55	115/25	28.8	U	35
CF-56	115/26	29.8	U	37
CF-57	115/27	30.8	U	39
CF-58	115/28	31.8	U	41
CF-59	115/29	32.8	U	43

NOTE: - COORDINATE WITH THE MECHANICAL DRAWINGS FOR THE EXACT LOCATION AND POWER REQUIREMENT. PROVIDE

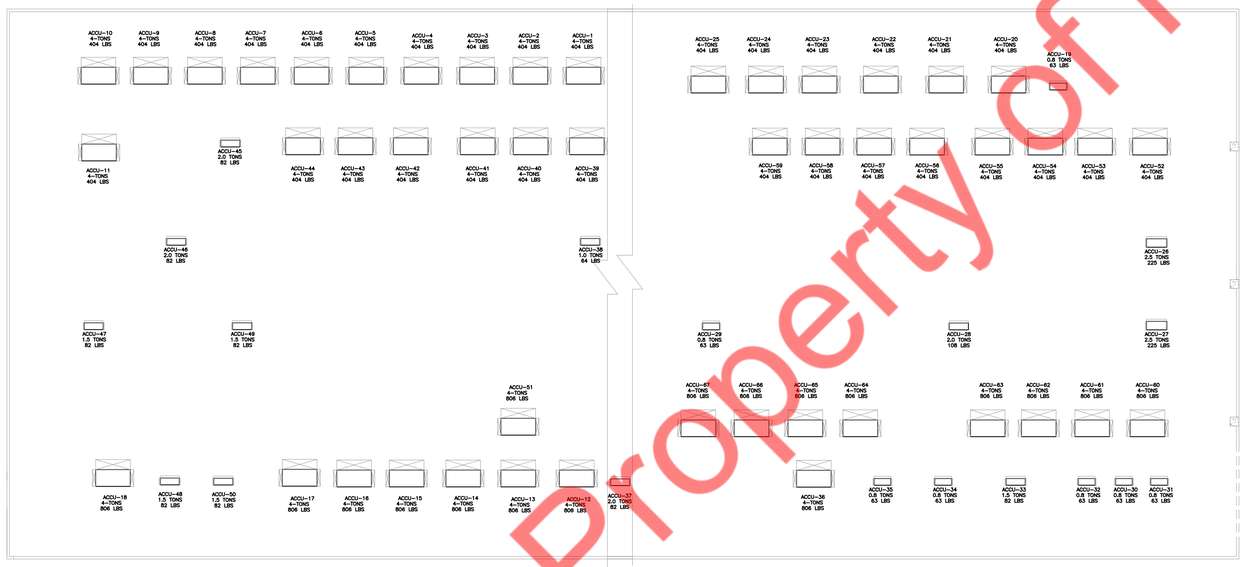
POWER PLAN GENERAL NOTES

1. ALL RECEPTACLES IN KITCHEN OR WET AREA SHALL BE "GFCI" IN ACCORDANCE WITH NEC ARTICLE 210.8(B). PROVIDE GFI RATED BREAKER AT PANEL FOR KITCHEN EQUIPMENT.
2. SEE ARCHITECTURAL ELEVATIONS FOR PLACEMENT OF DEVICES.
3. SEE SHEET E–3 FOR POINT OF SALES POWER AND DATA WIRING.
4. COORDINATE EXACT LOCATION OF HVAC EQUIPMENTS ON ABOVE CEILING WITH MECHANICAL CONTRACTOR.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER FOR FINAL SELECTION PRIOR TO ROUGH–IN. E.C. COORDINATE LOCATION OF DISCONNECT SWITCH WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH–IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT SUPPLIER/OWNER AND PROVIDE PLUGS / DISCONNECTS AS REQUIRED. IF ANY EQUIPMENT NEEDS TO BE TERMINATED AS A HARD WIRE, IT IS THE CONTRACTOR RESPONSIBILITY TO PROVIDE THE CONNECTION WITH SUITABLE DISCONNECT / PLUG. BASE BID ACCORDINGLY.
7. ANY WORK AFFECTING LANDLORD'S BASE BUILDING–SUCH AS SPRINKLER SYSTEM, HVAC SYSTEM, ROOF WORK OR ELECTRICAL WORK OUTSIDE LEASED AREA WILL BE REQUIRED TO BE PERFORMED BY A LANDLORD DESIGNATED OR APPROVED CONTRACTOR AND BE ENGAGED BY THE TENANT AT THE TENANTS EXPENSE.
8. PROVIDE A GROUND WIRE IN ALL RACEWAYS AND NEUTRAL WIRE AT EACH SWITCH BOX LOCATION.

NOTES:

HVAC POWER NOTES:

1. E.C TO COORDINATE THE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF MECHANICAL EQUIPMENTS WITH MECHANICAL CONTRACTOR. PROVIDE THE ELECTRICAL CONNECTION AS PER MECHANICAL EQUIPMENTS REQUIREMENT IN FIELD. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCY.
2. CONTRACTOR TO VERIFY CONTROL METHOD FOR CIRCULATION FANS AND PROVIDE MOTORIZED SWITCH/DISCONNECT ACCORDINGLY.
3. E.C. TO COORDINATE WITH THE PLUMBING CONTRACTOR FOR THE EXACT LOCATION AND POWER REQUIREMENTS FOR THE CONDENSATE DRAIN PUMP. PROVIDE NECESSARY WIRING, BREAKER, CONTROL AND BRANCH CIRCUIT AS REQUIRED.
4. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM.
5. PER AHJ AND PUBLIC ACT 094–0741 THE CARBON MONOXIDE ALARMS REQUIRED UNDER THIS ACT MAY BE EITHER BATTERY POWERED, PLUG–IN WITH BATTERY BACK–UP, OR WIRED INTO THE STRUCTURE'S AC POWER LINE WITH SECONDARY BATTERY BACK–UP. CONTRACTOR TO COORDINATE WITH CO2 VENDOR FOR WORKING AND OPERATION OF THE CO2 SYSTEM. MAKE PROVISION ACCORDINGLY.



1 ELECTRICAL POWER PLAN – ROOF (HVAC)
1" = 3/32"

ELECTRICAL INDOOR AC UNIT SCHEDULE

UNIT TAG	ELECTRICAL DATA				
	PH/VOLT/HZ	MCA (A)	MOP (A)	PANEL NAME	CIRCUIT NO.
AC-1	3/460/60	23	25	V	7,9,11
AC-2	3/460/60	23	25	V	13,15,17
AC-3	3/460/60	23	25	V	19,21,23
AC-4	3/460/60	23	25	V	25,27,29
AC-5	3/460/60	23	25	V	31,33,35
AC-6	3/460/60	23	25	V	37,39,41
AC-7	3/460/60	23	25	V	43,45,47
AC-8	3/460/60	23	25	V	49,51,53
AC-9	3/460/60	23	25	V	55,57,59
AC-10	3/460/60	23	25	V	61,63,65
AC-11	3/460/60	23	25	V	67,69,71
AC-12	3/460/60	23	25	V	2,4,6
AC-13	3/460/60	23	25	V	8,10,12
AC-14	3/460/60	23	25	V	14,16,18
AC-15	3/460/60	23	25	V	20,22,24
AC-16	3/460/60	23	25	V	26,28,30
AC-17	3/460/60	23	25	V	32,34,36
AC-18	3/460/60	23	25	V	38,40,42
AC-19	1/208-230/60	POWER BY OUTDOOR		-	-
AC-20	3/460/60	23	25	V	44,46,48
AC-21	3/460/60	23	25	V	50,52,54
AC-22	3/460/60	23	25	V	56,58,60
AC-23	3/460/60	23	25	V	62,64,66
AC-24	3/460/60	23	25	V	68,70,72
AC-25	3/460/60	23	25	W	1,3,5
AC-26	1/208-230/60	1	15	XB	36,38
AC-27	1/208-230/60	1	15	XB	40,42
AC-28	1/208-230/60	POWER BY OUTDOOR		-	-
AC-29	1/208-230/60	POWER BY OUTDOOR		-	-
AC-30	1/208-230/60	POWER BY OUTDOOR		-	-
AC-31	1/208-230/60	POWER BY OUTDOOR		-	-
AC-32	1/208-230/60	POWER BY OUTDOOR		-	-
AC-33	1/208-230/60	POWER BY OUTDOOR		-	-
AC-34	1/208-230/60	POWER BY OUTDOOR		-	-
AC-35	1/208-230/60	POWER BY OUTDOOR		-	-
AC-36	3/460/60	25	23	W	7,9,11
AC-37	1/208-230/60	POWER BY OUTDOOR		-	-
AC-38	1/208-230/60	POWER BY OUTDOOR		-	-
AC-39	3/460/60	23	25	W	13,15,17
AC-40	3/460/60	23	25	W	19,21,23
AC-41	3/460/60	23	25	W	25,27,29
AC-42	3/460/60	23	25	W	31,33,35
AC-43	3/460/60	23	25	W	37,39,41
AC-44	3/460/60	23	25	W	43,45,47
AC-45	1/208-230/60	POWER BY OUTDOOR		-	-
AC-46	1/208-230/60	POWER BY OUTDOOR		-	-
AC-47	1/208-230/60	POWER BY OUTDOOR		-	-
AC-48	1/208-230/60	POWER BY OUTDOOR		-	-
AC-49	1/208-230/60	POWER BY OUTDOOR		-	-
AC-50	1/208-230/60	POWER BY OUTDOOR		-	-
AC-51	3/460/60	23	25	W	49,51,53
AC-52	3/460/60	23	25	W	55,57,59
AC-53	3/460/60	23	25	W	61,63,65
AC-54	3/460/60	23	25	W	67,69,71
AC-55	3/460/60	23	25	W	2,4,6
AC-56	3/460/60	23	25	W	8,10,12
AC-57	3/460/60	23	25	W	14,16,18
AC-58	3/460/60	23	25	W	20,22,24
AC-59	3/460/60	23	25	W	26,28,30
AC-60	3/460/60	23	25	W	32,34,36
AC-61	3/460/60	23	25	W	38,40,42
AC-62	3/460/60	23	25	W	44,46,48
AC-63	3/460/60	23	25	W	50,52,54
AC-64	3/460/60	23	25	W	56,58,60
AC-65	3/460/60	23	25	W	62,64,66
AC-66	3/460/60	23	25	W	68,70,72
AC-67	3/460/60	23	25	AA	1,3,5

NOTES:-

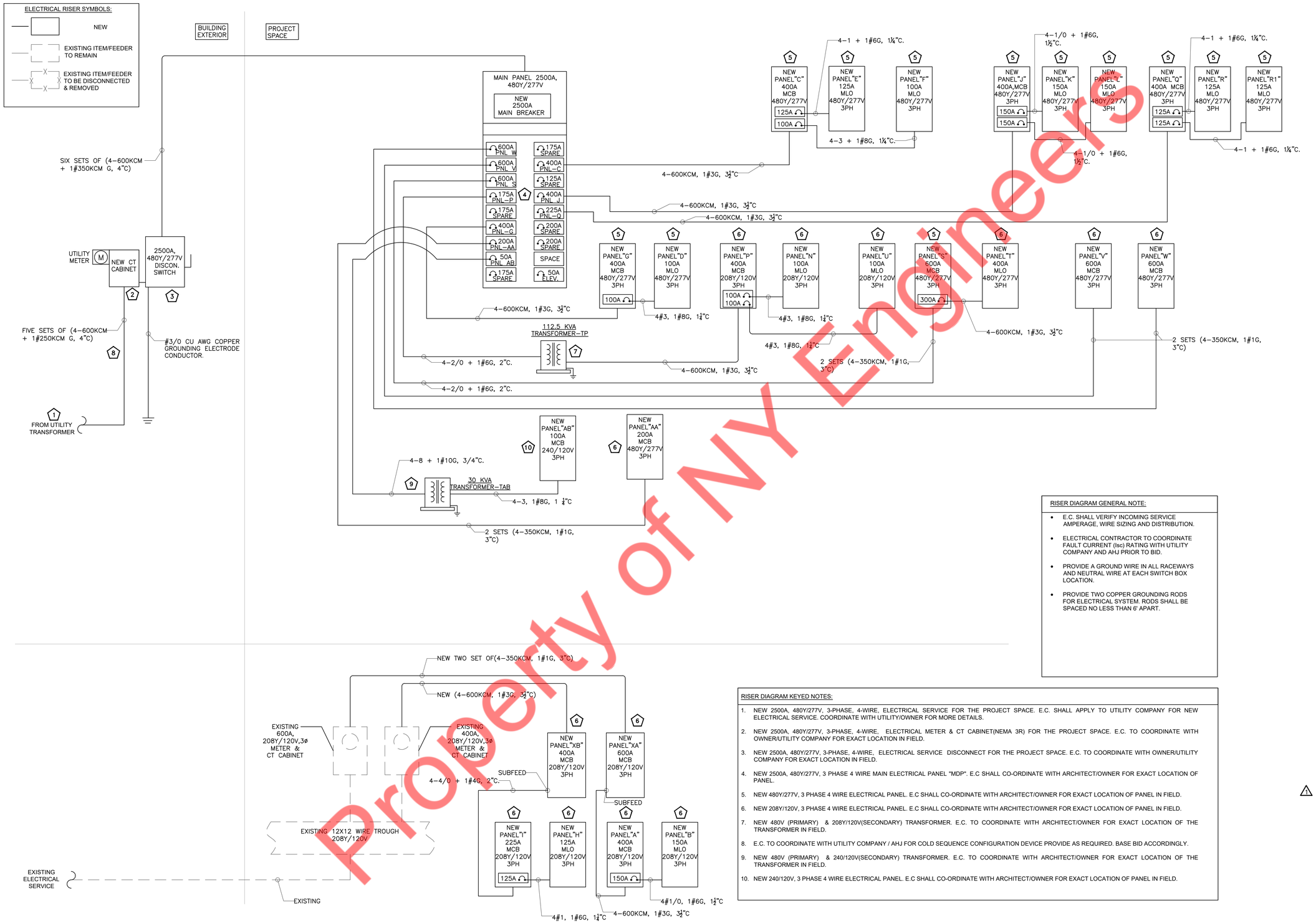
1. PROVIDE WEATHER PROOF DISCONNECT, RATING AS REQUIRED.
2. PROVIDE BRANCH CIRCUIT FROM HVAC UNITS TO ELECTRICAL PANEL
3. REFER PANEL SCHEDULE FOR FEEDER SIZE.
4. COORDINATE WITH MECHANICAL CONTRACTOR FOR MORE DETAIL.

ELECTRICAL OUTDOOR CONDENSING UNIT SCHEDULE

UNIT TAG	INDOOR AC UNIT CONNECTED	ELECTRICAL				
		(V/Hz/Ph)	MCA (A)	MOP (A)	PANEL NAME	CIRCUIT NO.
ACCU-1	AC-1	460/60/3	11	15	S	1,3,5
ACCU-2	AC-2	460/60/3	11	15	S	7,9,11
ACCU-3	AC-3	460/60/3	11	15	S	13,15,17
ACCU-4	AC-4	460/60/3	11	15	S	19,21,23
ACCU-5	AC-5	460/60/3	11	15	S	25,27,29
ACCU-6	AC-6	460/60/3	11	15	S	31,33,35
ACCU-7	AC-7	460/60/3	11	15	S	37,39,41
ACCU-8	AC-8	460/60/3	11	15	S	43,45,47
ACCU-9	AC-9	460/60/3	11	15	S	49,51,53
ACCU-10	AC-10	460/60/3	11	15	S	55,57,59
ACCU-11	AC-11	460/60/3	11	15	S	61,63,65
ACCU-12	AC-12	460/60/3	11	15	S	67,69,71
ACCU-13	AC-13	460/60/3	11	15	S	2,4,6
ACCU-14	AC-14	460/60/3	11	15	S	8,10,12
ACCU-15	AC-15	460/60/3	11	15	S	14,16,18
ACCU-16	AC-16	460/60/3	11	15	S	20,22,24
ACCU-17	AC-17	460/60/3	11	15	S	26,28,30
ACCU-18	AC-18	460/60/3	11	15	S	32,34,36
ACCU-19	AC-19	208-230/60/1	8.7	15	XB	1,3
ACCU-20	AC-20	460/60/3	11	15	S	38,40,42
ACCU-21	AC-21	460/60/3	11	15	S	44,46,48
ACCU-22	AC-22	460/60/3	11	15	S	50,52,54
ACCU-23	AC-23	460/60/3	11	15	S	56,58,60
ACCU-24	AC-24	460/60/3	11	15	T	62,64,66
ACCU-25	AC-25	460/60/3	11	15	T	1,3,5
ACCU-26	AC-26	208-230/60/1	29.1	35	XB	5,7
ACCU-27	AC-27	208-230/60/1	29.1	35	XB	9,11
ACCU-28	AC-28	208-230/60/3	16.9	20	XA	1,3,5
ACCU-29	AC-29	208-230/60/1	8.7	15	XB	2,4
ACCU-30	AC-30	208-230/60/1	8.7	15	XB	6,8
ACCU-31	AC-31	208-230/60/1	8.7	15	XB	10,12
ACCU-32	AC-32	208-230/60/1	8.7	15	XB	14,16
ACCU-33	AC-33	208-230/60/1	18.6	20	XB	18,20
ACCU-34	AC-34	208-230/60/1	12.2	15	XB	22,24
ACCU-35	AC-35	208-230/60/1	8.7	15	XB	26,28
ACCU-36	AC-36	460/60/3	11	15	T	7,9,11
ACCU-37	AC-37	208-230/60/3	16.9	20	XA	7,9,11
ACCU-38	AC-38	208-230/60/3	12.2	15	XA	13,15,17
ACCU-39	AC-39	460/60/3	11	15	T	13,15,17
ACCU-40	AC-40	460/60/3	11	15	T	19,21,23
ACCU-41	AC-41	460/60/3	11	15	T	25,27,29
ACCU-42	AC-42	460/60/3	11	15	T	31,33,35
ACCU-43	AC-43	460/60/3	11	15	T	37,39,41
ACCU-44	AC-44	460/60/3	11	15	T	43,45,47
ACCU-45	AC-45	208-230/60/3	18.8	20	XA	19,21,23
ACCU-46	AC-46	208-230/60/3	18.8	20	XA	2,4,6
ACCU-47	AC-47	208-230/60/3	18.6	20	XA	8,10,12
ACCU-48	AC-48	208-230/60/3	18.6	20	XA	14,16,18
ACCU-49	AC-49	208-230/60/3	18.6	20	XA	20,22,24
ACCU-50	AC-50	208-230/60/3	18.6	20	XA	26,28,30
ACCU-51	AC-51	460/60/3	11	15	T	49,51,53
ACCU-52	AC-52	460/60/3	11	15	T	55,57,59
ACCU-53	AC-53	460/60/3	11	15	T	61,63,65
ACCU-54	AC-54	460/60/3	11	15	T	67,69,71
ACCU-55	AC-55	460/60/3	11	15	T	2,4,6
ACCU-56	AC-56	460/60/3	11	15	T	8,10,12
ACCU-57	AC-57	460/60/3	11	15	T	14,16,18
ACCU-58	AC-58	460/60/3	11	15	T	20,22,24
ACCU-59	AC-59	460/60/3	11	15	T	26,28,30
ACCU-60	AC-60	460/60/3	11	15	T	32,34,36
ACCU-61	AC-61	460/60/3	11	15	T	38,40,42
ACCU-62	AC-62	460/60/3	11	15	T	44,46,48
ACCU-63	AC-63	460/60/3	11	15	T	50,52,54
ACCU-64	AC-64	460/60/3	11	15	T	56,58,60
ACCU-65	AC-65	460/60/3	11	15	T	62,64,66
ACCU-66	AC-66	460/60/3	11	15	T	68,70,72
ACCU-67	AC-67	460/60/3	11	15	V	1,3,5

NOTES:-

1. PROVIDE WEATHER PROOF DISCONNECT, RATING AS REQUIRED.
2. PROVIDE BRANCH CIRCUIT FROM HVAC UNITS TO ELECTRICAL PANEL
3. REFER PANEL SCHEDULE FOR FEEDER SIZE.
4. COORDINATE WITH MECHANICAL CONTRACTOR FOR MORE DETAIL.



RISER DIAGRAM GENERAL NOTE:

- E.C. SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.
- ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ PRIOR TO BID.
- PROVIDE A GROUND WIRE IN ALL RACEWAYS AND NEUTRAL WIRE AT EACH SWITCH BOX LOCATION.
- PROVIDE TWO COPPER GROUNDING RODS FOR ELECTRICAL SYSTEM. RODS SHALL BE SPACED NO LESS THAN 6' APART.

RISER DIAGRAM KEYED NOTES:

1. NEW 2500A, 480Y/277V, 3-PHASE, 4-WIRE, ELECTRICAL SERVICE FOR THE PROJECT SPACE. E.C. SHALL APPLY TO UTILITY COMPANY FOR NEW ELECTRICAL SERVICE. COORDINATE WITH UTILITY/OWNER FOR MORE DETAILS.
2. NEW 2500A, 480Y/277V, 3-PHASE, 4-WIRE, ELECTRICAL METER & CT CABINET(NEMA 3R) FOR THE PROJECT SPACE. E.C. TO COORDINATE WITH OWNER/UTILITY COMPANY FOR EXACT LOCATION IN FIELD.
3. NEW 2500A, 480Y/277V, 3-PHASE, 4-WIRE, ELECTRICAL SERVICE DISCONNECT FOR THE PROJECT SPACE. E.C. TO COORDINATE WITH OWNER/UTILITY COMPANY FOR EXACT LOCATION IN FIELD.
4. NEW 2500A, 480Y/277V, 3 PHASE 4 WIRE MAIN ELECTRICAL PANEL "MDP". E.C SHALL CO-ORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF PANEL.
5. NEW 480Y/277V, 3 PHASE 4 WIRE ELECTRICAL PANEL. E.C SHALL CO-ORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF PANEL IN FIELD.
6. NEW 208Y/120V, 3 PHASE 4 WIRE ELECTRICAL PANEL. E.C SHALL CO-ORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF PANEL IN FIELD.
7. NEW 480V (PRIMARY) & 208Y/120V(SECONDARY) TRANSFORMER. E.C. TO COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF THE TRANSFORMER IN FIELD.
8. E.C. TO COORDINATE WITH UTILITY COMPANY / AHJ FOR COLD SEQUENCE CONFIGURATION DEVICE PROVIDE AS REQUIRED. BASE BID ACCORDINGLY.
9. NEW 480V (PRIMARY) & 240/120V(SECONDARY) TRANSFORMER. E.C. TO COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF THE TRANSFORMER IN FIELD.
10. NEW 240/120V, 3 PHASE 4 WIRE ELECTRICAL PANEL. E.C SHALL CO-ORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION OF PANEL IN FIELD.

PANEL: MDP (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE — **PANEL LOCATION:** ELECTRICAL ROOM

MCB **2500A** — **FED FROM:** MAIN SERVICE

NOTE:

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			O	146.64		146.64								2
3	600/3P	NEW PANEL W	O	146.64	#2 (4#350KCM, #1G, 3"C)		146.64					SPARE	175/3P	4
5			O	146.64				146.64						6
7			O	143.45		220.58				77.13	O			8
9	600/3P	NEW PANEL V	O	143.45	#2 (4#350KCM, #1G, 3"C)		220.58		4#600KCM, #3G, 3 1/2"C	77.13	O	NEW PANEL C	400/3P	10
11			O	143.45				220.58		77.13	O			12
13			O	137.24		137.24								14
15	600/3P	NEW PANEL S	O	137.24	#2 (4#350KCM, #1G, 3"C)		137.24					SPARE	125/3P	16
17			O	137.24				137.24						18
19			O	34.66		125.29				90.63	O			20
21	175/3P	NEW PANEL P	O	34.66	4#2/0, #6G, 2"C		125.29		4#600KCM, #3G, 3 1/2"C	90.63	O	NEW PANEL J	400/3P	22
23			O	34.66				125.29		90.63	O			24
25						74.38				74.38	O			26
27	175/3P	SPARE					74.38		4#3/0, #6G, 2"C	74.38	O	NEW PANEL Q	200/3P	28
29								74.38		74.38	O			30
31			O	48.92		48.92								32
33	400/3P	NEW PANEL G	O	48.92	4#600KCM, #3G, 3 1/2"C		48.92					SPARE	200/3P	34
35			O	48.92				48.92						36
37			O	5.50		5.50								38
39	200/3P	NEW PANEL AA	O	5.50	4#3/0, #6G, 2"C		5.50					SPARE	200/3P	40
41			O	5.50				5.50						42
43			O	4.79		4.79								44
45	50/3P	NEW PANEL AB	O	4.79	4#8, #10G, 3/4"C		4.79					SPACE		46
47			O	4.79				4.79						48
49						10.62				10.62	O			50
51	175/3P	SPARE					10.62		3#8, #10G, 3/4"C	10.62	O	ELEVATOR POWER	50/3P	52
53								10.62		10.62	O			54
TOTAL LOAD (KVA)						**773.94**	**773.94**	**773.94**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
TOTAL LIGHTING	L	0.00	125%	0.00
TOTAL RECEPTACLE	R	0.00	100%	0.00
TOTAL HVAC	H	0.00	100%	0.00
TOTAL MOTOR	M	0.00	100%	0.00
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00
TOTAL OTHER/MISCILLANEOUS	O	2321.83	100%	2089.65

PANEL TOTAL LOAD	
TOTAL CONNECTED LOAD	2321.83 KVA
TOTAL DEMAND LOAD	2089.65 KVA
TOTAL CONNECTED CURRENT	2796.04 AMP
TOTAL DEMAND CURRENT	2516.44 AMP
SYSTEM VOLTAGE	480Y/277 Wye

PANEL: A (NEW)

MOUNTING: SURFACE

208Y/120 VOLTS, **3** PHASE, **4** WIRE — **PANEL LOCATION:** ELECTRICAL ROOM

MCB **400A** — **FED FROM:** XA

NOTE: **L : LIGHTING, E-EQUIPMENT, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20/2P	4 - PREROLL	E	1.65	2#12, #12G, 3/4"C	2.81			4#12, #12G, 3/4"C	1.16	E	16 - CHOCOLATE TEMPERING MACHINE	20/3P	2
3			E	1.65			2.81			1.16	E			4
5	20	5 - GRINDER	E	0.96	2#12, #12G, 3/4"C			2.12		1.16	E			6
7	20	7 - HOT PLATE	E	0.70	2#12, #12G, 3/4"C	2.47				1.77	E			8
9	20	8 - VACUUM OVEN	E	1.50	2#12, #12G, 3/4"C		3.27		3#12, #12G, 3/4"C	1.77	E	17 - STEAM KETTLE	20/3P	10
11			E	0.84				2.61		1.77	E			12
13	20/3P	9 - EXTRACTION ROOM	E	0.84	3#12, #12G, 3/4"C	2.94			2#12, #12G, 3/4"C	2.10	E	ARES	20	14
15			E	0.84			1.80		2#12, #12G, 3/4"C	0.96	E	CERES CONTROL	20	16
17	20/2P	11 - BENCHTOP DISTILLATION SYSTEM	E	0.52	2#12, #12G, 3/4"C			2.29		1.77	E			18
19			E	0.52		2.29			3#12, #12G, 3/4"C	1.77	E	CERES	20/3P	20
21	20	12 - CHILLER	E	1.44	2#12, #12G, 3/4"C		3.21			1.77	E			22
23	30/2P	13 - CENTRIFUGAL ETHANOL RECOVERY S/M	E	2.08	2#10, #10G, 3/4"C			3.04	2#12, #12G, 3/4"C	0.96	E	29 - WELCH PUMP	20	24
25			E	2.08		3.33			2#12, #12G, 3/4"C	1.25	E	ETHOS 6	20/2P	26
27			E	5.76			7.01			1.25	E			28
29	60/3P	14 - SUSSMAN BOILER POWER	E	5.76	3#6, #10G, 3/4"C			6.76	2#12, #12G, 3/4"C	1.00	R	RECEIVING AREA GENERAL RECEPTACLES	20	30
31			E	5.76		6.76			2#12, #12G, 3/4"C	1.00	R	RECEIVING AREA GENERAL RECEPTACLES	20	32
33	20	14 - SUSSMAN BOILER CONTROL	E	1.44	2#12, #12G, 3/4"C		1.98		2#12, #12G, 3/4"C	0.54	R	RECEIVING AREA GENERAL RECEPTACLES	20	34
35	20	15 - EF FOR HUBER	M	0.16	2#12, #12G, 3/4"C			1.16	2#12, #12G, 3/4"C	1.00	R	HALLWAY AREA GENERAL RECEPTACLES	20	36
37	20	10 - DISTILLATION SYSTEM - HEATING MANTLE	E	1.20	2#12, #12G, 3/4"C	1.92			2#12, #12G, 3/4"C	0.72	R	HALLWAY AREA GENERAL RECEPTACLES	20	38
39	20	10 - DISTILLATION SYSTEM - STIRRING MOTOR	M	0.24	2#12, #12G, 3/4"C		0.78		2#12, #12G, 3/4"C	0.54	R	MECHANICAL ROOM / COMMON AREA RECEPTACLE	20	40
41	20	10 - DISTILLATION SYSTEM - VACCUM MONI.	E	0.24	2#12, #12G, 3/4"C			1.24	2#12, #12G, 3/4"C	1.00	L	TIME CLOCK	20	42
43	20	10 - DISTILLATION SYSTEM - TEMP. MONI.	E	0.24	2#12, #12G, 3/4"C	1.24			2#12, #12G, 3/4"C	1.00	L	TIME CLOCK	20	44
45	20	LAB ROOM GEN. RECEPT.	R	0.90	2#12, #12G, 3/4"C		1.90		2#12, #12G, 3/4"C	1.00	R	BREAK ROOM, SECURITY	20	46
47	20	LAB ROOM GEN. RECEPT.	R	0.90	2#12, #12G, 3/4"C			1.80	2#12, #12G, 3/4"C	0.90	R	LACTATION	20	48
49	20	HWHT-1	O	0.10	2#12, #12G, 3/4"C	0.10						SPARE	20	50
51	20	HWCP-1	M	0.15	2#12, #12G, 3/4"C		0.15					SPARE	20	52
53	20	PANIC DOOR HARDWARE	R	0.18	2#12, #12G, 3/4"C			0.18				SPARE	20	54
55	50/3P	15 - HUBER CHILLER	E	2.56	3#8, #10G, 3/4"C	21.00			4#1/0, #6G, 1 1/2"C	18.44	O	TO PANEL B	150/3P	56
57			E	2.56			21.00			18.44	O			58
59			E	2.56				21.00		18.44	O			60
TOTAL LOAD (KVA)						**44.86**	**43.91**	**42.20**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
TOTAL LIGHTING	L	2.00	125%	2.50
TOTAL RECEPTACLE	R	8.68	100%	8.68
TOTAL HVAC	H	0.00	100%	0.00
TOTAL MOTOR	M	0.55	100%	0.55
TOTAL KITCHEN/EQUIPMENTS	E	64.32	100%	64.32
TOTAL OTHER/MISCELLANEOUS	O	55.43	100%	55.43

PANEL TOTAL LOAD	
TOTAL CONNECTED LOAD	130.98 KVA
TOTAL DEMAND LOAD	131.48 KVA
TOTAL CONNECTED CURRENT	364.00 AMP
TOTAL DEMAND CURRENT	365.38 AMP

PANEL: B (NEW)

MOUNTING: SURFACE

208Y/120 VOLTS, **3** PHASE, **4** WIRE — **PANEL LOCATION:** ELECTRICAL ROOM

MLO **150A** — **FED FROM:** A

NOTE: **L : LIGHTING, E-EQUIPMENT, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			E	3.84		4.84				1.00	E			2
3	50/3P	18 - MIXER	E	3.84	3#8, #10G, 3/4"C		4.84		3#12, #12G, 3/4"C	1.00	E	19 - DEPOSITOR	20/3P	4
5			E	3.84				4.84		1.00	E			6
7	20	20 - SUGAR COATER	E	0.40	2#12, #12G, 3/4"C	1.40			2#12, #12G, 3/4"C	1.00	E	21 - SHEER MIXER	20/2P	8
9	20	26 - HI-LO DRINKING FOUNTAIN	E	0.50	2#12, #12G, 3/4"C		1.50			1.00	E			10
11	20	28 - REACH IN REFERIGERATOR	E	0.48	2#12, #12G, 3/4"C			0.48				SPARE	20	12
13	20	27 - FOOT OPERATED IMPULSE SEALER	E	1.00	2#12, #12G, 3/4"C	1.00						SPARE	20	14
15	20	7 - HOT PLATE	E	0.70	2#12, #12G, 3/4"C		1.70		2#12, #12G, 3/4"C	1.00	E	27 - FOOT OPERATED IMPULSE SEALER	20	16
17	20	7 - HOT PLATE	E	0.70	2#12, #12G, 3/4"C			1.60	2#12, #12G, 3/4"C	0.90	R	KITCHEN AREA GENERAL RECEP.	20	18
19	20	RESTROOM RECEPTACLE	R	0.36	2#12, #12G, 3/4"C	1.26			2#12, #12G, 3/4"C	0.90	R	KITCHEN AREA GENERAL RECEP.	20	20
21	20	HAND DRYER	M	1.20	2#12, #12G, 3/4"C		2.10		2#12, #12G, 3/4"C	0.90	R	KITCHEN AREA GENERAL RECEP.	20	22
23	20	HAND DRYER	M	1.20	2#12, #12G, 3/4"C			2.10	2#12, #12G, 3/4"C	0.90	R	KITCHEN AREA GENERAL RECEP.	20	24
25			E	0.67		1.57			2#12, #12G, 3/4"C	0.90	R	KITCHEN AREA GENERAL RECEP.	20	26
27	20/3P	EXTRACTION ROOM CONTROL PANEL	E	0.67	3#12, #12G, 3/4"C		1.67		2#12, #12G, 3/4"C	1.00	R	ORDER PREP AREA	20	28
29			E	0.67				1.57	2#12, #12G, 3/4"C	0.90	R	VAULT AREA RECEP. , PACKAGING AREA	20	30
31	20	SPARE				0.90			2#12, #12G, 3/4"C	0.90	R	STORAGE ROOM #1	20	32
33	20	SPARE					0.90		2#12, #12G, 3/4"C	0.90	R	STORAGE ROOM #1	20	34
35	20	SPARE						0.90	2#12, #12G, 3/4"C	0.90	R	STORAGE ROOM #1	20	36
37	20	PREROLL GEN RECEP.	R	0.90	2#12, #12G, 3/4"C	1.80			2#12, #12G, 3/4"C	0.90	R	STORAGE ROOM #2	20	38
39	20	PREROLL GEN RECEP.	R	0.90	2#12, #12G, 3/4"C		1.80		2#12, #12G, 3/4"C	0.90	R	STORAGE ROOM #2	20	40
41	20	FLOWER ROOM #3 RECEP.	R	0.90	2#12, #12G, 3/4"C			1.80	2#12, #12G, 3/4"C	0.90	R	STORAGE ROOM #2	20	42
43	20	FLOWER ROOM #3 RECEP.	R	0.90	2#12, #12G, 3/4"C	1.26			2#12, #12G, 3/4"C	0.36	R	ELECTRICAL ROOM RECEP.	20	44
45	20	FLOWER ROOM #4 RECEP.	R	0.90	2#12, #12G, 3/4"C		1.80		2#12, #12G, 3/4"C	0.90	R	FLOWER ROOM #1 RECEP.	20	46
47	20	FLOWER ROOM #4 RECEP.	R	0.90	2#12, #12G, 3/4"C			1.80	2#12, #12G, 3/4"C	0.90	R	FLOWER ROOM #1 RECEP.	20	48
49	20	FLOWER ROOM #4 RECEP.	R	0.90	2#12, #12G, 3/4"C	1.80			2#12, #12G, 3/4"C	0.90	R	FLOWER ROOM #1 RECEP.	20	50
51	20	FLOWER ROOM #4 RECEP.	R	0.90	2#12, #12G, 3/4"C		1.80		2#12, #12G, 3/4"C	0.90	R	FLOWER ROOM #2 RECEP.	20	52
53	20	VEGETATION ROOM RECEPT.	R	0.90	2#12, #12G, 3/4"C			1.80	2#12, #12G, 3/4"C	0.90	R	FLOWER ROOM #2 RECEP.	20	54
55	20	VEGETATION ROOM RECEPT.	R	0.90	2#12, #12G, 3/4"C	1.80			2#12, #12G, 3/4"C	0.90	R	FLOWER ROOM #2 RECEP.	20	56
57	20	VEGETATION ROOM RECEPT.	R	0.90	2#12, #12G, 3/4"C		1.80		2#12, #12G, 3/4"C	0.90	R	DRY, CURE AND TRIM ROOM	20	58
59	20	DRY, CURE AND TRIM ROOM	R	0.90	2#12, #12G, 3/4"C			0.90				SPARE	20	60
TOTAL LOAD (KVA)						**17.63**	**19.91**	**17.79**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)
TOTAL LIGHTING	L	0.00	125%	0.00
TOTAL RECEPTACLE	R	29.62	100%	29.62
TOTAL HVAC	H	0.00	100%	0.00
TOTAL MOTOR	M	2.40	100%	2.40
TOTAL KITCHEN/EQUIPMENTS	E	23.31	100%	23.31
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00

PANEL TOTAL LOAD	
TOTAL CONNECTED LOAD	55.33 KVA
TOTAL DEMAND LOAD	55.33 KVA
TOTAL CONNECTED CURRENT	153.76 AMP
TOTAL DEMAND CURRENT	153.76 AMP

PANEL: C (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **400A**

FED FROM: MDP

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 1	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM 1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	30
31	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	32
33	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	34
35	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	36
37	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	38
39	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	40
41	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	42
43	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	44
45	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	46
47	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	48
49	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C	20.25				18.75	O			50
51	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C		20.25		4-3 + 1#8G, 11/4"C.	18.75	O	TO PANEL F	100/3P	52
53	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C			20.25		18.75	O			54
55	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C	26.13				24.63	O			56
57	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C		26.13		4-1 + 1#6G, 11/4"C.	24.63	O	TO PANEL E	125/3P	58
59	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C			26.13		24.63	O			60
TOTAL LOAD (KVA)						**70.38**	**70.38**	**70.38**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	81.00	125%	101.25		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	211.13 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	231.38 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	265.30 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	290.75 AMP
TOTAL OTHER/MISCILLANEOUS	O	130.13	100%	130.13		

PANEL: E (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **125A**

FED FROM: C

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	30
31	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	32
33	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	34
35	20	LIGHT/HEATERS, FLOWER ROOM 4	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 4	20	36
37	20	SPARE				0.00						SPARE	20	38
39	20	SPARE					0.00					SPARE	20	40
41	20	SPARE						0.00				SPARE	20	42
43	20	SPARE				0.00						SPARE	20	44
45	20	SPARE					0.00					SPARE	20	46
47	20	SPARE						0.00				SPARE	20	48
49	20	SPARE				0.00						SPARE	20	50
51	20	SPARE					0.00					SPARE	20	52
53	20	SPARE						0.00				SPARE	20	54
55	20	SPARE				0.00						SPARE	20	56
57	20	SPARE					0.00					SPARE	20	58
59	20	SPARE						1.50	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 2	20	60
TOTAL LOAD (KVA)						**19.20**	**19.20**	**20.70**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	59.10	125%	73.88		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	59.10 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	73.88 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	74.26 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	92.83 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: F (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **100A**

FED FROM: C

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 5	20	30
TOTAL LOAD (KVA)						**15.00**	**15.00**	**15.00**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	45.00	125%	56.25		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	45.00 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	56.25 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	56.55 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	70.68 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: G (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **400A**

FED FROM: MDP

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	30
31	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	32
33	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 6	20	34
35	20	LIGHT/HEATERS, FLOWER ROOM 6	L	1.60	2#12, #12G, 3/4"C			1.60				SPARE	20	36
37	20	SPARE				0.00						SPARE	20	38
39	20	SPARE					0.00					SPARE	20	40
41	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 5	20	42
43	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 5	20	44
45	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 5	20	46
47	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 5	20	48
49	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.60	2#12, #12G, 3/4"C	3.20			2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 5	20	50
51	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.60	2#12, #12G, 3/4"C		3.20		2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 5	20	52
53	20	LIGHT/HEATERS, FLOWER ROOM 5	L	1.60	2#12, #12G, 3/4"C			3.20	2#12, #12G, 3/4"C	1.60	L	LIGHT/HEATERS, FLOWER ROOM 5	20	54
55	20	SPARE				16.25				16.25	O			56
57	20	SPARE					16.25		4#1/0, #6G, 1 1/2"C	16.25	O	TO PANEL D	150/3P	58
59	20	SPARE						16.25		16.25	O			60
TOTAL LOAD (KVA)						**41.85**	**41.85**	**43.45**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	78.40	125%	98.00	TOTAL CONNECTED LOAD	127.15 KVA
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL DEMAND LOAD	146.75 KVA
TOTAL HVAC	H	0.00	100%	0.00	TOTAL CONNECTED CURRENT	159.78 AMP
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL DEMAND CURRENT	184.41 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00		
TOTAL OTHER/MISCILLANEOUS	O	48.75	100%	48.75		

PANEL: D (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **150A**

FED FROM: G

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM 3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM 3	20	22
23	20	SPARE						0.00				SPARE	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C	1.50						SPARE	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C		1.50					SPARE	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM 2	L	1.50	2#12, #12G, 3/4"C			1.50				SPARE	20	30
31	20	SPARE				0.00						SPARE	20	32
33	20	SPARE					0.00					SPARE	20	34
35	20	SPARE						0.00				SPARE	20	36
37	20	SPARE				0.00						SPARE	20	38
39	20	SPARE					0.00					SPARE	20	40
41	20	SPARE						0.00				SPARE	20	42
TOTAL LOAD (KVA)						**13.50**	**13.50**	**10.50**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	37.50	125%	46.88	TOTAL CONNECTED LOAD	37.50 KVA
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL DEMAND LOAD	46.88 KVA
TOTAL HVAC	H	0.00	100%	0.00	TOTAL CONNECTED CURRENT	47.12 AMP
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL DEMAND CURRENT	58.90 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00		
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: I (NEW)

MOUNTING: SURFACE

208Y/120 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **225A**

FED FROM: XB

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20/2P	VEGETATION ROOM - MH LIGHT	L	1.00	2#12, #12G, 3/4"C	2.00			2#12, #12G, 3/4"C	1.00	L	VEGETATION ROOM - MH LIGHT	20/2P	2
3			L	1.00			2.00			1.00	L			4
5	20/2P	VEGETATION ROOM - MH LIGHT	L	1.00	2#12, #12G, 3/4"C			2.00	2#12, #12G, 3/4"C	1.00	L	VEGETATION ROOM - MH LIGHT	20/2P	6
7			L	1.00		2.00				1.00	L			8
9	20/2P	VEGETATION ROOM - MH LIGHT	L	1.00	2#12, #12G, 3/4"C		2.00		2#12, #12G, 3/4"C	1.00	L	VEGETATION ROOM - MH LIGHT	20/2P	10
11			L	1.00				2.00		1.00	L			12
13	20/2P	VEGETATION ROOM - MH LIGHT	L	1.00	2#12, #12G, 3/4"C	2.00			2#12, #12G, 3/4"C	1.00	L	VEGETATION ROOM - MH LIGHT	20/2P	14
15			L	1.00			2.00			1.00	L			16
17	20/2P	VEGETATION ROOM - MH LIGHT	L	1.00	2#12, #12G, 3/4"C			2.00	2#12, #12G, 3/4"C	1.00	L	VEGETATION ROOM - MH LIGHT	20/2P	18
19			L	1.00		2.00				1.00	L			20
21	20/2P	VEGETATION ROOM - MH LIGHT	L	1.00	2#12, #12G, 3/4"C		2.00		2#12, #12G, 3/4"C	1.00	L	VEGETATION ROOM - MH LIGHT	20/2P	22
23			L	1.00				2.00		1.00	L			24
25	20	SPARE				0.00						SPARE	20	26
27	20	SPARE					0.00					SPARE	20	28
29	20	SPARE						0.00				SPARE	20	30
31	20	LOBBY LIGHTING	L	1.60	2#12, #12G, 3/4"C	1.60						SPARE	20	32
33	20	LOBBY LIGHTING	L	1.60	2#12, #12G, 3/4"C		1.60					SPARE	20	34
35	20	DRY 206	L	0.80	2#12, #12G, 3/4"C			0.80				SPARE	20	36
37	20	TRIM ROOM/VAULT LIGHTING	L	0.80	2#12, #12G, 3/4"C	12.07				11.27	O			38
39	20	RESTROOM AND STORAGE WATER RM	L	0.80	2#12, #12G, 3/4"C		12.07		4#1, #6G, 1 1/4"C	11.27	O	PANEL H	125/3P	40
41	20	OFFICE 208, 209 LIGHTING	L	1.60	2#12, #12G, 3/4"C			12.87		11.27	O			42
TOTAL LOAD (KVA)						**21.67**	**21.67**	**21.67**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	31.20	125%	39.00	TOTAL CONNECTED LOAD	65.00 KVA
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL DEMAND LOAD	72.80 KVA
TOTAL HVAC	H	0.00	100%	0.00	TOTAL CONNECTED CURRENT	180.62 AMP
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL DEMAND CURRENT	202.30 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00		
TOTAL OTHER/MISCILLANEOUS	O	33.80	100%	33.80		

PANEL: H (NEW)

MOUNTING: SURFACE

208Y/120 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **125A**

FED FROM: I

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	KITCHEN, ACCESSIBLE UNISEX, HALLWAY	L	1.00	2#12, #12G, 3/4"C	2.00			2#12, #12G, 3/4"C	1.00	L	DRY, CURE AND TRIM ROOM	20	2
3	20	CURING	L	0.50	2#12, #12G, 3/4"C		1.50		2#12, #12G, 3/4"C	1.00	L	EXTERIOR SIGNAGE	20	4
5	20	VAULT, ORDER PREP. , PACKAGING AREA.	L	0.80	2#12, #12G, 3/4"C			1.30	2#12, #12G, 3/4"C	0.50	L	ELEVATOR MISC. LOAD	20	6
7	20	PREROLL ROOM, GRIND ROOM, LAB	L	0.80	2#12, #12G, 3/4"C	0.80						SPARE	20	8
9	20	ELECTRICAL ROOM	L	0.80	2#12, #12G, 3/4"C		0.80					SPARE	20	10
11	20	RECEIVING / LOBBY AREA	L	1.00	2#12, #12G, 3/4"C			1.00				SPARE	20	12
13	20	VEGETATION ROOM, MECHANICAL ROOM	L	0.80	2#12, #12G, 3/4"C	0.80						SPARE	20	14
15	20	SECURITY, VESTIBULE, BREAK ROOM	L	0.80	2#12, #12G, 3/4"C		0.80					SPARE	20	16
17	20	LOBBY LIGHTING	L	0.80	2#12, #12G, 3/4"C			0.80				SPARE	20	18
19	20	SPRINKLER ROOM	L	0.50	2#12, #12G, 3/4"C	0.50						SPARE	20	20
21	20	SPARE					0.00					SPARE	20	22
23	20	SPARE						0.00				SPARE	20	24
25	20	SPARE				0.00						SPARE	20	26
27	20	SPARE					0.00					SPARE	20	28
29	20	SPARE						0.00				SPARE	20	30
31	20	F5 GENERAL RECEPTACLE	R	0.90	2#12, #12G, 3/4"C	1.80			2#12, #12G, 3/4"C	0.90	R	F5 GENERAL RECEPTACLE	20	32
33	20	F1 GENERAL RECEPTACLE	R	0.90	2#12, #12G, 3/4"C		1.80		2#12, #12G, 3/4"C	0.90	R	F2 GENERAL RECEPTACLE	20	34
35	20	F1 GENERAL RECEPTACLE	R	0.90	2#12, #12G, 3/4"C			1.80	2#12, #12G, 3/4"C	0.90	R	F2 GENERAL RECEPTACLE	20	36
37	20	F4 GENERAL RECEPTACLE	R	0.90	2#12, #12G, 3/4"C	1.80			2#12, #12G, 3/4"C	0.90	R	F3 GENERAL RECEPTACLE	20	38
39	20	F4 GENERAL RECEPTACLE	R	0.90	2#12, #12G, 3/4"C		1.80		2#12, #12G, 3/4"C	0.90	R	F3 GENERAL RECEPTACLE	20	40
41	20	F4 GENERAL RECEPTACLE	R	0.90	2#12, #12G, 3/4"C			1.80	2#12, #12G, 3/4"C	0.90	R	F3 GENERAL RECEPTACLE	20	42
43	20	OFFICE 209 RECEPTACLES	R	0.90	2#12, #12G, 3/4"C	1.90			2#12, #12G, 3/4"C	1.00	R	VEG/ PROPAGATION GENERAL RECEPTACLES	20	44
45	20	OFFICE 209 RECEPTACLES	R	1.00	2#12, #12G, 3/4"C		2.00		2#12, #12G, 3/4"C	1.00	R	VEG/ PROPAGATION GENERAL RECEPTACLES	20	46
47	20	OFFICE 208 RECEPTACLES	R	1.00	2#12, #12G, 3/4"C			1.36	2#12, #12G, 3/4"C	0.36	R	VEG/ PROPAGATION GENERAL RECEPTACLES	20	48
49	20	RESTROOM/STORAGE RECEPTACLES	R	0.72	2#12, #12G, 3/4"C	1.62			2#12, #12G, 3/4"C	0.90	R	TRIM ROOM RECEPTACLES 207	20	50
51	20	WATER ROOM RECEPTACLES	R	0.90	2#12, #12G, 3/4"C		1.80		2#12, #12G, 3/4"C	0.90	R	VAULT 207C RECEPTACLES	20	52
53	20	SPARE						0.90	2#12, #12G, 3/4"C	0.90	R	DRY 206 RECEPTACLES	20	54
55	20	SPARE				0.54			2#12, #12G, 3/4"C	0.54	R	DRY 206 RECEPTACLES	20	56
57	20	SPARE					0.00					SPARE	20	58
59	20	SPARE						0.00				SPARE	20	60
TOTAL LOAD (KVA)						**11.76**	**10.50**	**8.96**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	10.30	125%	12.88	TOTAL CONNECTED LOAD	31.22 KVA
TOTAL RECEPTACLE	R	20.92	100%	20.92	TOTAL DEMAND LOAD	33.80 KVA
TOTAL HVAC	H	0.00	100%	0.00	TOTAL CONNECTED CURRENT	86.76 AMP
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL DEMAND CURRENT	93.92 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00		
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: P (NEW)

MOUNTING: SURFACE

208Y/120 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **400A**

FED FROM: XMER TP

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	30/2P	DH-1	H	1.27	2-10 + 1#10G, 3/4"C	2.18			2-12 + 1#12G, 3/4"C	0.91	H	DH-11	20/2P	2
3			H	1.27			2.18			0.91	H			4
5	30/2P	DH-2	H	1.27	2-10 + 1#10G, 3/4"C			2.18	2-12 + 1#12G, 3/4"C	0.91	H	DH-12	20/2P	6
7			H	1.27		2.18				0.91	H			8
9	30/2P	DH-3	H	1.27	2-10 + 1#10G, 3/4"C		2.18		2-12 + 1#12G, 3/4"C	0.91	H	DH-13	20/2P	10
11			H	1.27				2.18		0.91	H			12
13	30/2P	DH-4	H	1.27	2-10 + 1#10G, 3/4"C	1.82			2-12 + 1#12G, 3/4"C	0.55	M	CF-1	20	14
15			H	1.27			1.82		2-12 + 1#12G, 3/4"C	0.55	M	CF-2	20	16
17	30/2P	DH-5	H	1.27	2-10 + 1#10G, 3/4"C			1.82	2-12 + 1#12G, 3/4"C	0.55	M	CF-3	20	18
19			H	1.27		1.82			2-12 + 1#12G, 3/4"C	0.55	M	CF-4	20	20
21	30/2P	DH-6	H	1.27	2-10 + 1#10G, 3/4"C		1.82		2-12 + 1#12G, 3/4"C	0.55	M	CF-5	20	22
23			H	1.27				1.82	2-12 + 1#12G, 3/4"C	0.55	M	CF-6	20	24
25	30/2P	DH-7	H	1.27	2-10 + 1#10G, 3/4"C	1.82			2-12 + 1#12G, 3/4"C	0.55	M	CF-7	20	26
27			H	1.27			1.82		2-12 + 1#12G, 3/4"C	0.55	M	CF-8	20	28
29	30/2P	DH-8	H	1.27	2-10 + 1#10G, 3/4"C			1.82	2-12 + 1#12G, 3/4"C	0.55	M	CF-9	20	30
31			H	1.27		1.82			2-12 + 1#12G, 3/4"C	0.55	M	CF-10	20	32
33	20/2P	DH-9	H	0.91	2-10 + 1#10G, 3/4"C		1.46		2-12 + 1#12G, 3/4"C	0.55	M	CF-11	20	34
35			H	0.91				1.46	2-12 + 1#12G, 3/4"C	0.55	M	CF-12	20	36
37	20/2P	DH-10	H	0.91	2-12 + 1#12G, 3/4"C	1.46			2-12 + 1#12G, 3/4"C	0.55	M	CF-13	20	38
39			H	0.91			1.46		2-12 + 1#12G, 3/4"C	0.55	M	CF-14	20	40
41	20	DAMPERS	M	0.50	2-12 + 1#12G, 3/4"C			1.05	2-12 + 1#12G, 3/4"C	0.55	M	CF-15	20	42
43	30/2P	DH-14	H	1.27	2-10 + 1#10G, 3/4"C	1.82			2-12 + 1#12G, 3/4"C	0.55	M	CF-16	20	44
45			H	1.27			1.82		2-12 + 1#12G, 3/4"C	0.55	M	CF-17	20	46
47	30/2P	DH-15	H	1.27	2-10 + 1#10G, 3/4"C			1.82	2-12 + 1#12G, 3/4"C	0.55	M	CF-18	20	48
49			H	1.27		1.82			2-12 + 1#12G, 3/4"C	0.55	M	CF-19	20	50
51	30/2P	DH-16	H	1.27	2-10 + 1#10G, 3/4"C		1.82		2-12 + 1#12G, 3/4"C	0.55	M	CF-20	20	52
53			H	1.27				1.82	2-12 + 1#12G, 3/4"C	0.55	M	CF-21	20	54
55	30/2P	DH-17	H	1.27	2-10 + 1#10G, 3/4"C	1.82			2-12 + 1#12G, 3/4"C	0.55	M	CF-22	20	56
57			H	1.27			1.82		2-12 + 1#12G, 3/4"C	0.55	M	CF-23	20	58
59	20	DAMPERS	M	0.50	2-12 + 1#12G, 3/4"C			1.05	2-12 + 1#12G, 3/4"C	0.55	M	CF-24	20	60
61	100/3P	PANEL - N	O	10.39	4-3 + 1#8G, 1 1/4"C	10.49			2-12 + 1#12G, 3/4"C	0.10	M	EF-1	20	62
63			O	10.39			10.49		2-12 + 1#12G, 3/4"C	0.10	M	EF-2	20	64
65			O	10.39				10.49	2-12 + 1#12G, 3/4"C	0.10	M	EF-3	20	66
67	100/3P	PANEL - U	O	6.18	4-3 + 1#8G, 1 1/4"C	6.28			2-12 + 1#12G, 3/4"C	0.10	M	KEF	20	68
69			O	6.18			6.28		2-12 + 1#12G, 3/4"C	0.10	M	OAF-1	20	70
71			O	6.18				6.18				SPARE	20	72
TOTAL LOAD (KVA)						**35.33**	**34.97**	**33.69**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	103.99 KVA
TOTAL HVAC	H	39.58	100%	39.58	TOTAL DEMAND LOAD	103.99 KVA
TOTAL MOTOR	M	14.70	100%	14.70	TOTAL CONNECTED CURRENT	288.99 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	288.99 AMP
TOTAL OTHER/MISCILLANEOUS	O	49.71	100%	49.71		

PANEL: U (NEW)

MOUNTING: SURFACE

208Y/120 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **100A**

FED FROM: P

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	SPARE				0.55			2-12 + 1#12G, 3/4"C	0.55	M	CF-25	20	2
3	20	SPARE					0.55		2-12 + 1#12G, 3/4"C	0.55	M	CF-26	20	4
5	20	SPARE						0.55	2-12 + 1#12G, 3/4"C	0.55	M	CF-27	20	6
7	20	SPARE				0.55			2-12 + 1#12G, 3/4"C	0.55	M	CF-28	20	8
9	20	SPARE					0.55		2-12 + 1#12G, 3/4"C	0.55	M	CF-29	20	10
11	20	SPARE						0.55	2-12 + 1#12G, 3/4"C	0.55	M	CF-30	20	12
13	20	SPARE				0.55			2-12 + 1#12G, 3/4"C	0.55	M	CF-31	20	14
15	20	CF-46	H	0.50	2-12 + 1#12G, 3/4"C		1.05		2-12 + 1#12G, 3/4"C	0.55	M	CF-32	20	16
17	20	CF-47	H	0.50	2-12 + 1#12G, 3/4"C			1.05	2-12 + 1#12G, 3/4"C	0.55	M	CF-33	20	18
19	20	CF-48	H	0.50	2-12 + 1#12G, 3/4"C	1.05			2-12 + 1#12G, 3/4"C	0.55	M	CF-34	20	20
21	20	CF-49	H	0.50	2-12 + 1#12G, 3/4"C		1.05		2-12 + 1#12G, 3/4"C	0.55	M	CF-35	20	22
23	20	CF-50	H	0.50	2-12 + 1#12G, 3/4"C			1.05	2-12 + 1#12G, 3/4"C	0.55	M	CF-36	20	24
25	20	CF-51	H	0.50	2-12 + 1#12G, 3/4"C	1.05			2-12 + 1#12G, 3/4"C	0.55	M	CF-37	20	26
27	20	CF-52	H	0.50	2-12 + 1#12G, 3/4"C		1.05		2-12 + 1#12G, 3/4"C	0.55	M	CF-38	20	28
29	20	CF-53	H	0.50	2-12 + 1#12G, 3/4"C			1.05	2-12 + 1#12G, 3/4"C	0.55	M	CF-39	20	30
31	20	CF-54	H	0.50	2-12 + 1#12G, 3/4"C	1.05			2-12 + 1#12G, 3/4"C	0.55	M	CF-40	20	32
33	20	CF-55	H	0.50	2-12 + 1#12G, 3/4"C		1.05		2-12 + 1#12G, 3/4"C	0.55	M	CF-41	20	34
35	20	CF-56	H	0.50	2-12 + 1#12G, 3/4"C			1.05	2-12 + 1#12G, 3/4"C	0.55	M	CF-42	20	36
37	20	CF-57	H	0.50	2-12 + 1#12G, 3/4"C	1.05			2-12 + 1#12G, 3/4"C	0.55	M	CF-43	20	38
39	20	CF-58	H	0.50	2-12 + 1#12G, 3/4"C		1.05		2-12 + 1#12G, 3/4"C	0.55	M	CF-44	20	40
41	20	CF-59	H	0.50	2-12 + 1#12G, 3/4"C			1.05	2-12 + 1#12G, 3/4"C	0.55	M	CF-45	20	42
TOTAL LOAD (KVA)						**5.85**	**6.35**	**6.35**						

LOAD CLASSIFICATION	CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	0.00	125%	0.00		
TOTAL RECEPTACLE	0.00	100%	0.00	TOTAL CONNECTED LOAD	18.55 KVA
TOTAL HVAC	7.00	100%	7.00	TOTAL DEMAND LOAD	18.55 KVA
TOTAL MOTOR	11.55	100%	11.55	TOTAL CONNECTED CURRENT	51.55 AMP
TOTAL KITCHEN/EQUIPMENTS	0.00	100%	0.00	TOTAL DEMAND CURRENT	51.55 AMP
TOTAL OTHER/MISCILLANEOUS	0.00	100%	0.00		

PANEL: N (NEW)

MOUNTING: SURFACE

208Y/120 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **100A**

FED FROM: P

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	30/2P	DH-18	H	1.27	2-10 + 1#10G, 3/4"C	2.54			2-10 + 1#10G, 3/4"C	1.27	H	DH-27	30/2P	2
3			H	1.27			2.54			1.27	H			4
5	30/2P	DH-19	H	1.27	2-10 + 1#10G, 3/4"C			2.54	2-10 + 1#10G, 3/4"C	1.27	H	DH-28	30/2P	6
7			H	1.27		2.54				1.27	H			8
9	30/2P	DH-20	H	1.27	2-10 + 1#10G, 3/4"C		2.54		2-10 + 1#10G, 3/4"C	1.27	H	DH-29	30/2P	10
11			H	1.27				2.54		1.27	H			12
13	30/2P	DH-21	H	1.27	2-10 + 1#10G, 3/4"C	2.54			2-10 + 1#10G, 3/4"C	1.27	H	DH-30	30/2P	14
15			H	1.27			2.54			1.27	H			16
17	20/2P	DH-22	H	0.91	2-12 + 1#12G, 3/4"C			0.91				SPARE	20	18
19			H	0.91		0.91						SPARE	20	20
21	30/2P	DH-23	H	1.27	2-10 + 1#10G, 3/4"C		1.27					SPARE	20	22
23			H	1.27				1.27				SPARE	20	24
25	30/2P	DH-24	H	1.27	2-10 + 1#10G, 3/4"C	1.27						SPARE	20	26
27			H	1.27			1.27					SPARE	20	28
29	20/2P	DH-25	H	0.91	2-12 + 1#12G, 3/4"C			0.91				SPARE	20	30
31			H	0.91		0.91						SPARE	20	32
33	20/2P	DH-26	H	0.91	2-12 + 1#12G, 3/4"C		0.91					SPARE	20	34
35			H	0.91				0.91				SPARE	20	36
37	20	SPARE				0.10			2-12 + 1#12G, 3/4"C	0.10	M	EF-4	20	38
39	20	SPARE					0.10		2-12 + 1#12G, 3/4"C	0.10	M	EF-5	20	40
41	20	SPARE						0.10	2-12 + 1#12G, 3/4"C	0.10	M	EF-6	20	42
TOTAL LOAD (KVA)						**10.81**	**11.17**	**9.18**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	31.16 KVA
TOTAL HVAC	H	30.86	100%	30.86	TOTAL DEMAND LOAD	31.16 KVA
TOTAL MOTOR	M	0.30	100%	0.30	TOTAL CONNECTED CURRENT	86.59 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	86.59 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: J (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **400A**

FED FROM: MDP

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	30
31	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	32
33	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	34
35	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	36
37	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	38
39	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	40
41	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	42
43	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	44
45	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	46
47	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F1	20	48
49	20	LIGHT/HEATERS, FLOWER ROOM F1	L	1.50	2#12, #12G, 3/4"C	31.50				30.00	O			50
51	20	SPARE					30.00		4-1/0 + 1#6G, 1 1/2"C	30.00	O	TO PANEL K	150/3P	52
53	20	SPARE						30.00		30.00	O			54
55	20	SPARE				30.00				30.00	O			56
57	20	SPARE					30.00		4-1/0 + 1#6G, 1 1/2"C	30.00	O	TO PANEL L	150/3P	58
59	20	SPARE						30.00		30.00	O			60
TOTAL LOAD (KVA)						**85.50**	**84.00**	**84.00**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	73.50	125%	91.88		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	253.50 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	271.88 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	318.55 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	341.64 AMP
TOTAL OTHER/MISCILLANEOUS	O	180.00	100%	180.00		

PANEL: K (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **150A**

FED FROM: J

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	30
31	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	32
33	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	34
35	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	36
37	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	38
39	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	40
41	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	42
43	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	44
45	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	46
47	20	LIGHT/HEATERS, FLOWER ROOM F3	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F3	20	48
49	20	SPARE				0.00						SPARE	20	50
51	20	SPARE					0.00					SPARE	20	52
53	20	SPARE						0.00				SPARE	20	54
55	20	SPARE				0.00						SPARE	20	56
57	20	SPARE					0.00					SPARE	20	58
59	20	SPARE						0.00				SPARE	20	60
TOTAL LOAD (KVA)						**24.00**	**24.00**	**24.00**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	72.00	125%	90.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	72.00 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	90.00 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	90.47 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	113.09 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: L (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **150A**

FED FROM: J

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	30
31	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	32
33	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	34
35	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	36
37	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	38
39	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	40
41	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	42
43	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	44
45	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	46
47	20	LIGHT/HEATERS, FLOWER ROOM F4	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F4	20	48
49	20	SPARE				0.00						SPARE	20	50
51	20	SPARE					0.00					SPARE	20	52
53	20	SPARE						0.00				SPARE	20	54
55	20	SPARE				0.00						SPARE	20	56
57	20	SPARE					0.00					SPARE	20	58
59	20	SPARE						0.00				SPARE	20	60
TOTAL LOAD (KVA)						**24.00**	**24.00**	**24.00**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	72.00	125%	90.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	72.00 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	90.00 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	90.47 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	113.09 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: Q (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **400A**

FED FROM: MDP

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	30
31	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	32
33	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F5	20	34
35	20	LIGHT/HEATERS, FLOWER ROOM F5	L	1.50	2#12, #12G, 3/4"C			1.50				SPARE	20	36
37	20	SPARE				0.00						SPARE	20	38
39	20	SPARE					0.00					SPARE	20	40
41	20	SPARE						0.00				SPARE	20	42
43	20	SPARE				0.00						SPARE	20	44
45	20	SPARE					0.00					SPARE	20	46
47	20	SPARE						0.00				SPARE	20	48
49	20	SPARE				21.88				21.88	O			50
51	20	SPARE					21.88		4-1 + 1#6G, 1 1/4"C	21.88	O	TO PANEL R	125/3P	52
53	20	SPARE						21.88		21.88	O			54
55	20	SPARE				30.63				30.63	O			56
57	20	SPARE					30.63		4-1 + 1#6G, 1 1/4"C	30.63	O	TO PANEL R1	125/3P	58
59	20	SPARE						30.63		30.63	O			60
TOTAL LOAD (KVA)						**70.50**	**70.50**	**69.00**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	52.50	125%	65.63		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	210.00 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	223.13 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	263.89 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	280.38 AMP
TOTAL OTHER/MISCILLANEOUS	O	157.50	100%	157.50		

PANEL: R1 (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **125A**

FED FROM: Q

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	2
3	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	4
5	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	6
7	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	8
9	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	10
11	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	12
13	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	14
15	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	16
17	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	18
19	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	20
21	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	22
23	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	24
25	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	26
27	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	28
29	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	30
31	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	32
33	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	34
35	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	36
37	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	38
39	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	40
41	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	42
43	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	44
45	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	46
47	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	LIGHT/HEATERS, FLOWER ROOM F2	20	48
49	20	LIGHT/HEATERS, FLOWER ROOM F2	L	1.50	2#12, #12G, 3/4"C	1.50						SPARE	20	50
51	20	SPARE					0.00					SPARE	20	52
53	20	SPARE						0.00				SPARE	20	54
55	20	SPARE				0.00						SPARE	20	56
57	20	SPARE					0.00					SPARE	20	58
59	20	SPARE						0.00				SPARE	20	60
TOTAL LOAD (KVA)						**25.50**	**24.00**	**24.00**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	73.50	125%	91.88		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	73.50 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	91.88 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	92.36 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	115.45 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: R (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **125A**

FED FROM: Q

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	2
3	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	4
5	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	6
7	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	8
9	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	10
11	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	12
13	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	14
15	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	16
17	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	18
19	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	20
21	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	22
23	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	24
25	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	26
27	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	28
29	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C			3.00	2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	30
31	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C	3.00			2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	32
33	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C		3.00		2#12, #12G, 3/4"C	1.50	L	VEG/PROPAGATION	20	34
35	20	VEG/PROPAGATION	L	1.50	2#12, #12G, 3/4"C			1.50				SPARE	20	36
37	20	SPARE				0.00						SPARE	20	38
39	20	SPARE					0.00					SPARE	20	40
41	20	SPARE						0.00				SPARE	20	42
43	20	SPARE				0.00						SPARE	20	44
45	20	SPARE					0.00					SPARE	20	46
47	20	SPARE						0.00				SPARE	20	48
49	20	SPARE				0.00						SPARE	20	50
51	20	SPARE					0.00					SPARE	20	52
53	20	SPARE						0.00				SPARE	20	54
55	20	SPARE				0.00						SPARE	20	56
57	20	SPARE					0.00					SPARE	20	58
59	20	SPARE						0.00				SPARE	20	60
TOTAL LOAD (KVA)						**18.00**	**18.00**	**16.50**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	52.50	125%	65.63		
TOTAL RECEPTACLE	R	0.00	100%	0.00	**TOTAL CONNECTED LOAD**	52.50 KVA
TOTAL HVAC	H	0.00	100%	0.00	**TOTAL DEMAND LOAD**	65.63 KVA
TOTAL MOTOR	M	0.00	100%	0.00	**TOTAL CONNECTED CURRENT**	65.97 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	**TOTAL DEMAND CURRENT**	82.46 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: S (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **600A**

FED FROM: MDP

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			H	2.92		5.84				2.92	H			2
3	20/3P	ACCU-1	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-13	20/3P	4
5			H	2.92				5.84		2.92	H			6
7			H	2.92		5.84				2.92	H			8
9	20/3P	ACCU-2	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-14	20/3P	10
11			H	2.92				5.84		2.92	H			12
13			H	2.92		5.84				2.92	H			14
15	20/3P	ACCU-3	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-15	20/3P	16
17			H	2.92				5.84		2.92	H			18
19			H	2.92		5.84				2.92	H			20
21	20/3P	ACCU-4	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-16	20/3P	22
23			H	2.92				5.84		2.92	H			24
25			H	2.92		5.84				2.92	H			26
27	20/3P	ACCU-5	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-17	20/3P	28
29			H	2.92				5.84		2.92	H			30
31			H	2.92		5.84				2.92	H			32
33	20/3P	ACCU-6	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-18	20/3P	34
35			H	2.92				5.84		2.92	H			36
37			H	2.92		5.84				2.92	H			38
39	20/3P	ACCU-7	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-20	20/3P	40
41			H	2.92				5.84		2.92	H			42
43			H	2.92		5.84				2.92	H			44
45	20/3P	ACCU-8	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-21	20/3P	46
47			H	2.92				5.84		2.92	H			48
49			H	2.92		5.84				2.92	H			50
51	20/3P	ACCU-9	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-22	20/3P	52
53			H	2.92				5.84		2.92	H			54
55			H	2.92		5.84				2.92	H			56
57	20/3P	ACCU-10	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-23	20/3P	58
59			H	2.92				5.84		2.92	H			60
61			H	2.92		5.84				2.92	H			62
63	20/3P	ACCU-11	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-24	20/3P	64
65			H	2.92				5.84		2.92	H			66
67			H	2.92		73.00			4-600KCM + 1#3G, 3 1/2"C	70.08	O			68
69	20/3P	ACCU-12	H	2.92	3-12 + 1#12G, 3/4"C		73.00			70.08	O	TO PANEL T	300/3P	70
71			H	2.92				73.00		70.08	O			72
TOTAL LOAD (KVA)						**137.24**	**137.24**	**137.24**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	411.72 KVA
TOTAL HVAC	H	201.48	100%	201.48	TOTAL DEMAND LOAD	411.72 KVA
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL CONNECTED CURRENT	517.37 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	517.37 AMP
TOTAL OTHER/MISCILLANEOUS	O	210.24	100%	210.24		

PANEL: T (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MLO **400A**

FED FROM: S

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			H	2.92		5.84				2.92	H			2
3	20/3P	ACCU-25	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-55	20/3P	4
5			H	2.92				5.84		2.92	H			6
7			H	2.92		5.84				2.92	H			8
9	20/3P	ACCU-36	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-56	20/3P	10
11			H	2.92				5.84		2.92	H			12
13			H	2.92		5.84				2.92	H			14
15	20/3P	ACCU-39	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-57	20/3P	16
17			H	2.92				5.84		2.92	H			18
19			H	2.92		5.84				2.92	H			20
21	20/3P	ACCU-40	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-58	20/3P	22
23			H	2.92				5.84		2.92	H			24
25			H	2.92		5.84				2.92	H			26
27	20/3P	ACCU-41	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-59	20/3P	28
29			H	2.92				5.84		2.92	H			30
31			H	2.92		5.84				2.92	H			32
33	20/3P	ACCU-42	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-60	20/3P	34
35			H	2.92				5.84		2.92	H			36
37			H	2.92		5.84				2.92	H			38
39	20/3P	ACCU-43	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-61	20/3P	40
41			H	2.92				5.84		2.92	H			42
43			H	2.92		5.84				2.92	H			44
45	20/3P	ACCU-44	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-62	20/3P	46
47			H	2.92				5.84		2.92	H			48
49			H	2.92		5.84				2.92	H			50
51	20/3P	ACCU-51	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-63	20/3P	52
53			H	2.92				5.84		2.92	H			54
55			H	2.92		5.84				2.92	H			56
57	20/3P	ACCU-52	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-64	20/3P	58
59			H	2.92				5.84		2.92	H			60
61			H	2.92		5.84				2.92	H			62
63	20/3P	ACCU-53	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-65	20/3P	64
65			H	2.92				5.84		2.92	H			66
67			H	2.92		5.84				2.92	H			68
69	20/3P	ACCU-54	H	2.92	3-12 + 1#12G, 3/4"C		5.84		3-12 + 1#12G, 3/4"C	2.92	H	ACCU-66	20/3P	70
71			H	2.92				5.84		2.92	H			72
TOTAL LOAD (KVA)						**70.08**	**70.08**	**70.08**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	210.24 KVA
TOTAL HVAC	H	210.24	100%	210.24	TOTAL DEMAND LOAD	210.24 KVA
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL CONNECTED CURRENT	264.19 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	264.19 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: V (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **600A**

FED FROM: MDP

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			H	2.92		9.03				6.11	H			2
3	20/3P	ACCU-67	H	2.92	3-12 + 1#12G, 3/4"C		9.03		3-10 + 1#10G, 3/4"C	6.11	H	AC-12	25/3P	4
5			H	2.92				9.03		6.11	H			6
7			H	6.11		12.22				6.11	H			8
9	25/3P	AC-1	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-13	25/3P	10
11			H	6.11				12.22		6.11	H			12
13			H	6.11		12.22				6.11	H			14
15	25/3P	AC-2	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-14	25/3P	16
17			H	6.11				12.22		6.11	H			18
19			H	6.11		12.22				6.11	H			20
21	25/3P	AC-3	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-15	25/3P	22
23			H	6.11				12.22		6.11	H			24
25			H	6.11		12.22				6.11	H			26
27	25/3P	AC-4	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-16	25/3P	28
29			H	6.11				12.22		6.11	H			30
31			H	6.11		12.22				6.11	H			32
33	25/3P	AC-5	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-17	25/3P	34
35			H	6.11				12.22		6.11	H			36
37			H	6.11		12.22				6.11	H			38
39	25/3P	AC-6	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-18	25/3P	40
41			H	6.11				12.22		6.11	H			42
43			H	6.11		12.22				6.11	H			44
45	25/3P	AC-7	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-20	25/3P	46
47			H	6.11				12.22		6.11	H			48
49			H	6.11		12.22				6.11	H			50
51	25/3P	AC-8	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-21	25/3P	52
53			H	6.11				12.22		6.11	H			54
55			H	6.11		12.22				6.11	H			56
57	25/3P	AC-9	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-22	25/3P	58
59			H	6.11				12.22		6.11	H			60
61			H	6.11		12.22				6.11	H			62
63	25/3P	AC-10	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-23	25/3P	64
65			H	6.11				12.22		6.11	H			66
67			H	6.11		12.22				6.11	H			68
69	25/3P	AC-11	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-24	25/3P	70
71			H	6.11				12.22		6.11	H			72
TOTAL LOAD (KVA)						**143.45**	**143.45**	**143.45**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	430.35 KVA
TOTAL HVAC	H	430.35	100%	430.35	TOTAL DEMAND LOAD	430.35 KVA
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL CONNECTED CURRENT	540.78 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	540.78 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: W (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE

PANEL LOCATION: ELECTRICAL ROOM

MCB **600A**

FED FROM: MDP

NOTE: **L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)**

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			H	6.11		12.22				6.11	H			2
3	25/3P	AC-25	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-55	25/3P	4
5			H	6.11				12.22		6.11	H			6
7			H	6.11		12.22				6.11	H			8
9	25/3P	AC-36	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-56	25/3P	10
11			H	6.11				12.22		6.11	H			12
13			H	6.11		12.22				6.11	H			14
15	25/3P	AC-39	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-57	25/3P	16
17			H	6.11				12.22		6.11	H			18
19			H	6.11		12.22				6.11	H			20
21	25/3P	AC-40	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-58	25/3P	22
23			H	6.11				12.22		6.11	H			24
25			H	6.11		12.22				6.11	H			26
27	25/3P	AC-41	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-59	25/3P	28
29			H	6.11				12.22		6.11	H			30
31			H	6.11		12.22				6.11	H			32
33	25/3P	AC-42	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-60	25/3P	34
35			H	6.11				12.22		6.11	H			36
37			H	6.11		12.22				6.11	H			38
39	25/3P	AC-43	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-61	25/3P	40
41			H	6.11				12.22		6.11	H			42
43			H	6.11		12.22				6.11	H			44
45	25/3P	AC-44	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-62	25/3P	46
47			H	6.11				12.22		6.11	H			48
49			H	6.11		12.22				6.11	H			50
51	25/3P	AC-51	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-63	25/3P	52
53			H	6.11				12.22		6.11	H			54
55			H	6.11		12.22				6.11	H			56
57	25/3P	AC-52	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-64	25/3P	58
59			H	6.11				12.22		6.11	H			60
61			H	6.11		12.22				6.11	H			62
63	25/3P	AC-53	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-65	25/3P	64
65			H	6.11				12.22		6.11	H			66
67			H	6.11		12.22				6.11	H			68
69	25/3P	AC-54	H	6.11	3-10 + 1#10G, 3/4"C		12.22		3-10 + 1#10G, 3/4"C	6.11	H	AC-66	25/3P	70
71			H	6.11				12.22		6.11	H			72
TOTAL LOAD (KVA)						**146.64**	**146.64**	**146.64**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	439.92 KVA
TOTAL HVAC	H	439.92	100%	439.92	TOTAL DEMAND LOAD	439.92 KVA
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL CONNECTED CURRENT	552.80 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	552.80 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: AA (NEW)

MOUNTING: SURFACE

480Y/277 VOLTS, **3** PHASE, **4** WIRE — **ANEL LOCATION:** ELECTRICAL ROOM

MCB 200A — **FED FROM:** MDP

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			H	6.11		6.11								2
3	25/3P	AC-67	H	6.11	3-10 + 1#10G, 3/4"C		6.11					SPARE	25/3P	4
5			H	6.11				6.11						6
7						0.00								8
9	25/3P	SPARE					0.00					SPARE	25/3P	10
11								0.00						12
13						0.00								14
15	25/3P	SPARE					0.00					SPARE	25/3P	16
17								0.00						18
19						0.00								20
21		SPACE					0.00					SPACE		22
23								0.00						24
25						0.00								26
27		SPACE					0.00					SPACE		28
29								0.00						30
31						0.00								32
33		SPACE					0.00					SPACE		34
35								0.00						36
37						0.00								38
39		SPACE					0.00					SPACE		40
41								0.00						42
TOTAL LOAD (KVA)						**6.11**	**6.11**	**6.11**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	18.33 KVA
TOTAL HVAC	H	18.33	100%	16.50	TOTAL DEMAND LOAD	16.50 KVA
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL CONNECTED CURRENT	23.03 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	20.73 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: XA (NEW)

MOUNTING: SURFACE

208Y/120 VOLTS, **3** PHASE, **4** WIRE — **PANEL LOCATION:** ELECTRICAL ROOM

MCB 600A — **FED FROM:** EX.600A METER

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			H	2.03		4.29				2.26	H			2
3	20/3P	ACCU-28	H	2.03	3-12 + 1#12G, 3/4"C		4.29		3-12 + 1#12G, 3/4"C	2.26	H	ACCU-46	20/3P	4
5			H	2.03				4.29		2.26	H			6
7			H	2.03		4.26				2.23	H			8
9	20/3P	ACCU-37	H	2.03	3-12 + 1#12G, 3/4"C		4.26		3-12 + 1#12G, 3/4"C	2.23	H	ACCU-47	20/3P	10
11			H	2.03				4.26		2.23	H			12
13			H	1.47		3.70				2.23	H			14
15	20/3P	ACCU-38	H	1.47	3-12 + 1#12G, 3/4"C		3.70		3-12 + 1#12G, 3/4"C	2.23	H	ACCU-48	20/3P	16
17			H	1.47				3.70		2.23	H			18
19			H	2.26		4.49				2.23	H			20
21	20/3P	ACCU-45	H	2.26	3-12 + 1#12G, 3/4"C		4.49		3-12 + 1#12G, 3/4"C	2.23	H	ACCU-49	20/3P	22
23			H	2.26				4.49		2.23	H			24
25	20	EWH-1	H	0.50	2-12 + 1#12G, 3/4"C	2.73				2.23	H			26
27	20	EWH-2	H	0.50	2-12 + 1#12G, 3/4"C		2.73		3-12 + 1#12G, 3/4"C	2.23	H	ACCU-50	20/3P	28
29	20	EWH-3	H	1.00	2-12 + 1#12G, 3/4"C			3.23		2.23	H			30
31	20	EWH-6	H	1.08	2-12 + 1#12G, 3/4"C	1.08						SPARE	20	32
33	20	EWH-8	H	0.50	2-12 + 1#12G, 3/4"C		0.50					SPARE	20	34
35	20	EWH-9	H	0.50	2-12 + 1#12G, 3/4"C			0.50				SPARE	20	36
37	20	SPARE				0.00						SPARE	20	38
39	20	SPARE					0.00					SPARE	20	40
41	20	SPARE						0.00				SPARE	20	42
SUBFEED TO PANEL A									SUBFEED TO PANEL A					
TOTAL LOAD (KVA)						**20.55**	**19.97**	**20.47**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	61.00 KVA
TOTAL HVAC	H	61.00	100%	42.70	TOTAL DEMAND LOAD	42.70 KVA
TOTAL MOTOR	M	0.00	100%	0.00	TOTAL CONNECTED CURRENT	146.91 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	102.84 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: AB (NEW)

MOUNTING: SURFACE

120/240 VOLTS, **3** PHASE, **4** WIRE — **ANEL LOCATION:** ELECTRICAL ROOM

MCB 100A — **FED FROM:** XMER AB

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20/2P	EF-7	M	0.32	2-12 + 1#12G, 3/4"C	0.87			2-12 + 1#12G, 3/4"C	0.55	M	EF-8	20/2P	2
3			M	0.32			0.87			0.55				4
5	20/2P	EF-9	M	0.32	2-12 + 1#12G, 3/4"C			0.87	2-12 + 1#12G, 3/4"C	0.55	M	EF-10	20/2P	6
7			M	0.32		0.87				0.55				8
9	20/2P	EF-11	M	0.32	2-12 + 1#12G, 3/4"C		0.87		2-12 + 1#12G, 3/4"C	0.55	M	EF-12	20/2P	10
11			M	0.32				0.87		0.55				12
13	20/2P	EF-13	M	0.32	2-12 + 1#12G, 3/4"C	0.87			2-12 + 1#12G, 3/4"C	0.55	M	EF-14	20/2P	14
15			M	0.32			0.87			0.55				16
17	20/2P	EF-15	M	0.32	2-12 + 1#12G, 3/4"C			0.87	2-12 + 1#12G, 3/4"C	0.55	M	EF-16	20/2P	18
19			M	0.32		0.87				0.55				20
21	20/2P	EF-17	M	0.32	2-12 + 1#12G, 3/4"C		0.87		2-12 + 1#12G, 3/4"C	0.55	M	EF-18	20/2P	22
23			M	0.32				0.87		0.55				24
25	20/2P	EF-19	M	0.32	2-12 + 1#12G, 3/4"C	0.87			2-12 + 1#12G, 3/4"C	0.55	M	EF-20	20/2P	26
27			M	0.32			0.87			0.55				28
29	20/2P	EF-21	M	0.32	2-12 + 1#12G, 3/4"C			0.32				SPARE	20	30
31			M	0.32		1.32			2-12 + 1#12G, 3/4"C	1.00	H	EWH-7	20/2P	32
33	20	SPARE					1.00			1.00	H			34
35	20	SPARE						1.00	2-12 + 1#12G, 3/4"C	1.00	H	EWH-4	20/2P	36
37	20	SPARE				1.00				1.00	H			38
39	20	SPARE					1.00		2-12 + 1#12G, 3/4"C	1.00	H	EWH-5	20/2P	40
41	20	SPARE						1.00		1.00	H			42
TOTAL LOAD (KVA)						**6.67**	**6.35**	**5.80**						

LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	14.97 KVA
TOTAL HVAC	H	6.00	100%	5.40	TOTAL DEMAND LOAD	14.37 KVA
TOTAL MOTOR	M	8.97	100%	8.97	TOTAL CONNECTED CURRENT	36.05 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	34.61 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		

PANEL: XB (NEW)

MOUNTING: SURFACE

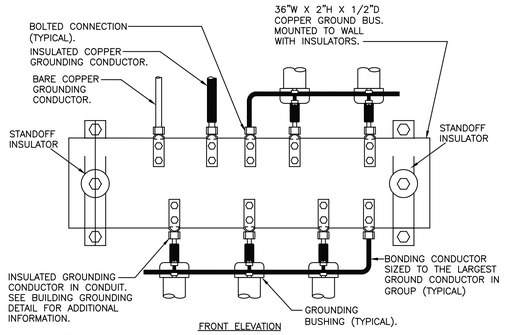
208Y/120 VOLTS, **3** PHASE, **4** WIRE — **PANEL LOCATION:** ELECTRICAL ROOM

MCB 400A — **FED FROM:** EX. 400A METER

NOTE: L : LIGHTING, H : HVAC LOAD, M : MOTOR LOAD, R : RECEPTACLES, O : OTHER/MISC. (TYPICAL)

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20/2P	ACCU-19	H	0.90	2-12 + 1#12G, 3/4"C	1.80				0.90	H			2
3			H	0.90			1.80		2-12 + 1#12G, 3/4"C	0.90	H	ACCU-29	20/2P	4
5	35/2P	ACCU-26	H	3.03	2-8 + 1#10G, 3/4"C			3.93		0.90	H			6
7			H	3.03		3.93				0.90	H	ACCU-30	20/2P	8
9	35/2P	ACCU-27	H	3.03	2-8 + 1#10G, 3/4"C		3.93		2-12 + 1#12G, 3/4"C	0.90	H	ACCU-31	20/2P	10
11			H	3.03				3.93		0.90	H			12
13	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C	2.50				0.90	H			14
15	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C		2.50		2-12 + 1#12G, 3/4"C	0.90	H	ACCU-32	20/2P	16
17	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C			3.53		1.93	H			18
19	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C	3.53			2-12 + 1#12G, 3/4"C	1.93	H	ACCU-33	20/2P	20
21	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C		2.87			1.27	H			22
23	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C			2.87		1.27	H	ACCU-34	20/2P	24
25	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C	2.50				0.90	H			26
27	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C		2.50		2-12 + 1#12G, 3/4"C	0.90	H	ACCU-35	20/2P	28
29	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C			1.60				SPARE	20	30
31	20	CONDEN. DRAIN PUMP	M	1.60	2-12 + 1#12G, 3/4"C	1.60						SPARE	20	32
33	20	SPARE					0.00					SPARE	20	34
35	20	EF-22	M	0.46	2-12 + 1#12G, 3/4"C			2.02	2-12 + 1#12G, 3/4"C	1.56	H	AC-26	20/2P	36
37	20	EF-23	M	0.46	2-12 + 1#12G, 3/4"C	2.02				1.56	H			38
39	20	EF-24	M	0.46	2-12 + 1#12G, 3/4"C		2.02		2-12 + 1#12G, 3/4"C	1.56	H	AC-27	20/2P	40
41	20	EF-25	M	0.46	2-12 + 1#12G, 3/4"C			2.02		1.56	H			42
TOTAL LOAD (KVA)						**17.88**	**15.62**	**19.89**						

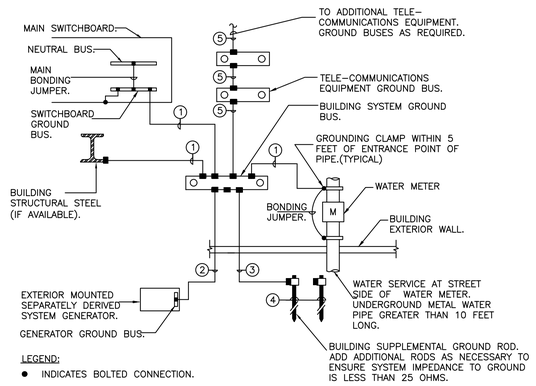
LOAD CLASSIFICATION		CONNECTED LOAD (KVA)	DEMAND FACTOR	DEMAND LOAD (KVA)	PANEL TOTAL LOAD	
TOTAL LIGHTING	L	0.00	125%	0.00		
TOTAL RECEPTACLE	R	0.00	100%	0.00	TOTAL CONNECTED LOAD	53.38 KVA
TOTAL HVAC	H	35.56	100%	24.89	TOTAL DEMAND LOAD	42.72 KVA
TOTAL MOTOR	M	17.82	100%	17.82	TOTAL CONNECTED CURRENT	128.57 AMP
TOTAL KITCHEN/EQUIPMENTS	E	0.00	100%	0.00	TOTAL DEMAND CURRENT	102.88 AMP
TOTAL OTHER/MISCILLANEOUS	O	0.00	100%	0.00		



NOTES:

1. REFER TO BUILDING GROUNDING ELECTRODE SYSTEM DETAIL FOR EXACT CONFIGURATION.

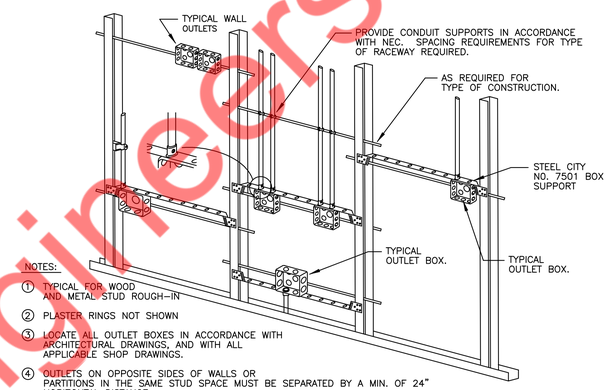
1 / E5.0 BUILDING ELECTRICAL SYSTEMS GROUND BUS
N.T.S



LEGEND:

- ● INDICATES BOLTED CONNECTION.
- ■ INDICATES EXOTHERMIC WELD CONNECTION, COMPATIBLE WITH MATERIALS BEING JOINED.
- (1) INSULATED COPPER GROUNDING ELECTRODE CONDUCTOR IN CONDUIT SIZED AS PER NEC ARTICLE 250.66.
- (2) INSULATED COPPER GROUNDING ELECTRODE CONDUCTOR ENCASED IN CONCRETE SIZED AS PER NEC ARTICLE 250.66
- (3) #2 IN 3/4"C AWG BARE COPPER GROUND CONDUCTOR.
- (4) 3/4" x 10'-0" LONG COPPER-CLAD GROUND ROD DRIVEN WITH TOP 12" BELOW GRADE. GROUNDING RODS SHALL BE SPACED NO LESS THAN 6' APART
- (5) #4/0 IN 1"C INSULATED COPPER GROUND CONDUCTOR IN 30mm CONDUIT.

2 / E5.0 BUILDING GROUNDING ELECTRODE SYSTEM
N.T.S



NOTES:

(1) TYPICAL FOR WOOD AND METAL STUD ROUGH-IN

(2) PLASTER RINGS NOT SHOWN

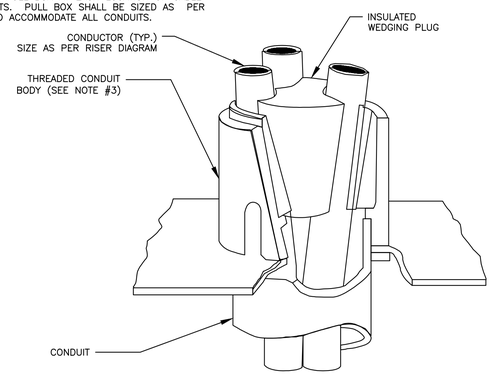
(3) LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.

(4) OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY A MIN. OF 24" HORIZONTAL DISTANCE.

3 / E5.0 DETAIL TYPICAL ROUGH-IN REQUIREMENTS
N.T.S

NOTES:

1. ALL CONDUCTORS IN VERTICAL RACEWAYS SHALL BE SUPPORTED IN ACCORDANCE WITH ARTICLE 300.19 OF NEC. CABLE SUPPORTS SHALL BE LOCATED AT THE INTERVALS REQUIRED BY THE NEC.
2. CABLE SUPPORT SYSTEM SHALL BE AS MANUFACTURED BY O-Z GEDNEY WITH pOZI-GRIP "S-STYLE" WEDGING PLUG OR APPROVED EQUAL.
3. FOR THREADLESS CONDUIT (RIGID, IMC OR EMT), ATTACH CONDUIT BODY TO MALE THREADS OF A SET SCREW OR COMPRESSION CONNECT, AS PERMITTED BY SPECIFICATIONS.
4. PROVIDE PULL BOX AT EACH LOCATION OF CABLE SUPPORTS. PULL BOX SHALL BE SIZED AS PER CODE TO ACCOMMODATE ALL CONDUITS.



4 / E5.0 VERTICAL CABLE SUPPORT DETAIL
N.T.S

PLUMBING SYMBOLS LIST

SAN	SANITARY SEWER (ABOVE GROUND)
SAN	SANITARY SEWER (BELOW GROUND)
	VENT PIPING
	HOT WATER PIPING
	HOT WATER RETURN PIPING
	COLD WATER PIPING
	P-TRAP
	PIPE UP
	PIPE DROP
	CLEANOUT
	PLUGGED OUTLET/CLEANOUT
	FLOOR SINK
	TRENCH DRAIN
	FLOOR DRAIN

PLUMBING ABBREVIATIONS

CO-1	CLEANOUT
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
SAN	SANITARY
V	VENT
W	WASTE
LAV	LAVATORY
WC	WATER CLOSET
TYP.	TYPICAL
DN	DOWN
AFF	ABOVE FINISH FLOOR
FD	FLOOR DRAIN
N.I.S	NOT IN SCOPE
BFP/RPZ	BACK FLOW PREVENTER
VTR	VENT THROUGH ROOF
TD	TRENCH DRAIN
HWHT-1	WATER HEATER
HWCP-1	HOT WATER CIRCULATION PUMP
3CS	3-COMPARTMENT SINK
HS	HAND SINK
GI	GREASE INTERCEPTOR
EWS	EYE WASH STATION

PLUMBING DRAWING LIST

P0.1	SPECIFICATIONS
P0.2	PLUMBING NOTES
P1.0	SANITARY PLAN -1
P1.1	SANITARY PLAN -2
P1.2	WATER & GAS PLAN -1
P1.3	WATER & GAS PLAN -2
P3.0	PLUMBING DETAILS
P4.0	RISERS & SCHEDULES

BUILDING DEPARTMENT PLUMBING NOTES

1. ALL PLUMBING SYSTEMS (SANITARY, WASTE, VENT, WATER, STORM) AND ASSOCIATED EQUIPMENT SHALL BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER I, 890 OF 2014 ILLINOIS PLUMBING CODE.
2. INSTALLATION OF UNDERGROUND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER I, SUBPART J, ILLINOIS PLUMBING CODE.
3. PROTECTION OF PIPING AND PLUMBING SYSTEM COMPONENTS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 890.1130, ILLINOIS PLUMBING CODE.
4. MATERIALS USED IN PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 890.210, ILLINOIS PLUMBING CODE.
5. EQUIPMENT CONNECTIONS AND JOINING OF PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER I, SUBPART C OF ILLINOIS PLUMBING CODE.
6. DEEP SEAL TRAPS FOR FLOOR DRAINS SHALL BE PROVIDED AS PER SECTION 890.730. OF ILLINOIS PLUMBING CODE.
7. DRAINAGE PIPE CLEANOUTS AS PER SECTION 890.420 ILLINOIS PLUMBING CODE.
8. VERTICAL AND HORIZONTAL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 890-920,930 ILLINOIS PLUMBING CODE.
9. WATER SUPPLY SYSTEMS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER I, SUBPART I OF ILLINOIS PLUMBING CODE.
10. THE SANITARY DRAINAGE SYSTEM SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER I, SUBPART J OF ILLINOIS PLUMBING CODE.
11. VENT PIPING FOR THE SANITARY DRAINAGE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER I, SUBPART K OF ILLINOIS PLUMBING CODE.
12. INSPECTION AND TESTING OF PLUMBING SYSTEMS SHALL BE IN ACCORDANCE WITH CHAPTER I SUBPART M OF ILLINOIS PLUMBING CODE.
13. GAS PIPING INSTALLATION SHALL IN IN ACCORDANCE WITH 2015 NATIONAL FUEL GAS CODE, CHAPTER 7.

PLUMBING SPECIFICATIONS:

1. BASIC PLUMBING REQUIREMENTS, MATERIALS AND METHODS

1.01 SCOPE

A. PROVIDE ALL MATERIAL, TOOLS, SUPERVISION AND LABOR INCLUDING ALL MISCELLANEOUS AND INCIDENTAL ITEMS REQUIRED FOR COMPLETE AND OPERABLE PLUMBING INSTALLATIONS AS SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING AND NEW CONDITIONS AND MATERIALS WITHIN THE CONSTRUCTION AREA. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.

C. OBTAIN ALL PERMITS, PAY ALL PERMIT FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER FOR RECORD.

D. THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.

E. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE CONDITIONS AND THE EXTENT OF THE WORK. BY COMMENCING WORK, THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT, SCOPE OF WORK AND BID PRICE SUCH THAT NO ADDITIONAL COMPENSATION SHALL BE FORTHCOMING FOR UNFORESEEN EXISTING CONDITIONS.

F. IN ALL AREAS SUBJECT TO FREEZING CONDITIONS, THE CONTRACTOR SHALL PROVIDE FREEZE PROTECTION FOR ALL DOMESTIC WATER PIPING INSTALLED UNDER HIS CONTRACT.

G. ALL ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH THE CONTRACTOR FOR ELECTRICAL WORK. THIS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING FOR EQUIPMENT INSTALLED UNDER HIS CONTRACT. THE CONTRACTOR FOR ELECTRICAL WORK IS RESPONSIBLE FOR LINE VOLTAGE POWER WIRING ONLY.

H. COLOR AND FINISH SELECTIONS FOR ALL MATERIALS, INCLUDING PAINTING OF PIPING, SHALL BE AS DIRECTED AND/OR APPROVED BY THE ARCHITECT.

I. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED AS IF SPECIFIED OR INDICATED ON THE DRAWINGS.

J. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS FOR THE INSTALLATION, CONNECTION, EXTENSION OR MODIFICATION TO ALL UTILITY SERVICES WITH RESPECTIVE PROVIDERS INCLUDING PAYMENT OF ALL ASSOCIATED FEES.

K. THE CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING. ALL PAINTING IN AREAS WITH COMPLETE FINISH RENOVATIONS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.02 SUBMITTALS

A. SUBMITTAL REQUIREMENTS SHALL BE COORDINATED WITH THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL PROVIDE SUBMITTALS AS LISTED BELOW.

1. PIPE AND FITTINGS
2. VALVES
3. HANGERS AND SUPPORTS
4. PLUMBING PIPING LAYOUT
5. TESTS
6. PLUMBING FIXTURES
7. WATER HEATERS & ACCESSORIES
8. MIXING VALVES
9. GREASE INTERCEPTOR
10. ALL SCHEDULED PLUMBING EQUIPMENT

B. SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS WILL BE RETURNED REJECTED.

C. THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING WITH THE CONSTRUCTION DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWINGS STAMP.

D. REVIEW OF SHOP DRAWINGS BY THE ENGINEER SHALL BE LIMITED TO THE INITIAL REVIEW, AND A SECOND REVIEW OF ANY REQUIRED RESUBMITTED DATA. IF THE ENGINEER IS REQUIRED TO REVIEW SHOP DRAWINGS FOR A THIRD (OR MORE) SUBMISSION OF THE SAME ITEM, THE CONTRACTOR SHALL BE LIABLE FOR COMPENSATING THE ENGINEER FOR THESE SUBSEQUENT REVIEWS AS PER THE ENGINEER'S CURRENT HOURLY RATE SCHEDULE.

E. SUBMIT PROOF OF APPROVAL AND/OR CONFIRMATION OF SATISFACTORY TEST RESULTS TO THE OWNER AND THE ARCHITECT.

F. SUBMIT TO THE OWNER'S MAINTENANCE PERSONNEL OPERATION AND MAINTENANCE DATA FOR ALL SYSTEM COMPONENTS, SERVICING REQUIREMENTS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY AND CONTACT INFORMATION FOR SERVICE/SUPPLY COMPANY.

G. FOR ALL BELOW GRADE PIPING WHERE ACTUAL INSTALLATION DEVIATES FROM CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS INDICATING BELOW GRADE PIPE LOCATIONS DIMENSIONED TO NEAREST COLUMN LINES.

H. RECORD AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE OWNER/TENANT AFTER COMPLETION OF THE WORK SHOWING ANY ALTERATIONS, ADDITIONS AND/OR DELETIONS TO THE SYSTEM(S) INSTALLED.

1.03 SUBSTITUTIONS

A. ALL EQUIPMENT SHALL BE PRODUCTS OF THE SPECIFIED MANUFACTURER OR MANUFACTURERS. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER OR MANUFACTURER'S EQUIPMENT. FOR SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT TO BE CONSIDERED, THE SUBSTITUTION MUST BE INDICATED PRIOR TO BIDDING WITH THE REASON FOR THE PROPOSED SUBSTITUTION IDENTIFIED, AND THE PROPOSED CREDIT TO THE OWNER INDICATED. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF ANY PROPOSED SUBSTITUTIONS.

B. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES WHICH MAY BE AFFECTED BY SUBSTITUTIONS, INCLUDING ALL RELATED COSTS.

1.05 DEFINITIONS

A. FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.

B. INSTALL: TO ERECT, MOUNT AND CONNECT, COMPLETE WITH RELATED ACCESSORIES.

C. PROVIDE: TO FURNISH AND INSTALL.

D. PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK WHICH IS SPECIFIED HEREIN AND SHOWN ON THESE DRAWINGS.

1.06 DRAWINGS

A. THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT AND ROUTING OF PIPING AND GENERAL LOCATIONS OF EQUIPMENT. PRECISE LOCATIONS OF EQUIPMENT, RISERS AND STACKS, AND ROUTING AND ELEVATION OF ALL PIPING SYSTEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECT, ARCHITECTURAL DRAWINGS, THE WORK OF OTHER TRADES, EXISTING AND NEW BUILDING CONDITIONS AND/OR THE PREFERENCES OF THE OWNER/TENANT AS CONSTRUCTION PROCEEDS. ALL PIPING SHALL BE INSTALLED CONCEALED IN FINISHED SPACES, UNLESS NOTED OTHERWISE.

B. PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.

C. REFER TO PLUMBING EQUIPMENT/FIXTURE SCHEDULE ON THE DRAWINGS FOR ALL FIXTURE AND EQUIPMENT SPECIFICATIONS.

D. REFER TO FIXTURE CONNECTION SIZE SCHEDULE FOR ALL FIXTURE ROUGHING SIZE REQUIREMENTS.

E. VERIFY ALL INDICATED CONDITIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES. THE DRAWINGS REFLECT CONDITIONS WHICH CAN BE REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS OR FROM DRAWINGS AND INFORMATION FURNISHED BY THE OWNER.

F. LOCATE ALL FIXTURES AND EQUIPMENT AS PER THE FINAL ARCHITECTURAL DRAWINGS.

1.07 PRODUCTS

A. SANITARY AND VENT PIPING:

1. ABOVE GRADE PIPING SHALL BE HUBLESS CAST IRON PIPE WITH STAINLESS STEEL COUPLINGS AND ELASTOMERIC GASKETS WITH A MINIMUM 4 BANDS PER COUPLING.
2. SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT OF RUN FOR PIPE OVER 3" (I.D.) AND 1/4" PER FOOT OF RUN FOR PIPE 3" AND SMALLER (I.D.). VENT PIPING SHALL BE PITCHED TO DRAIN.
3. ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL.

B. DOMESTIC WATER PIPING:

1. ABOVE GRADE WATER PIPING SHALL BE TYPE 'L' HARD-DRAWN COPPER TUBE.
2. FITTINGS IN DOMESTIC WATER PIPING SHALL BE WROUGHT COPPER OR CAST BRASS.
3. JOINTS SHALL BE MADE WITH LEAD-FREE SOLDER.
4. THE ENTIRE DOMESTIC WATER DISTRIBUTION SYSTEM SHALL BE INSULATED INCLUDING ALL VALVES, FITTINGS, ETC.
5. COMPLY WITH NSF 61 FOR MATERIALS FOR WATER-SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.
6. ALL DOMESTIC WATER PIPING ABOVE GRADE SHALL BE INSULATED WITH FIRE-RETARDANT, FACTORY-APPLIED JACKET. PROVIDE COLD WATER PIPING WITH FACTORY-APPLIED VAPOR BARRIER. INSULATION REQUIREMENT SHOULD COMPLY WITH 2018 INTERNATIONAL ENERGY CONSERVATION CODE SECTION C403.11.3 REFER BELOW TABLE.

MINIMUM PIPE INSULATION THICKNESS

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

7. WATER DISTRIBUTION SYSTEM AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE C404.7, HAVING ONE OR MORE RECIRCULATION PUMPS THAT PUMP WATER FROM A HEATED-WATER SUPPLY PIPE BACK TO THE HEATED-WATER SOURCE THROUGH A COLD-WATER SUPPLY PIPE SHALL BE A DEMAND RECIRCULATION WATER SYSTEM. PUMPS SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:
   a. THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE OR APPLIANCE, SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE FITTING OR APPLIANCE.
   b. THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F (40°C).
8. AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE C404.6.1 HEATED-WATER CIRCULATION SYSTEMS SHALL BE PROVIDED WITH A CIRCULATION PUMP. THE SYSTEM RETURN PIPE SHALL BE A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE. CONTROLS FOR CIRCULATING HOT WATER SYSTEM PUMPS SHALL START THE PUMP BASED ON THE IDENTIFICATION OF A DEMAND FOR HOT WATER WITHIN THE OCCUPANCY. THE CONTROLS SHALL AUTOMATICALLY TURN OFF THE PUMP WHEN THE WATER IN THE CIRCULATION LOOP IS AT THE DESIRED TEMPERATURE AND WHEN THERE IS NO DEMAND FOR HOT WATER.
9. HW SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD AS PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE C404.5.1. THE HW PIPE LENGTH FROM THE NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE FIXTURE SUPPLY PIPE SHALL BE AS PER FOLLOWING TABLE.
10. SEAL ALL JOINTS BETWEEN SEGMENTS OF INSULATION.
11. PROVIDE SHIELDS BETWEEN HANGERS AND INSULATION.

C. HANGERS AND SUPPORTS:

1. HANGERS SHALL BE STANDARD STEEL, MALLEABLE OR WROUGHT IRON, AS MANUFACTURED BY GRINNELL OR APPROVED EQUAL, SUITABLE FOR THE TYPE OF CONSTRUCTION. PIPING SHALL NOT BE HUNG FROM OTHER PIPE.
2. SECTIONS OF INDIVIDUAL PIPE RUNS SHALL BE SUPPORTED BY CLEVIS HANGERS.
3. ALL EQUIPMENT SHALL BE PROVIDED WITH APPROVED SUPPORTS.
4. PROVIDE SEISMIC RESTRAINTS IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND STANDARDS AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
5. SUPPORTS SHALL BE PROVIDED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPING MANUFACTURER.

D. VALVES:

1. PROVIDE GATE VALVES, BUTTERFLY OR BALL VALVES FOR SHUT-OFF DUTY ON MAIN AND BRANCH SUPPLY LINES. FOR ALL PIPE RUNS 2" AND SMALLER, PROVIDE BALL FOR ALL PIPE RUNS LARGER THAN 2" AND SMALLER THAN 4", PROVIDE GATE VALVES. PIPING 4" AND LARGER, PROVIDE BUTTERFLY VALVES FOR SHUT-OFF DUTY.
2. ALL FIXTURES WITH THE EXCEPTION O FLUSHOMETER-EQUIPPED WATER CLOSETS AND URINALS SHALL HAVE STOP VALVES TO CONTROL SUPPLY TO THE FIXTURE. WHERE SUPPLIES ARE EXPOSED PROVIDE CHROME-PLATED STOPS WITH CHROME-PLATED ESCUTCHEONS ON PIPING PENETRATIONS.
3. ALL PLUMBING FIXTURES AND EQUIPMENT TO HAVE SHUT-OFF VALVES ON SUPPLY LINES.
4. ALL BRANCH LINES TO HAVE SHUT-OFF VALVES.
5. ALL VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED FOR VALVE ACCESS.
6. PROVIDE GLOBE VALVES FOR THROTTLING/BALANCING OF THE HOT WATER CIRCULATING SYSTEM.

E. GAS PIPING:

1. GAS PIPING SHALL BE SIZED IN ACCORDANCE WITH PIPE SIZING TABLES OR SIZING EQUATIONS IN ACCORDANCE WITH 2015 NATIONAL FUEL GAS CODE SECTION 6.2
2. INDIVIDUAL OUTLETS TO GAS RANGES SHALL NOT BE LESS THAN ¾ INCHES NPS.
3. METALLIC PIPE SHALL COMPLY WITH 2015 NATIONAL FUEL GAS CODE SECTIONS 5.6.7 THROUGH 5.6.8
4. PIPING SYSTEM INSTALLATION SHALL COMPLY WITH REQUIREMENTS OF 2015 NATIONAL FUEL GAS CODE SECTION 7.
5. AS PER 2015 NATIONAL FUEL GAS CODE SECTION 7.1; UNDERGROUND PIPING, WHERE INSTALLED BELOW GRADE THROUGH THE OUTER FOUNDATION OR BASEMENT WALL OF A BUILDING, SHALL BE ENCASED IN A PROTECTIVE PIPE SLEEVE. THE ANNULAR SPACE BETWEEN THE GAS PIPING AND THE SLEEVE SHALL BE SEALED.
6. AS PER 2015 NATIONAL FUEL GAS CODE SECTION 7.1.2.1; UNDERGROUND PIPING SYSTEMS SHALL BE INSTALLED A MINIMUM DEPTH OF 12 INCHES BELOW GRADE.
7. THE GAS PIPING IS ENCASED IN A CONDUIT OF WROUGHT IRON OR STEEL PIPE TO WITH STAND THE SUPERIMPOSED LOADS.
8. SHUTOFF VALVES SHALL BE LOCATED IN PLACES SO AS TO PROVIDE ACCESS FOR OPERATION AND SHALL BE INSTALLED SO AS TO BE PROTECTED FROM DAMAGE.

F. INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.

G. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE. JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'-0" IN LENGTH.

H. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.

I. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE-PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.

J. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.

K. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN.

L. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

M. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.

N. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

O. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.

P. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

Q. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.

R. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.

S. INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.

2. INSTALLATION

2.01 GENERAL

T. ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.

U. EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.

V. EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.

W. COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.

X. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS END PIPE.

Y. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

Z. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.

AA. COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED. PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.

AB. NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED SPACES.

AC. PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZE CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.

AD. THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.

AE. WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE CONNECTIONS BY PROVIDING CAPPED AND VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

2.02 ABOVE GRADE

A. INSTALL PLUMBING PIPING IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.

B. ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN. IN DOMESTIC WATER SYSTEMS, PROVIDE DRAIN VALVES AT MAIN SHUT–OFF VALVES AND ALL LOW POINTS IN PIPING.

C. USE EXISTING CONNECTIONS AT MAINS WHERE AVAILABLE FOR NEW BRANCH PIPING. LOCATE ALL RISERS AND PIPING BEFORE CONSTRUCTION COMMENCES AND TAKE CARE NOT TO DAMAGE SAME. ANY DAMAGE OCCURRING TO THE EXISTING PIPING WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

3. TESTING

A. AT THE COMPLETION OF THE PLUMBING WORK, COMPLETELY TEST THE ENTIRE INSTALLATION OF ALL SYSTEMS FOR PROPER OPERATION AND COMPLIANCE WITH APPLICABLE CODES AND LOCAL REQUIREMENTS. CORRECT ALL DEFICIENCIES FOUND.

B. TESTING OF THE INSTALLED SYSTEMS SHALL BE MADE BY THE CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER.

C. THE CONTRACTOR SHALL NOT COVER UP OR PERMANENTLY CONCEAL PIPING, DEVICES OR ANY PORTION OF NEWLY CONSTRUCTED PLUMBING SYSTEM(S) UNTIL SUCH SYSTEM, OR PORTION OF THE SYSTEM, HAS BEEN TESTED IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER AND INSPECTED BY THE LOCAL INSPECTOR AND APPROVED IN WRITING, EXCEPT PIPING PASSING THROUGH FLOORS, WALLS, PARTITIONS, OR BEAMS, FOR DISTANCES EQUAL TO THE THICKNESS OF SUCH FLOOR, WALL, PARTITION OR BEAM.

D. THIS CONTRACTOR SHALL NOTIFY THE VARIOUS DEPARTMENTS, BUREAUS AND INDIVIDUALS AT LEAST TWO WEEKS IN ADVANCE OF THE TIME THAT THE TESTS ARE TO BE CONDUCTED.

E. ALL DEFECTIVE PARTS SHALL BE REPLACED OR CORRECTED BY THIS CONTRACTOR AND AN EXTRA TEST OR TESTS SHALL BE MADE UNTIL THE OPERATION IS SATISFACTORY. ALL ARRANGEMENTS AND EXPENSES NECESSARY TO CONDUCT ALL TESTS REQUIRED BY THESE SPECIFICATIONS AND THE VARIOUS AGENCIES HAVING JURISDICTION OVER THE WORK INSTALLED UNDER THIS CONTRACT SHALL BE MADE BY THIS CONTRACTOR. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THESE TESTS, THE COST THEREOF BEING INCLUDED IN THE LUMP SUM BID FOR THIS CONTRACT.

F. WHERE ANY EVIDENCE OF STOPPAGE IS FOUND IN PIPING OR EQUIPMENT, THIS CONTRACTOR SHALL DISCONNECT, CLEAN, REPAIR AND RECONNECT ALL OBSTRUCTED PIPING OR EQUIPMENT AND SHALL ALSO PAY FOR ALL NECESSARY CUTTING AND REPAIRS TO ADJOINING WORK.

G. ALL PIPING AND EQUIPMENT SHALL BE THOROUGHLY CLEANED INSIDE AND OUT, OF DIRT, CUTTINGS, OILS AND OTHER FOREIGN SUBSTANCES AND SHALL BE LEFT CLEAN.

H. ALL REQUIRED TESTS SHALL BE WITNESSED BY LOCAL AUTHORITIES AND THE OWNER'S REPRESENTATIVE.

J. ALL EQUIPMENT WILL BE FACTORY TESTED.

I. CONTRACTOR SHALL IDENTIFY TO THE OWNER'S REPRESENTATIVE ANY LEAKS OR DAMAGE THAT OCCURS AS A RESULT OF SYSTEM TESTING. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LIMIT ANY POTENTIAL DAMAGE. CORRECTIVE ACTION REQUIRED AS A RESULT OF TESTING SHALL BE PERFORMED IMMEDIATELY AND AT THE CONTRACTOR'S EXPENSE.

K. REPORT IN WRITING TO AUTHORITIES HAVING JURISDICTION, THE ARCHITECT AND THE OWNER THE RESULTS OF ALL TESTING.

L. TESTING REQUIREMENTS
   a. UPON COMPLETION OF A SECTION, OR THE ENTIRE WATER SUPPLY SYSTEM, THE SYSTEM SHALL BE TESTED AND PROVED TIGHT UNDER A WATER PRESSURE AT LEAST ONE AND ONE HALF TIMES THE SYSTEM PRESSURE BUT AT LEAST 100 PSI.
   b. TESTS SHALL BE WITNESSED BY THE BUILDING ENGINEER.
   c. THE PLUMBING CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE DUE TO TEST FAILURES AND LEAKAGE IN THE TEST AREA AND ADJACENT TENANT OR ESB SPACES.

M. REFILL ENTIRE POTABLE HOT AND COLD WATER SUPPLY SYSTEM WITH CHLORINE SOLUTION (HTH OLIN CHEMICAL CORP.) AT A STRENGTH TO MEET STANDARDS OF THE DEPARTMENT OF HEALTH, AND FOR A PERIOD OF RETENTION AS STIPULATED.

N. THOROUGHLY FLUSH PIPING SYSTEM WITH FRESH WATER IMMEDIATELY PRIOR TO FINAL ACCEPTANCE.

4. WARRANTY

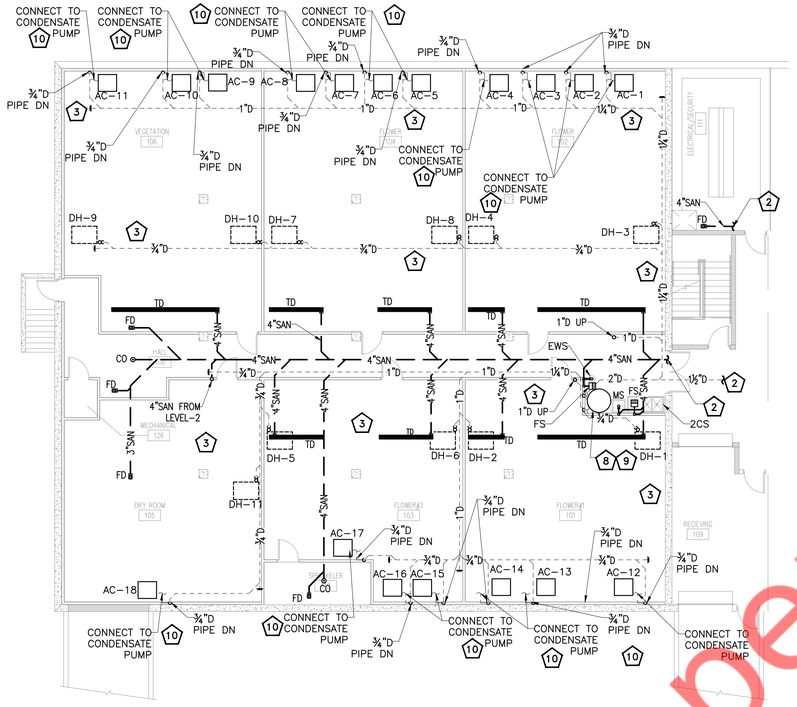
A. EQUIPMENT, MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROMPTLY CORRECT AND REPAIR ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT. ALL SETTLEMENTS OF SURFACES THAT MAY OCCUR WITHIN THAT PERIOD SHALL ALSO BE PROMPTLY REPAIRED.

PLUMBING AND FIRE LEGEND:

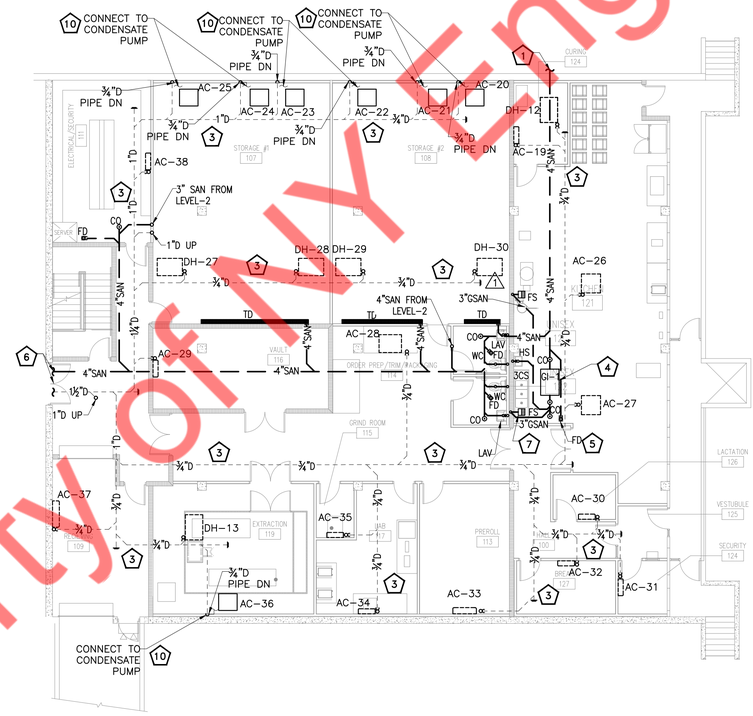
1. CONNECT 4" SANITARY LINE TO EAST WING'S 4" SANITARY LINE. CONTRACTOR TO FIELD VERIFY THE EXACT SIZE, LOCATION AND INVERT OF EXISTING SANITARY LINE.
2. FOR CONTINUATION REFER TO EAST WING PLUMBING SANITARY PLANS.
3. ROUTE CONDENSATE DRAIN FROM AC AND DH UNITS. SLOPE TO DRAIN AT MINIMUM 1% SLOPE AND TERMINATE AT CONDENSATE DRAIN COLLECTION TANK.
4. NEW GREASE TRAP SCHIER GB-75 OR EQUIVALENT. CONTRACTOR TO FIELD VERIFY LOCATION ON SITE AT THE TIME OF INSTALLATION.
5. ROUTE WATER HEATER T&P RELIEF TO FLOOR DRAIN WITH APPROVED AIR GAP.
6. FOR CONTINUATION REFER TO WEST WING PLUMBING SANITARY PLANS.
7. ROUTE INDIRECT WASTE FROM 3 COMP SINK TO ADJACENT FLOOR SINK WITH APPROVED AIR GAP.
8. CONTRACTOR TO COORDINATE EXACT LOCATION AND SIZE OF CONDENSATE DRAIN COLLECTION TANK WITH ARCHITECT.
9. ROUTE INDIRECT WASTE FROM CONDENSATE DRAIN COLLECTION TANK TO ADJACENT FLOOR SINK WITH APPROVED AIR GAP.
10. CONTRACTOR TO INSTALL CONDENSATE PUMP AS PER MANUFACTURER'S GUIDELINES AND AS PER THE LOCAL JURISDICTION. THE NUMBER OF CONDENSATE PUMPS IS BASED ON NUMBERS OF DRAIN PAN. COORDINATE WITH MECHANICAL CONTRACTOR AND BASE BID ACCORDINGLY. FOR MORE DETAILS REFER #3 -P1.0.

GENERAL NOTES:

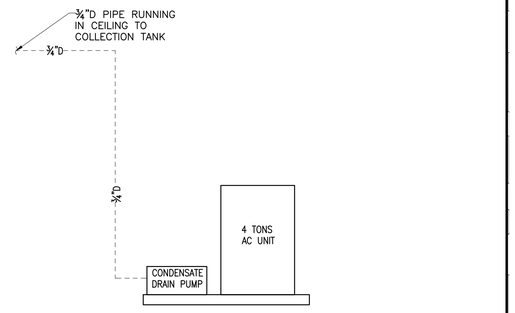
1. PROVIDE ACCESS PANELS FOR CLEANOUTS AS REQUIRED.
2. PROVIDE AIR GAP BETWEEN AN INDIRECT WASTE AND THE DRAINAGE SYSTEM AS PER ILLINOIS PLUMBING CODE SECTION 890.1040.
3. CONTRACTOR TO COORDINATE ALL PIPING RUNNING ABOVE CEILING WITH STRUCTURAL AND OTHER TRADES AND REROUTE PIPING IF REQUIRED.



2 LEVEL-1 PLUMBING SANITARY FLOOR PLAN- WEST WING
1" = 3/16"



1 LEVEL-1 PLUMBING SANITARY FLOOR PLAN- EAST WING
1" = 3/32"



3 4 TONS AC UNIT CONDENSATE DRAIN DETAILS (TYP.)
SCALE-N.T.S.

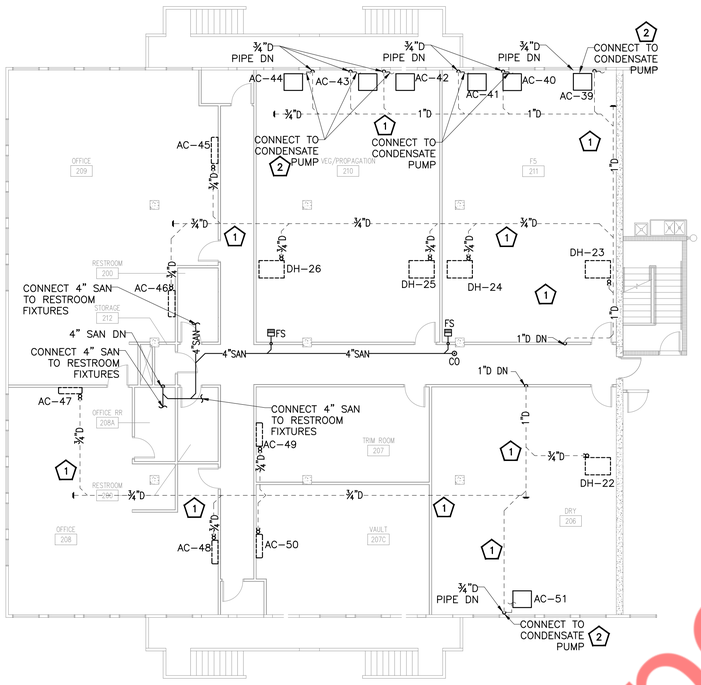
GENERAL NOTES:

1. PROVIDE AIR GAP BETWEEN AN INDIRECT WASTE AND THE DRAINAGE SYSTEM AS PER ILLINOIS PLUMBING CODE SECTION 890.1040.
2. CONTRACTOR TO COORDINATE ALL PIPING RUNNING ABOVE CEILING WITH STRUCTURAL AND OTHER TRADES AND REROUTE PIPING IF REQUIRED.

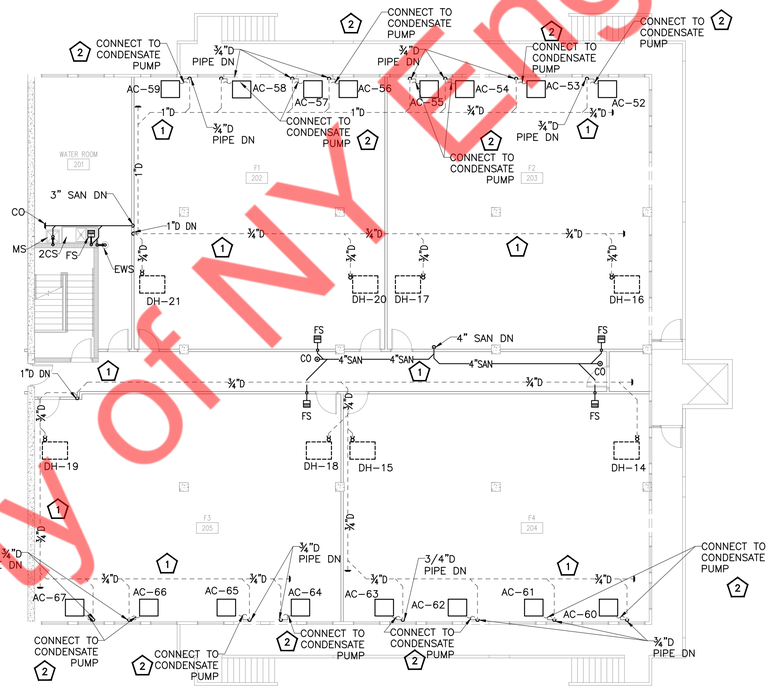
PLUMBING AND FIRE LEGEND:

(1) ROUTE CONDENSATE DRAIN FROM AC AND DH UNITS. SLOPE TO DRAIN AT MINIMUM 1% SLOPE AND TERMINATE AT CONDENSATE DRAIN COLLECTION TANK.

(2) CONTRACTOR INSTALL CONDENSATE PUMP AS PER MANUFACTURER'S GUIDELINES AND AS PER THE LOCAL JURISDICTION. THE NUMBER OF CONDENSATE PUMPS IS BASED ON NUMBERS OF DRAIN PAN. COORDINATE WITH MECHANICAL CONTRACTOR AND BASE BID ACCORDINGLY. FOR MORE DETAILS REFER #3 –P1.0.



2 LEVEL-2 PLUMBING SANITARY FLOOR PLAN- WEST WING
1" = 3/32"



1 LEVEL-2 PLUMBING SANITARY FLOOR PLAN- EAST WING
1" = 3/32"

PLUMBING WATER AND GAS NOTES:

1. CONNECT NEW 1½" CW PIPING TO EXISTING WATER METER AND BACKFLOW PREVENTER WITH SHUT-OFF VALVE. CONTRACTOR TO FIELD VERIFY THE LOCATION AND SIZE OF EXISTING WATER METER AND BACKFLOW PREVENTER, UPGRADE IF REQUIRED. BASE BID ACCORDINGLY.
2. PROVIDE THERMOSTATIC MIXING VALVE FOR HAND SINK AND LAVATORIES. SET AT 110°F MAX.
3. PROVIDE ASSE APPROVED SECONDARY BACK FLOW PREVENTER TO RO SYSTEM AND STORAGE TANK TO AVOID CONTAMINATION OF WATER SUPPLY AS PER LOCAL CODE.
4. EXISTING DCDA, EXACT LOCATION AND SIZE VERIFY IN FIELD.
5. FOR CONTINUATION REFER EAST WING PLUMBING PLAN.
6. CONNECT NEW 2½" GAS PIPING TO EXISTING GAS METER. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION, SIZE AND PRESSURE OF EXISTING GAS METER UPGRADE IF REQUIRED.
7. FOR CONTINUATION REFER WEST WING PLUMBING PLAN.
8. PROVIDE 1"CW LINE TO RO SYSTEM. CONTRACTOR TO COORDINATE EXACT SIZE AND OTHER REQUIREMENT WITH EQUIPMENT SUPPLIER.
9. PROVIDE 1"CW LINE TO STORAGE TANK. CONTRACTOR TO COORDINATE EXACT SIZE AND OTHER REQUIREMENT WITH EQUIPMENT SUPPLIER.

GENERAL NOTES:

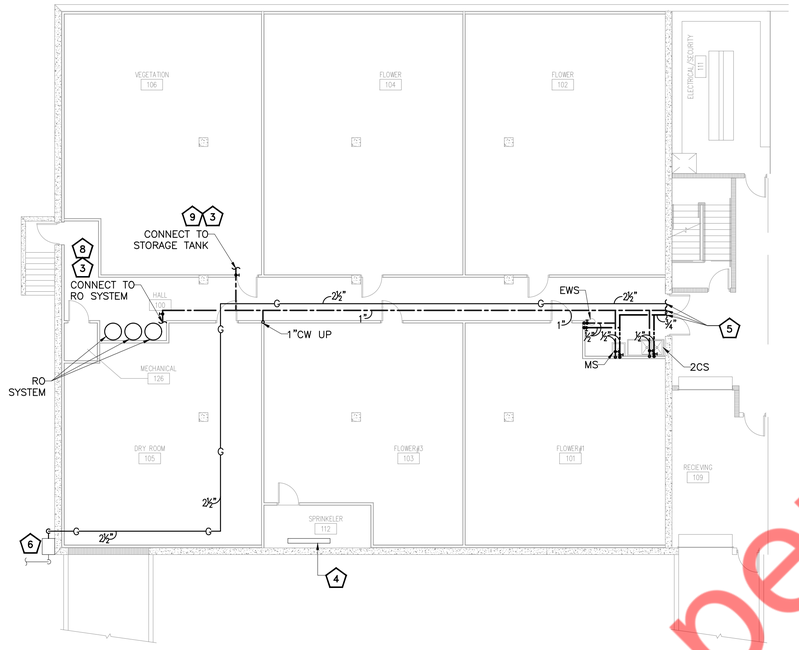
1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER INTERNATIONAL ENERGY CONSERVATION CODE 2018 (REFER SHEET P001)
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 85 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, & SHUT-OFF VALVES AS REQUIRED.
4. ADD TRAP PRIMER/ SEAL ON EMERGENCY FLOOR DRAIN AS PER LOCAL JURISDICTION.
5. WHEN REMODELING EXISTING SPACES AND/OR THERE ARE CHANGES IN THE OCCUPANCY USE, THE WATER SERVICE SIZE, WATER METER SIZE, FIXTURE TYPE, FIXTURE QUANTITIES, MATERIALS ALLOWED, AND LOCATIONS ALLOWED ARE TO BE PROVIDED AND INSTALLED PER THE MINIMUM REQUIREMENTS SET FORTH IN THE 2014 EDITION OF THE STATE OF ILLINOIS PLUMBING CODE WITH CITY OF ELGIN AMENDMENTS.

⚠1

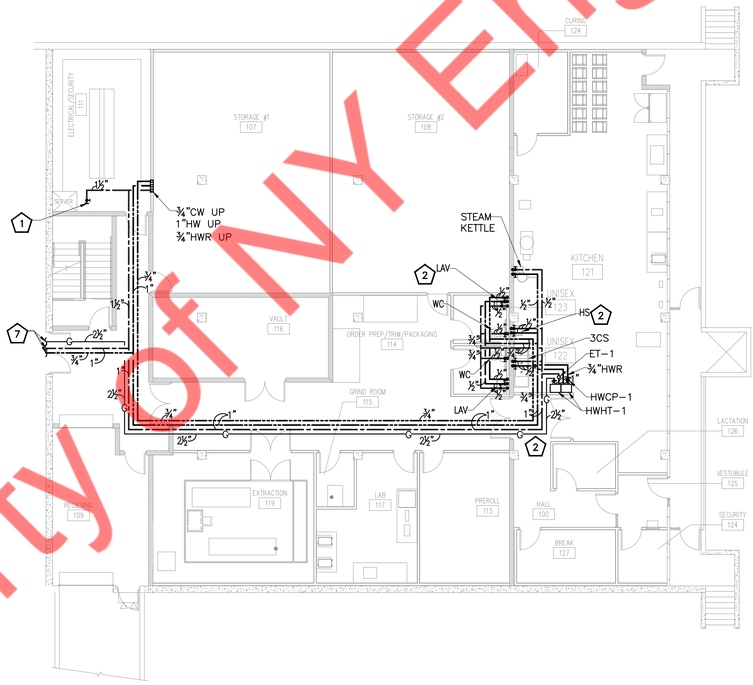
WATER SUPPLY SIZING

FIXTURE TYPE	QUANTITY	W.S.F.U	TOTAL W.S.F.U
WATER CLOSET (FLUSH TANK)	2	3	6
LAVATORY	2	2	4
KITCHEN SINK (3CS)	1	4	4
KITCHEN SINK (2CS)	2	4	8
HAND SINK	2	2	4
SERVICE SINK	2	3	6
DRINKING FOUNTAIN	2	0.25	0.5
EYE WASH STATION	1	2	2
MISCELLANEOUS	2	10	20
TOTAL FIXTURE UNITS:			54.5

W.S.F.U	54.5 WSFU = 31 GPM (BASED ON ILLINOIS PLUMBING CODE, TABLE M AND N.) REQUIRED MINIMUM 1-1/2" PIPE SIZE WITH 1-1/2" WATER METER.



2 LEVEL-1 PLUMBING WATER AND GAS FLOOR PLAN- WEST WING
1" = 3/16"



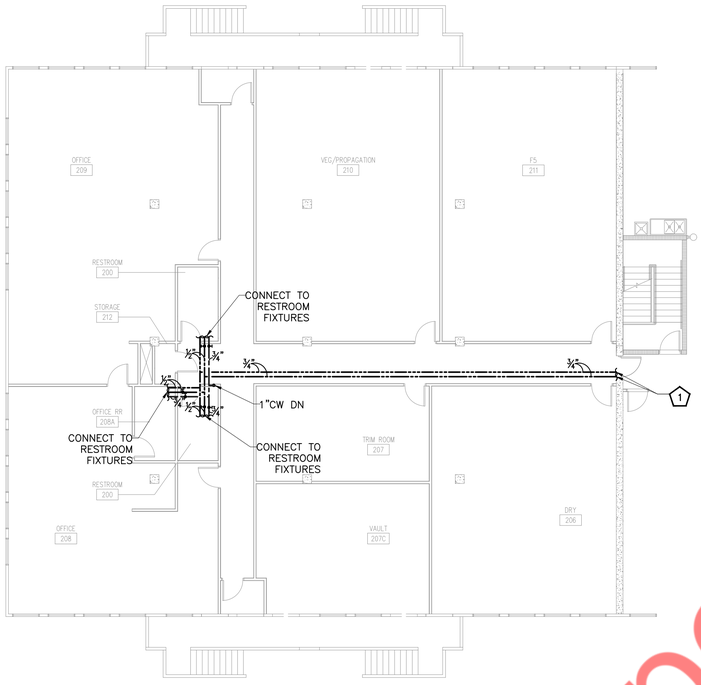
1 LEVEL-1 PLUMBING WATER AND GAS FLOOR PLAN- EAST WING
1" = 3/32"

PLUMBING WATER NOTES:

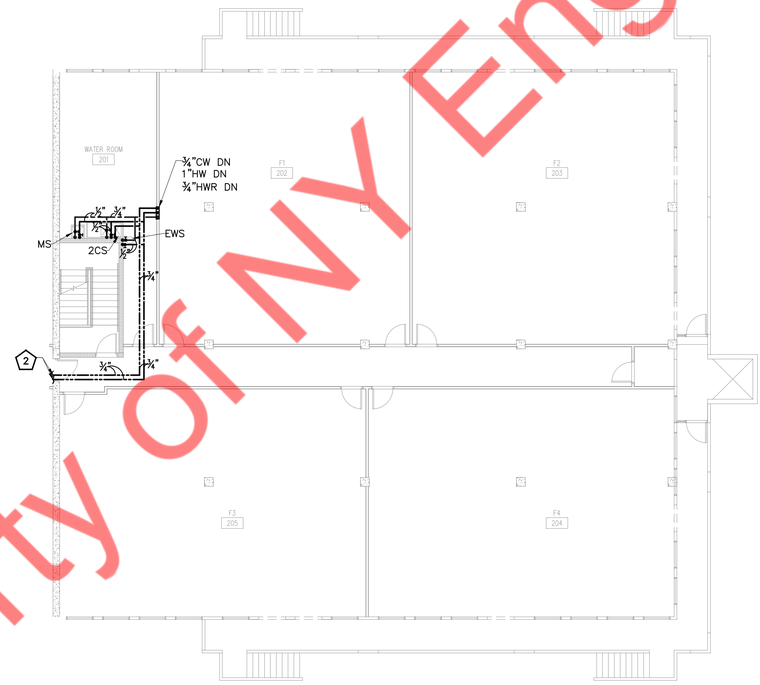
1. FOR CONTINUATION REFER EAST WING PLUMBING PLAN.
2. FOR CONTINUATION REFER WEST WING PLUMBING PLAN.

GENERAL NOTES:

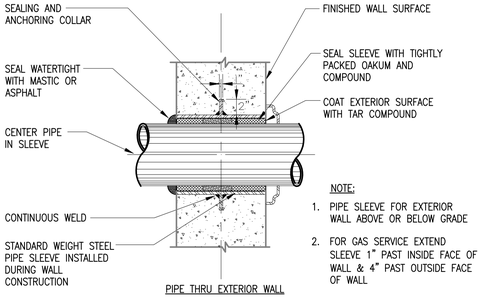
1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER INTERNATIONAL ENERGY CONSERVATION CODE 2018 (REFER SHEET P001)
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 85 PSI.
3. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, & SHUT-OFF VALVES AS REQUIRED.
4. ADD TRAP PRIMER/ SEAL ON EMERGENCY FLOOR DRAIN AS PER LOCAL JURISDICTION.
5. WHEN REMODELING EXISTING SPACES AND/OR THERE ARE CHANGES IN THE OCCUPANCY USE, THE WATER SERVICE SIZE, WATER METER SIZE, FIXTURE TYPE, FIXTURE QUANTITIES, MATERIALS ALLOWED, AND LOCATIONS ALLOWED ARE TO BE PROVIDED AND INSTALLED PER THE MINIMUM REQUIREMENTS SET FORTH IN THE 2014 EDITION OF THE STATE OF ILLINOIS PLUMBING CODE WITH CITY OF ELGIN AMENDMENTS.



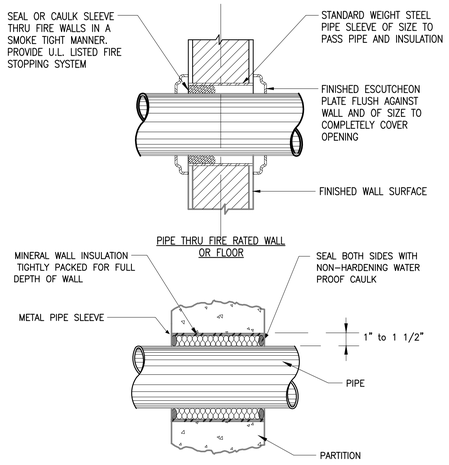
2 LEVEL-2 PLUMBING WATER AND GAS FLOOR PLAN- WEST WING
1" = 3/32"



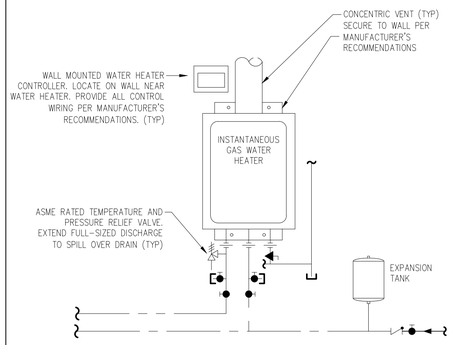
1 LEVEL-2 PLUMBING WATER AND GAS FLOOR PLAN- EAST WING
1" = 3/32"

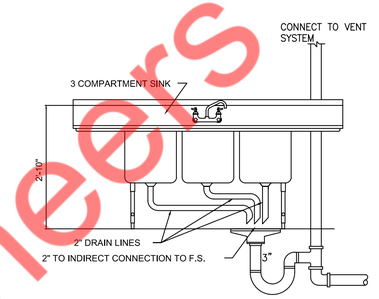


PIPE THRU EXTERIOR WALL



PIPE PENETRATION THRU NON FIRE RATED WALL

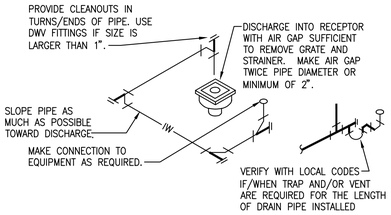




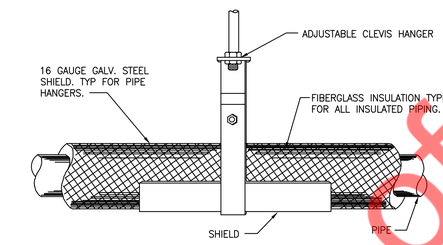
1 / P3.0 PIPE SLEEVE THRU WALL SECTION N.T.S

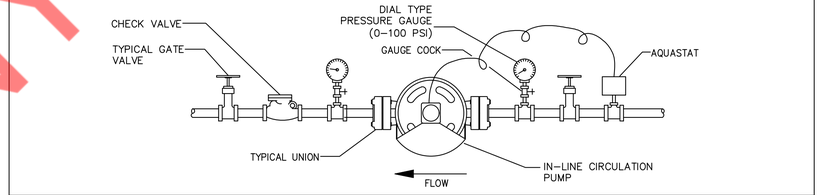
2 / P3.0 WATER HEATER INSTALLATION DETAILS N.T.S

3 / P3.0 3 COMPARTMENT SINK DETAILS N.T.S



4 / P3.0 INDIRECT WASTE CONNECTION DETAIL N.T.S

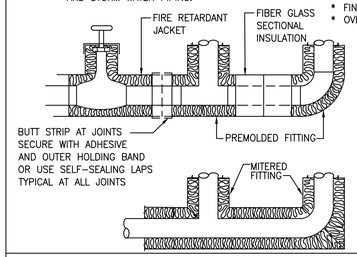




7 / P3.0 INLINE RECIRCULATING PUMP DETAIL N.T.S

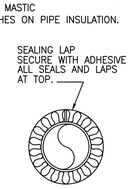
CONCEALED VALVES AND FITTINGS

- WRAP WITH 1-INCH THICK, 1-POUND DENSITY TO REQUIRED PIPE INSULATION THICKNESS
- SECURE WITH WIRE OR TAPE.
- VAPOR SEAL COLD WATER, CHILLED WATER AND STORM WATER PIPING.

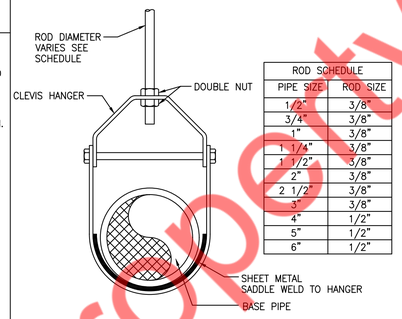


CONCEALED VALVES AND FITTINGS

- PREMOLDED FIBER GLASS OR RADIAL MITERED PIPE INSULATION
- SKIM COAT OF INSULATION CEMENT
- COAT OF MASTIC
- WRAP WITH FIBER GLASS REINFORCING CLOTH.
- FINISH COAT OF MASTIC
- OVERLAP 2-INCHES ON PIPE INSULATION.

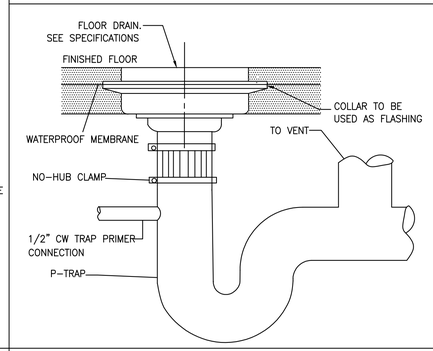


5 / P3.0 INSULATION OF PIPING, VALVES AND FITTINGS FOR EXPOSED AND CONCEALED LOCATIONS N.T.S

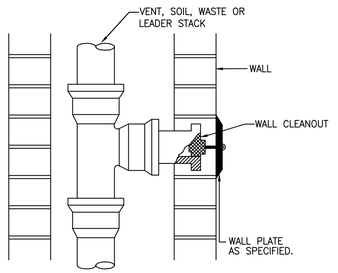


ROD SCHEDULE	
PIPE SIZE	ROD SIZE
1/2"	3/8"
3/4"	3/8"
1"	3/8"
1 1/4"	3/8"
1 1/2"	3/8"
2"	3/8"
2 1/2"	3/8"
3"	3/8"
4"	1/2"
5"	1/2"
6"	1/2"

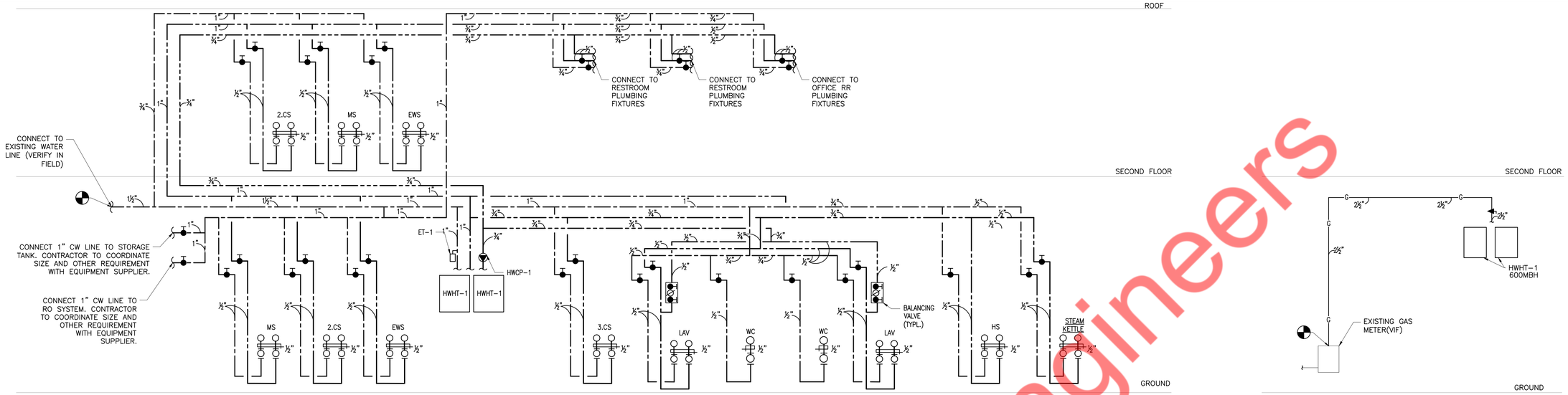
6 / P3.0 HANGER DETAIL N.T.S



8 / P3.0 FLOOR DRAIN DETAIL N.T.S



9 / P3.0 WALL CLEANOUT DETAIL N.T.S

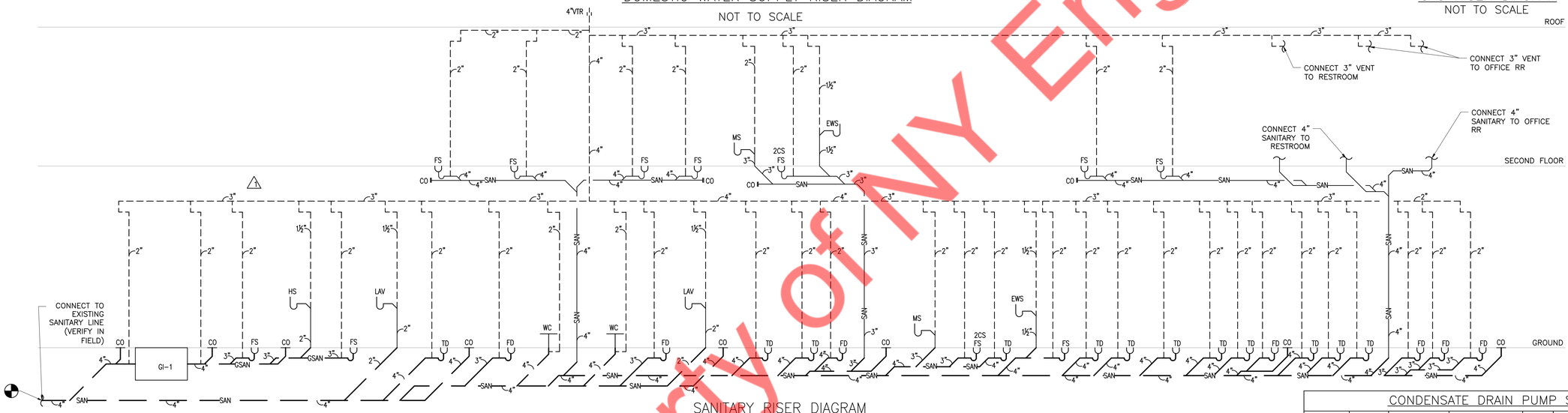


DOMESTIC WATER SUPPLY RISER DIAGRAM

NOT TO SCALE

GAS RISER DIAGRAM

NOT TO SCALE



SANITARY RISER DIAGRAM

NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

LEGEND	PLUMBING FIXTURE	CONNECTION SIZE – INCHES							REMARKS
		TRAP	SOIL/WASTE		VENT	COLD WATER	HOT WATER	THERMOSTATIC MIXING VALVE	
			DIRECT	INDIRECT					
WC	WATER CLOSET	–	4"	–	2"	¾"	–	–	FLUSH TANK AMERICAN STANDARD CADET PRO RIGHTHEIGHT ELONGATED 1.28 GPF #215AA.104 (LEFT TRIP) #215AA.105 (RIGHT TRIP) OR SIMILAR.
LAV	LAVATORY	1½"	1½"	–	1½"	½"	½"	PROVIDE	P–TRAP WALL MOUNTED LAVATORY: LUCERNE" BY AMERICAN STANDARD #0355.012 OR SIMILAR.
3CS	3 COMPARTMENT SINK	–	–	2"	–	¾"	¾"	–	I.W. FROM 3CS SPILLS INTO 3" FS. REGENCY SPEC LINE 88" 14 GAUGE STAINLESS STEEL, SINK W/2 DRAINBOARDS –16"x20"x14" OR SIMILAR
HS	HAND SINK	1½"	1½"	–	1½"	½"	½"	PROVIDE	P–TRAP REGENCY MOD. 600HS12SP OR SIMILAR.
2CS	2 COMPARTMENT SINK	–	–	2"	–	¾"	¾"	–	I.W. FROM 2CS SPILLS INTO 3" FS.
FS	FLOOR SINK	3",4"	3",4"	–	2"	–	–	–	P–TRAP
FD	FLOOR DRAIN	3",4"	3",4"	–	2"	–	–	–	P–TRAP
TD	TRENCH DRAIN	4"	4"	–	2"	–	–	–	P–TRAP FAST TRACK 865 SERIES OR SIMILAR. SIOUX CHIEF 865 SERIES GLASS –FIBER REINFORCED POLYPROPYLENE SLOTTED GRATING OR SIMILAR.
MS	MOP SINK	3"	3"	–	2"	¾"	¾"	–	P–TRAP
EWS	EYE WASH STATION	1½"	1½"	–	–	½"	½"	PROVIDE	WALL MOUNTED EYE WASH STATION. MANUFACTURER– GUARDIAN, MODEL –G1890

NOTE: CONTRACTOR TO COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURES SPECIFICATIONS AND MOUNTING HEIGHT INSTALLATION.

GREASE INTERCEPTOR CALCULATION AS PER ILLINOIS PLUMBING CODE

FIXTURE	QUANTITY	DIMENSIONS			CAPACITY (GALLON)
		LENGTH(IN)	WIDTH(IN)	DEPTH(IN)	
3 COMP SINK	1	16	20	14	58.18
HAND SINK	1	12	16	6	4.99
FLOOR SINK	1	–	–	–	3.0
				TOTAL	66.17
PROPOSED GREASE INTERCEPTOR SCHIER GB–75 OR EQUIVALENT					

GREASE INTERCEPTOR SCHEDULE

ITEM	SERVICE	FLOW CAPACITY (GPM)	GREASE CAPACITY (LBS)	LIQUID CAPACITY (GALLON)	MANUFACTURER AND MODEL
GREASE INTERCEPTOR GI–1	KITCHEN WASTE	75	861	125	SCHIER MODEL GB–75

NOTE– CONTRACTOR TO PROVIDE ALL REQUIRED ACCESSORIES FOR SATISFACTORY WORKING OF GREASE TRAP AS PER SITE CONDITIONS.

EXPANSION TANK SCHEDULE

ITEM	QUANTITY	SERVICE	GALLONS	MAKE	REMARKS
EXPANSION TANK (ET–1)	01	HOT WATER	2	AMTROL ST–5	DIMENSIONS– 13"(H)x8"(DIA.) SHIPPING WEIGHT– 5 LBS

PUMP SCHEDULE

TAG	QUANTITY	SERVICE	LOCATION	PERFORMANCE DATA/ PUMP			PUMP CONSTRUCTION DATA		MOTOR DATA /PUMP				WEIGHT (LBS)	MFGR MODEL	REMARKS
				GPM	TDH (FT)	WATER TEMP. (°F)	PUMP TYPE	IMPELLER MATERIAL	MHP	STARTER TYPE	V/PH/HZ	RPM			
HWCP–1	01	HWR CIRC. SYSTEM	REFER FLOOR PLANS	2	10	140	INLINE	COMPOSITE PES	85 WATTS	–	115/1/60	–	5.3	GRUNDFOS UPS 15–18 B5	INLINE ON HW RETURN LINE AT INDIRECT HOT WATER STORAGE TANK WITH INSULATION CLASS F UL,CSA LISTED.

CONDENSATE DRAIN PUMP SCHEDULE

SERVICE	LOCATION	GALLONS PER HOUR @ 115V, 60Hz			MOTOR DATA /PUMP			WEIGHT (LBS)	SHUT OFF (FT.)	MFGR MODEL	REMARKS
		1"	5"	10"	VOLTS	AMPS	WATTS				
CONDENSATE DRAIN LINE	AC UNITS	84	75	60	115	1.5	93	5.5	21'	LITTLE GIANT – VCMA–20UL–PRO OR EQUIVALENT	LENGTH–10.2", HEIGHT–6.5", WIDTH–4.8",

TANKLESS GAS FIRED WATER HEATER

TAG No.	QUANTITY	TYPE	GAS CONSUMPTION (BTU/HR)	RECOVERY CAP. (GPM @ RISE)	ENERGY FACTOR	MANUFACTURER & MODEL NO.	REMARKS
HWHT–1	2	NATURAL GAS	300,000	6.5 GPM @ 90°F	0.95	NORITZ NCC300DV	–DIMENSIONS 18.9W X 32.7"H X 14.2"D

GAS LOAD SUMMARY

EQUIPMENT TAG	QTY.	CFH LOAD	TOTAL CFH LOAD
HWHT–1	2	300	600
		TOTAL CFH LOAD	600

LOW PRESSURE SYSTEM
INLET PRESSURE < 2.0 PSI
PRESSURE DROP– 0.5 IN WC.
MAXIMUM EQUIVALENT LENGTH OF PIPE=350 FT
GAS PIPE SIZING AS PER 2015 NATIONAL FUEL GAS CODE, TABLE 6.2(b)

SIZE	GAS LOAD(CFH)
3/4"	53
1"	99
1–1/4"	203
1–1/2"	305
2"	587
2–1/2"	935
3"	1650

GAS NOTE:
1. PROVIDE SHUT–OFF VALVE AN ACCESSIBLE LOCATION. PROVIDE GAS PRESSURE REGULATOR FOR WATER HEATER IF REQUIRED.
2. CONTRACTOR SHALL VERIFY ACTUAL GAS PRESSURE AND LONGEST LENGTH OF RUN TO FARTHEST APPLIANCE PRIOR TO INSTALLATION AND NOTIFY ENGINEER IF CONDITION DIFFER THAN SHOWN ON THIS PLAN.