DIVISION 23 SPECIFICATIONS

GENERAL

1. IT IS THE RESPONSIBILITY OF CONTRACTOR TO READ ALL SPECIFICATIONS AND CONSULT ALL DRAWINGS WHICH MAY AFFECT THE INSTALLATION AND COORDINATION OF WORK WITH OTHER TRADES. CONTRACTOR SHALL COORDINATE AND MAKE MINOR ADJUSTMENTS IN LOCATION OF EQUIPMENT
AND MATERIALS AS NECESSARY FOR COORDINATION.

2. PRIOR TO SUBMITTING BID, VISIT THE SITE OF THE PROPOSED WORK AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

3. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL, AT A MINIMUM, BE IN CONFORMANCE WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES HAVING JURISDICTION. EQUIPMENT FURNISHED AND ASSOCIATED INSTALLATION WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN STRICT COMPLIANCE WITH CURRENT APPLICABLE CODES ADOPTED BY THE LOCAL AHJ INCLUDING ANY AMENDMENTS AND STANDARDS AS SET FORTH BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), UNDERWRITERS LABORATORIES (UL), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AMERICAN SOCIETY OF MECHANICAL ENGINEEERS (ASME), AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS (ASHRAE), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) AND OTHER NATIONAL STANDARDS AND CODES WHERE APPLICABLE. WHERE THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THEIR REFERENCED CODES, STANDARDS, ETC., THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE.

4. ALL WORK SHALL BE PERFORMED BY OR UNDER DIRECT SUPERVISION OF AN INDIVIDUAL HOLDING THE REQUIRED LICENSE FOR THE TRADE OF THE WORK BEING PERFORMED, AS REQUIRED BY LOCAL CODE.

5. SYSTEM LAYOUT IS SCHEMATIC AND EXACT LOCATIONS SHALL BE DETERMINED BY STRUCTURAL CONDITIONS, COORDINATION WITH OTHER TRADES, COORDINATION WITH FINISHES AND OTHER CONDITIONS. STRUCTURAL SUPPORTS SHALL NOT BE CUT OR ALTERED TO ASSURE FIT OF HVAC SYSTEM. TEN FOOT CLEARANCE SHALL BE MAINTAINED BETWEEN OUTSIDE AIR INTAKES AND EXHAUST FANS AND PLUMBING VENT TERMINALS.

6. ALL DIMENSIONS, CLEARANCES AND TOLERANCES SHALL BE VERIFIED PRIOR TO INSTALLATION. ALL ROUGH-IN LOCATIONS SHALL BE COORDINATED WITH THE MANUFACTURER'S SUBMITTAL INFORMATION.

7. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND/OR THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

8. PRIOR TO THE BUILDING TURNOVER, A COMPLETE START-UP, TEST, ADJUST AND BALANCE SHALL BE PERFORMED ON ALL MECHANICAL SYSTEMS. THIS WORK SHALL BE PERFORMED BY A THIRD-PARTY CERTIFIED TEST AND BALANCE CONTRACTOR.

9. ALL PENETRATIONS OF FIRE-RATED WALLS SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING SYSTEM.

10. UPON COMPLETION OF PROJECT, ALL SYSTEM EQUIPMENT AND MATERIALS SHALL BE IN NEW, CLEAN CONDITION WITH ALL DAMAGE RESTORED TO CONDITION ACCEPTABLE TO THE OWNERS REPRESENTATIVE. ALL EQUIPMENT, COMPONENTS, DUCTWORK AND AIR DEVICES SHALL BE INSPECTED AND THOROUGHLY CLEANED, CLEARED OF DEBRIS, AND READY FOR USE. AT COMPLETION OF JOB, ALL MISCELLANEOUS TOOLS, SCAFFOLDING, SURPLUS MATERIALS, RUBBISH AND DEBRIS SHALL BE REMOVED BY CONTRACTOR.

11. CONTRACTOR SHALL PROVIDE TWO SETS OF 2" MERV 8 OR HIGHER THROW AWAY TYPE FILTERS. A CLEAN SET SHALL BE PROVIDED PRIOR TO TEST AND BALANCE AND AGAIN PRIOR TO OPENING.

12. PROVIDE NEW MATERIAL, EQUIPMENT, AND APPARATUS UNDER THIS CONTRACT UNLESS OTHERWISE STATED HEREIN, OF BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE, AND FREE FROM ANY DEFECTS. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT NECESSARILY INTENDED TO DESIGNATE THE REQUIRED TRIM, WRITTEN DESCRIPTIONS OF THE TRIM GOVERN MODEL NUMBERS.

13. THE COMPLETE INSTALLATION SHALL FUNCTION AS DESIGNED AND INTENDED WITH RESPECT TO EFFICIENCY, CAPACITY, NOISE LEVEL, ETC. ABNORMAL NOISE CAUSED BY RATTLING EQUIPMENT, PIPING, DUCTS, AIR DEVICES, AND SQUEAKS IN ROTATING COMPONENTS WILL NOT BE ACCEPTABLE. IN GENERAL, MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL TYPE EQUIPMENT WILL NOT BE ACCEPTED.

14. REPAIR OR REPLACE PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT TO THE SATISFACTION OF AUTHORITIES AND REGULATIONS HAVING JURISDICTION.

COORDINATION

1. COORDINATE WORK WITH THAT OF OTHER TRADES SO THAT THE VARIOUS COMPONENTS OF THE SYSTEMS WILL BE INSTALLED AT THE PROPER TIME, WILL FIT THE AVAILABLE SPACE, AND WILL ALLOW PROPER SERVICE ACCESS TO THOSE ITEMS REQUIRING MAINTENANCE. COMPONENTS WHICH ARE INSTALLED WITHOUT REGARD TO THE ABOVE SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.

2. UNLESS OTHERWISE INDICATED, THE GENERAL CONTRACTOR WILL PROVIDE CHASES AND OPENINGS IN BUILDING CONSTRUCTION REQUIRED FOR INSTALLATION OF THE SYSTEMS SPECIFIED HEREIN. CONTRACTOR SHALL FURNISH THE GENERAL CONTRACTOR WITH INFORMATION WHERE CHASES AND OPENINGS ARE REQUIRED. KEEP INFORMED AS TO THE WORK OF OTHER TRADES ENGAGED IN THE CONSTRUCTION OF THE PROJECT, AND EXECUTE WORK IN A MANNER AS TO NOT INTERFERE WITH OR DELAY THE WORK OF OTHER TRADES.

3. FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALE DIMENSIONS. CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE BUILDING, AS VARIATIONS MAY OCCUR. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ERRORS THAT COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION.

4. PROVIDE MATERIALS WITH TRIM THAT WILL PROPERLY FIT THE TYPES OF CEILING, WALL, OR FLOOR FINISHES ACTUALLY INSTALLED. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT INTENDED TO DESIGNATE THE REQUIRED TRIM.

SHOP DRAWING SUBMITTALS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR OWNER APPROVAL TO THE CONSTRUCTION MANAGER FOR THE FOLLOWING ITEMS:
   - -ROOFTOP UNITS
   - -SPLIT SYSTEMS
   - -EXHAUST FANS
   - -AIR CURTAINS
   - -KITCHEN HOODS
   - -MAKEUP AIR UNITS
   - -DEDICATED OUTDOOR AIR SYSTEMS (DOAS)
   - -DUCT HEATERS
   - -DIFFUSERS AND GRILLES
   - -ALL ASSOCIATED CONTROLS FOR ITEMS ABOVE

2. CONTRACTOR SHALL ALSO SUBMIT FINAL HVAC TEST AND BALANCE REPORT.

PROTECTION OF EQUIPMENT AND MATERIALS

1. STORE AND PROTECT FROM DAMAGE EQUIPMENT AND MATERIALS DELIVERED TO JOB SITE. COVER WITH WATERPROOF, TEAR-RESISTANT, HEAVY TARP OR POLYETHEYLENE PLASTIC AS REQUIRED TO PROTECT FROM PLASTER, DIRT, PAINT, WATER, OR PHYSICAL DAMAGE. EQUIPMENT AND MATERIAL THAT HAS BEEN DAMAGED BY CONSTRUCTION ACTIVITIES WILL BE REJECTED, AND CONTRACTOR IS OBLIGATED TO FURNISH NEW EQUIPMENT AND MATERIAL OF A LIKE KIND.

2. PLUG OR CAP OPEN ENDS OF DUCTWORK AND PIPING SYSTEMS WHILE STORED OR INSTALLED DURING CONSTRUCTION WHEN NOT IN USE TO PREVENT THE ENTRANCE OF DEBRIS INTO THE SYSTEMS.

ON-SITE ASSISTANCE AND OPERATION AND MAINTENANCE INSTRUCTIONS

1. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH OWNER A TIME TO BE ON SITE TO PROVIDE ASSISTANCE TO OWNER TO BECOME FAMILIAR WITH MECHANICAL EQUIPMENT OPERATION.

2. COLLECT AND COMPILE A COMPLETE BROCHURE OF FIXTURES AND EQUIPMENT FURNISHED AND INSTALLED ON THIS PROJECT. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS, WIRING DIAGRAMS, AND DESCRIPTIVE LITERATURE FURNISHED BY THE MANUFACTURER. INCLUDE AN INSIDE COVER SHEET THAT LISTS THE PROJECT NAME, DATE, OWNER, ARCHITECT, ENGINEER, GENERAL CONTRACTOR, SUB-CONTRACTOR, AND AN INDEX OF CONTENTS. SUBMIT COPIES OF LITERATURE BOUND IN APPROVED BINDERS TO THE ARCHITECT AND OWNER AT THE TERMINATION OF THE WORK. PAPER CLIPS, STAPLES, RUBBER BANDS, AND MAILING ENVELOPES ARE NOT CONSIDERED APPROVED BINDERS.

WARRANTIES

1. WARRANT EACH SYSTEM AND EACH ELEMENT THEREOF AGAINST ALL DEFECTS DUE TO FAULTY WORKMANSHIP, DESIGN OR MATERIAL FOR A PERIOD OF 12 MONTHS FROM DATE OF SUBSTANTIAL COMPLETION, UNLESS SPECIFIC ITEMS ARE NOTED TO CARRY A LONGER WARRANTY IN THE CONSTRUCTION DOCUMENTS OR MANUFACTURER'S STANDARD WARRANTY EXCEEDS 12 MONTHS. REMEDY ALL DEFECTS, OCCURRING WITHIN THE WARRANTY PERIOD(S). WARRANTIES SHALL INCLUDE LABOR AND MATERIAL. MAKE REPAIRS OR REPLACEMENTS WITHOUT ANY ADDITIONAL COSTS TO THE OWNER. PERFORM THE REMEDIAL WORK PROMPTLY. UPON WRITTEN NOTICE FROM THE ENGINEER OR OWNER. AT THE TIME OF SUBSTANTIAL COMPLETION, DELIVER TO THE OWNER ALL WARRANTIES, IN WRITING AND PROPERLY EXECUTED, INCLUDING TERM LIMITS FOR WARRANTIES EXTENDING BEYOND THE ONE YEAR PERIOD, EACH WARRANTY INSTRUMENT BEING ADDRESSED TO THE OWNER AND STATING THE COMMENCEMENT DATE AND TERM.

CUTTING AND PATCHING

1. PERFORM CUTTING OF WALLS, FLOORS, CEILINGS, ETC. AS REQUIRED TO INSTALL WORK UNDER THIS SECTION. OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO CUTTING. DO NOT CUT OR DISTURB STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL FROM THE ARCHITECT. CUT HOLES AS SMALL AS POSSIBLE. GENERAL CONTRACTOR SHALL PATCH WALLS, FLOORS, ETC. AS REQUIRED BY WORK UNDER THIS SECTION. PATCHING SHALL MATCH THE ORIGINAL MATERIAL AND CONSTRUCTION. REPAIR AND REFINISH AREAS DISTURBED BY WORK TO THE CONDITION OF ADJOINING SURFACES IN A MANNER SATISFACTORY TO THE ARCHITECT.

ROUGH-IN

1. COORDINATE WITHOUT DELAY ROUGHING-IN WITH GENERAL CONSTRUCTION. CONCEAL PIPING AND CONDUIT ROUGH-IN EXCEPT IN UNFINISHED AREAS AND WHERE OTHERWISE SHOWN.

STRUCTURAL STEEL AND SUPPORT

1. STRUCTURAL STEEL USED FOR PIPE SUPPORTS, EQUIPMENT SUPPORTS, ETC. SHALL BE NEW, CLEAN, AND CONFORM TO ASTM DESIGNATION A-36.

2. SUPPORT EQUIPMENT AND PIPING FROM THE BUILDING STRUCTURE. DO NOT SUPPORT EQUIPMENT FROM CEILINGS, OTHER MECHANICAL OR ELECTRICAL COMPONENTS, AND OTHER NON-STRUCTURAL ELEMENTS.

ACCESS DOORS

1. PROVIDE ACCESS DOORS IN CEILINGS AND WALLS WHERE INDICATED OR REQUIRED FOR ACCESS TO CONCEALED VALVES AND EQUIPMENT INSTALLED UNDER THIS SECTION. PROVIDE CONCEALED HINGES, SCREWDRIVER-TYPE LOCK, ANCHOR STRAPS; MANUFACTURED BY MILCOR. ZURN, TITUS, OR EQUAL. OBTAIN ARCHITECT'S APPROVAL OF TYPE, SIZE, LOCATION, AND COLOR BEFORE ORDERING.

PENETRATIONS

1. SEAL FLOOR, EXTERIOR WALL AND ROOF PENETRATIONS WATER AND WEATHERTIGHT WITH APPROPRIATE NON-SHRINK, NON-HARDENING COMMERCIAL CONSTRUCTION SEALANT. SEAL ROOF PENETRATIONS WITH 4 POUND PER SQUARE FOOT LEAD FLASHING. PROVIDE A SLEEVE, AND SEAL NON-FIRE-RATED FLOOR AND WALL PENETRATIONS WITH FIBERGLASS PACKING AND SILICONE CAULK (FOR ACOUSTICAL INSULATION).

2. COORDINATE FIRE RATING REQUIREMENTS AND LOCATIONS WITH THE ARCHITECT. SEAL PENETRATIONS OF FIRE-RATED ASSEMBLIES WITH 3M # CP-25 FIRE BARRIER CAULK (PROVIDE THICKNESS AND METHOD AS REQUIRED AND RECOMMENDED BY MANUFACTURER) TO MAINTAIN THE FIRE RESISTANCE RATING OF FIRE-RATED ASSEMBLIES.

3. SEAL EXTERIOR WALL PENETRATIONS BELOW GRADE WITH CAST IRON WALL PIPES AND MODULAR MECHANICAL SLEEVE SEALS, MANUFACTURED BY THUNDERLINE/LINK SEAL, CALPICO, INC AND METRAFLEX.

4. PROVIDE SLEEVES FOR HORIZONTAL PIPE PASSING THROUGH OR UNDER FOUNDATION. SLEEVES SHALL BE CAST IRON SOIL PIPE TWO NOMINAL PIPE SIZES LARGER THAN THE PIPE SERVED.

5. PROVIDE SLEEVES FOR VERTICAL PIPE PASSING THROUGH SLAB ON GRADE. SLEEVES SHALL BE SCHEDULE 40 PVC PIPE, TWO NOMINAL PIPE SIZES LARGER THAN THE PIPE SERVED. SEAL WATER-TIGHT WITH SILICONE CAULK.

DUCTWORK

1. ALL DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS CORRESPONDING TO THE SYSTEM PRESSURE. DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR A TWO-INCH PRESSURE RATING AND SEAL CLASS A.

2. KITCHEN HOOD AND GREASE EXHAUST DUCTWORK SHALL BE PROVIDED AND INSTALLED IN ACCORANCE WITH MANUFACTURER'S INSTRUCTIONS, SMACNA, AND ALL APPLICABLE CODES INCLUDING BUT NOT LIMITED TO NFPA 96.

3. ALL RECTANGULAR DUCT SIZES SHOWN ARE THE NET FREE AREA. DUCT ALLOWANCES NEED TO BE CONSIDERED FOR THE INSULATION LINER WHERE APPLICABLE IN THE RECTANGULAR DUCTS. AT DUAL WALL DUCTS, THE DIMENSION SHOWN IS THE INSIDE METAL DUCT SIZE AND ALLOWANCES NEED TO BE CONSIDERED FOR THE INSULATION THICKNESS.

4. EXPOSED DUCTWORK SHALL BE DOUBLE-WALL SPIRAL INTERNALLY INSULATED DUCTWORK UNLESS NOTED OTHERWISE ON PLANS. DOUBLE-WALL DUCT AND FITTINGS TO BE PROVIDED WITH SLIP JOINT CONNECTION TYPE; FLANGE-TO-FLANGE CONNECTION TYPES ARE NOT ALLOWED.

5. ALL SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK INSIDE THE BUILDING SHALL BE INSULATED. MINIMUM R-VALUE R-6.

6. INSULATE SUPPLY AND RETURN DUCTWORK LOCATED OUTSIDE THE BUILDING WITH 2" LINER AND SEAL SEAMS WEATHER TIGHT WITH TOTAL MINIMUM R-VALUE OF 12, PROVIDE WEATHER JACKET ACCORDINGLY.

7. FLEXIBLE DUCTWORK MAINS ARE NOT PERMITTED. PROVIDE MAXIMUM 5'-0" FLEXIBLE DUCT CONNECTIONS TO CEILING DIFFUSERS.

8. FURNISH AND INSTALL VOLUME/BALANCE DAMPERS AT ALL BRANCH DUCTS TO DIFFUSERS. LOCATE DAMPERS A MINIMUM OF 4'-0" AWAY FROM DIFFUSERS.

9. ALL DIFFUSER BACK PANS SHALL BE EXTERNALLY INSULATED WITH A MOLDED HEAVY DUTY FOIL/SCRIM VAPOR BARRIER WITH AN R-VALUE OF R-6. THE INSULATION SHALL MEET THE REQUIREMENTS OF UL 181 AND NFPA 90A.

10. INSTALL EXHAUST FANS AND FLUES A MINIMUM OF 5'-0" FROM PARAPET OR OUTSIDE WALL. IF NO PARAPET IS PRESENT, INSTALL EXHAUST FANS A MINIMUM OF 10'-0" FROM ROOF EDGE. ADDITIONALLY, ENSURE ALL OUTSIDE AIR INTAKES ARE MINIMUM 10'-0" FROM ALL EXHAUST AIR OUTLETS OR FLUES.

ELECTRICAL WIRING

1. REFER TO ELECTRICAL FOR LINE VOLTAGE.

2. ALL TEMPERATURE SENSORS, FAN SWITCHES, AND SPEED CONTROLS SHALL BE INSTALLED 48" ABOVE THE FLOOR FOR ADA REQUIREMENTS.

FINAL TESTING AND ADJUSTMENTS

1. AIR BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AIR BALANCE CONTRACTOR. THE FOLLOWING TOLERANCES ARE ACCEPTABLE, PROVIDED THAT THE FINAL AIR BALANCE IS SUCH THAT THE OVERALL SPACE IS POSITIVELY PRESSURED AS INDICATED ON DRAWINGS: BALANCE EACH SUPPLY, RETURN, OUTSIDE AIR DEVICE WITHIN 5% OF REQUIREMENTS AND FURNISH A REPORT TO THE CONSTRUCTION MANAGER. THE ENTIRE HVAC SYSTEM MUST BE FULLY OPERABLE, BALANCED, AND APPROVED BY OWNER'S REPRESENTATIVE ON THE DAY TENANT OPENS FOR BUSINESS.

2. ADJUST THERMOSTATS AND CONTROL DEVICES TO OPERATE AS INTENDED. ADJUST BURNERS, PUMPS, FANS, ETC. FOR PROPER AND EFFICIENT OPERATION. CERTIFY TO ARCHITECT THAT ADJUSTMENTS HAVE BEEN MADE AND THAT SYSTEM IS OPERATING SATISFACTORILY. A TEST AND BALANCE REPORT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. CALIBRATE, SET AND ADJUST AUTOMATIC TEMPERATURE CONTROLS. CHECK PROPER SEQUENCING OF INTERLOCK SYSTEMS, AND OPERATION OF SAFETY CONTROLS.

WASHINGTON BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF WASHINGTON DC BUILDING CODE 2017, AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS.

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 2017 BUILDING CODE REQUIREMENTS AS OUTLINES IN SECTION [BC 1704].

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 2017 DCMC 301.8.1.

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

A. STANDARDS OF HEATING - 2017 DCMC 309.1
B. DUCT CONSTRUCTION AND INSTALLATION- 2017 DCMC 603
C. AIR INTAKES, EXHAUSTS AND RELIEF - 2017 DCMC 401.5
D. AIR FILTERS - 2017 DCMC 605
E. SMOKE DETECTORS AND FIRE AND SMOKE DAMPERS - 2017 DCMC 606 & 607 RESPECTIVELY
F. MANUAL AND AUTOMATIC FIRE AND SMOKE CONTROLS FOR AIR DISTRIBUTION SYSTEMS - 2017 DCMC 513

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

7. VENTILATION FOR ALL AREA SHALL COMPLY WITH 2017 DCMC 401.

8. COMBINATION FIRE/SMOKE DAMPERS AND SMOKE DAMPERS SHALL BE ACCEPTED FOR USE BY WASHINGTON DC DEPARTMENT OF BUILDINGS AND SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH UL 555S.

9. SMOKE DETECTION SYSTEMS SHALL BE INSTALLED AND SEQUENCED TO FOLLOW CONTROLS OPERATIONS WITH THE REQUIREMENTS OF SECTION 2017 DCMC 606 TO CLOSE DAMPERS AND AUTOMATICALLY STOP THE FAN.

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

11. 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.

12. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.

MECHANICAL LEGEND

SINGLE LINE DUCTWORK	DOUBLE LINE DUCTWORK	DESCRIPTION
WxD W"ø	WxD W"ø	RECTANGULAR AND ROUND DUCT. DUCT SIZES ARE IN INCHES. DUCT SIZES REPRESENT INSIDE DIMENSIONS OF DUCTWORK.
WxD WxD	WxD	45° TAP USED AT BRANCH DUCTS ONLY.
WxD X"ø	WxD	CONICAL TAP USED AT ROUND BRANCH DUCTS.
		90° ELBOW WITH SINGLE RADIUS TURNING VANES CURVED ELBOW (MIN. RADIUS R = 1.5 WIDTH)
		SPIN-IN FLEX DUCT TAKE-OFF WITH MANUAL BALANCE DAMPER.
		BALANCING DAMPER
M	M	MOTORIZED DAMPER.
FD FD FSD	FD FD FSD	SMOKE DAMPER, FIRE DAMPER, AND COMBINATION FIRE SMOKE DAMPER WITH ACCESS PANEL.
SD	SD	DUCT SMOKE DETECTOR.
SUPPLY RETURN EXHAUST	SUPPLY RETURN EXHAUST	RECTANGULAR DUCTWORK.
		ROUND DUCTWORK.
WxD X"ø	WxD X"ø	RECTANGLE TO ROUND TRANSITION.
SUPPLY RETURN EXHAUST	ROUND SIDEWALL LINEAR	GRILLES REGISTERS AND DIFFUSERS.
T S PS S — T: TYPE; RTU-1: CONTROLLED UNIT; 48" AFF.: MOUNTING HEIGHT*		PROGRAMMABLE THERMOSTAT, TEMPERATURE AND/OR HUMIDITY SENSOR, PULL STATION, HOOD SENSOR (* ALL SENSORS TO BE MOUNTED AT 48"AFF, UNLESS NOTED OTHERWISE)
		POINT OF CONNECTION.
		EXISTING TO BE DEMOLISHED.
CD1 — AIR DEVICE MARK; 200 CFM — AIRFLOW CFM		AIR DEVICE TAG *BRANCH DUCT SIZE TO BE SAME AS NECK SIZE, UNLESS NOTED OTHERWISE
ETR=EXISTING TO REMAIN, EXR=EXISTING RELOCATED, XR=EXISTING REMOVED		EXISTING VARIANTS

*** ALL SYMBOLS ON LEGEND MAY NOT APPLY TO DRAWING(S). ***

HVAC SEQUENCE OF OPERATION

GENERAL OPERATION

MAU-1(N) SHALL BE INTERLOCKED WITH THE KITCHEN HOOD OPERATION TO PROVIDE PROPER VENTILATION IN RESPONSE TO THE HOOD STATUS. THE UNIT SHALL OPERATE TO MAINTAIN SPACE TEMPERATURE AND HUMIDITY CONDITIONS AS OUTLINED BELOW.

KITCHEN HOOD OPERATION (ON)

WHEN ANY KITCHEN HOOD IS IN OPERATION (ON):

1. **OUTSIDE AIR DAMPERS**:
   - MAU-1(N): MODULATE TO MAINTAIN AN AIRFLOW OF **3,900 CFM**.
2. **SUPPLY AIR FAN OPERATION**:
   - THE SUPPLY AIR FANS SHALL OPERATE CONTINUOUSLY AT A SPEED REQUIRED TO MAINTAIN THE SCHEDULED AIRFLOW.
3. **TEMPERATURE CONTROL**:
   - UNITS SHALL BE CONTROLLED BY THERMOSTATS TO MAINTAIN A SPACE TEMPERATURE OF:
     - DINING: 72°F (ADJUSTABLE) FOR COOLING AND 68°F (ADJUSTABLE) FOR HEATING.
     - KITCHEN/BOH: 77°F (ADJUSTABLE) FOR COOLING AND 68°F (ADJUSTABLE) FOR HEATING.
   - HEATING SHALL BE ACTIVATED IF THE SPACE TEMPERATURE FALLS BELOW THE HEATING SETPOINT.
   - COOLING SHALL BE ACTIVATED IF THE SPACE TEMPERATURE RISES ABOVE THE COOLING SETPOINT
4. **DEHUMIDIFICATION CONTROL:**
   - WHEN SPACE HUMIDITY EXCEEDS THE SETPOINT (E.G., 60% RH ADJUSTABLE), THE COOLING COIL SHALL ACTIVATE FOR DEHUMIDIFICATION.
   - DURING DEHUMIDIFICATION, THE SYSTEM IS PERMITTED TO OVERSHOOT THE COOLING TEMPERATURE SETPOINT BY UP TO 2°F (ADJUSTABLE) TO PRIORITIZE HUMIDITY CONTROL.
   - **REHEAT OPERATION:**
     - IF THE SPACE TEMPERATURE FALLS BELOW THE ADJUSTED COOLING SETPOINT DURING DEHUMIDIFICATION, THE HEATING COIL SHALL ACTIVATE FOR REHEATING TO MAINTAIN OCCUPANT COMFORT.
   - **RESET TO COOLING SETPOINT:**
     - ONCE THE RELATIVE HUMIDITY DROPS BELOW THE SETPOINT (E.G., 60% RH), THE SYSTEM SHALL RETURN TO STANDARD COOLING MODE TO MAINTAIN THE ORIGINAL TEMPERATURE SETPOINT (E.G., 72°F ADJUSTABLE).
5. **COOLING AND HEATING COIL OPERATION**:.
   - COMPRESSORS SHALL CYCLE ON AND OFF (OR MODULATE) BASED ON THERMOSTAT AND HUMIDITY SENSOR INPUTS TO MEET SPACE CONDITIONS.
   - HEATING COILS SHALL MODULATE OR CYCLE TO MAINTAIN THE REQUIRED SPACE TEMPERATURE.

KITCHEN HOOD OPERATION (OFF)

WHEN ALL KITCHEN HOODS ARE NOT IN OPERATION (OFF):

1. **OUTSIDE AIR DAMPERS**:
   - MAU-1(N): OUTSIDE AIR DAMPER TO BE CLOSED.

STARTUP AND SHUTDOWN PROCEDURES

1. **STARTUP**:
   - UPON SYSTEM STARTUP, OUTSIDE DAMPERS SHALL DEFAULT TO MINIMUM OPEN POSITIONS. FANS SHOULD START AT MINIMUM SPEED AND COMPRESSORS SHOULD CYCLE OR MODULATE BASED ON SPACE TEMPERATURE AND HUMIDITY.
2. **SHUTDOWN**:
   - UPON SYSTEM SHUTDOWN, FANS SHALL RAMP DOWN TO A STOP, AND ALL DAMPERS SHALL RETURN TO THEIR CLOSED POSITIONS. COMPRESSORS SHALL TURN OFF, AND A DELAY TIMER (IF APPLICABLE) SHALL PREVENT RAPID CYCLING.

FAIL-SAFE AND ALARMS

1. IF A THERMOSTAT OR HUMIDITY SENSOR FAILS, THE SYSTEM SHALL DEFAULT TO MANUAL OPERATION OR PREDEFINED TEMPERATURE AND HUMIDITY SETPOINTS. (72°F AND 60%)
2. IF THE OUTSIDE AIR DAMPER FAILS, IT SHOULD DEFAULT TO THE OPEN POSITION, AND THE CORRESPONDING RETURN DAMPER SHOULD CLOSE. AN ALARM SHOULD BE TRIGGERED AT THE CONTROLLER
3. IF THE RETURN DAMPER FAILS, IT SHOULD DEFAULT TO THE CLOSED POSITION, AND THE CORRESPONDING OUTSIDE DAMPER SHOULD OPEN. AN ALARM SHOULD BE TRIGGERED AT THE CONTROLLER
4. ALARMS SHALL TRIGGER FOR THE FOLLOWING CONDITIONS:
   - DAMPER MALFUNCTION (FAILURE TO MODULATE).
   - HIGH SPACE TEMPERATURE ABOVE 85°F (ADJ.).
   - LOW SPACE TEMPERATURE BELOW 60°F (ADJ.).
   - FAN FAILURE OR LOSS OF AIRFLOW.

MAINTENANCE

- ESTABLISH A REGULAR MAINTENANCE SCHEDULE INCLUDING:
  - FILTER CHANGES EVERY THREE MONTHS.
  - ANNUAL COIL CLEANING
  - ANNUAL SENSOR CALIBRATION

CONTROL SYSTEM

- THE MAU UNITS SHALL BE CONTROLLED LOCALLY BY THE UNIT CONTROLLER.

COMMISSIONING

- THOROUGH COMMISSIONING SHALL BE PERFORMED TO VERIFY ALL SYSTEM FUNCTIONS AND SEQUENCES OPERATE AS INTENDED.

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NO.	DATE	DESCRIPTION
0	10/08/2025	ISSUE FOR PERMIT
1	11/25/2025	BUILDING COMMENTS

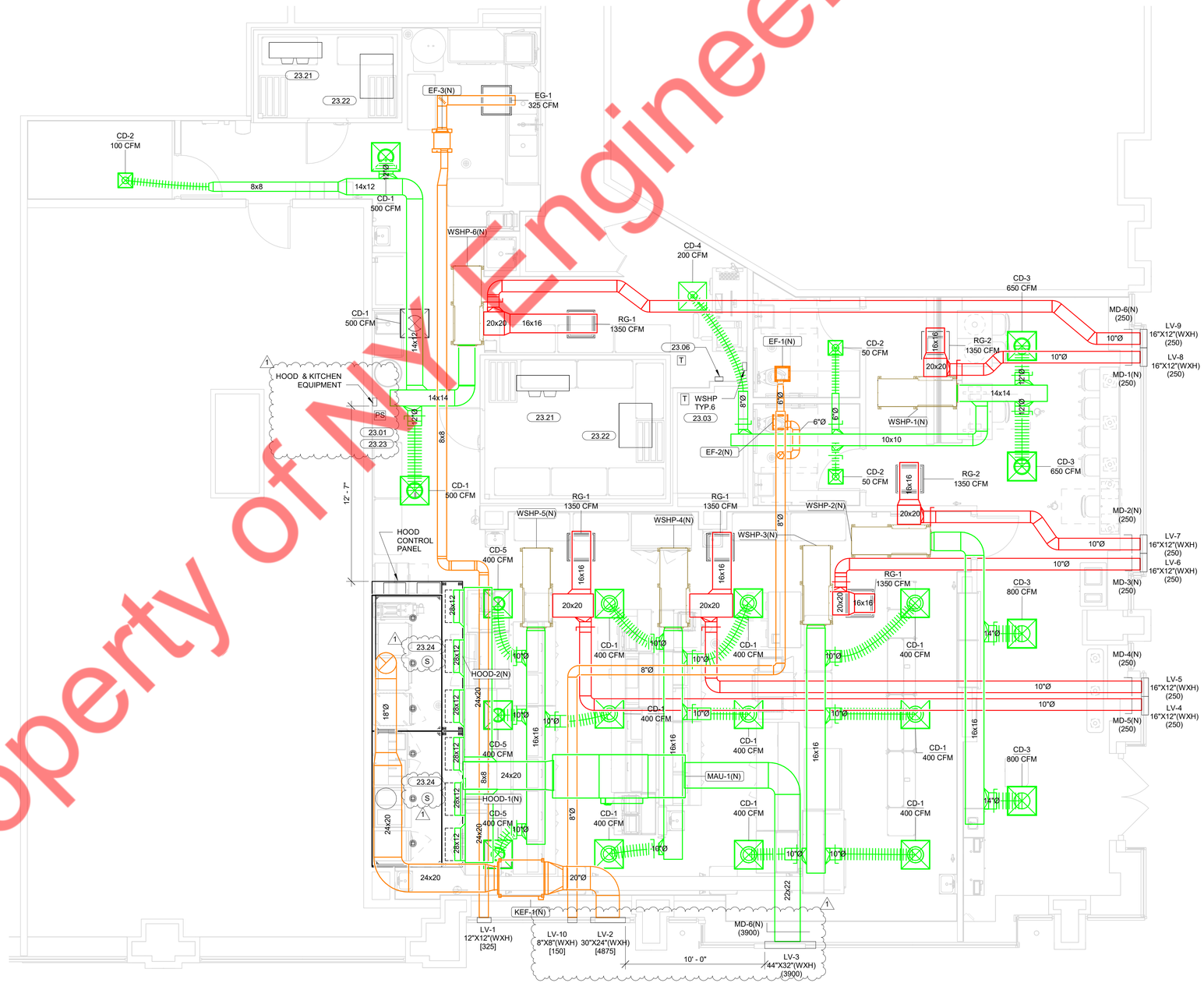
DRAWN BY NYE
CHECKED BY NYE

ARCH. PROJECT NO.:
CDR25024.0 DESIGN ID: D3-51-A9.E3

SHEET NAME
MECHANICAL SHEET SPECIFICATIONS, SYMBOLS AND NOTES

SHEET NUMBER
M001

KEYNOTES	
23.01	KITCHEN HOOD EMERGENCY PULL STATION. PROVIDE AND CONNECT AUDIO/VISUAL ALARM TO HOOD SUPRESSION SYSTEM BY E.C. ALARM TO ACTIVATE UPON ACTIVATION OF THE HOOD SUPRESSION SYSTEM.
23.03	MOUNT WIRED THERMOSTAT OR SENSOR AS SHOWN 48" AFF. LABEL ALL DEVICES FOR UNIT SERVED.
23.06	MOUNT THERMOSTAT PROVIDED WITH VAV DIFFUSER AT 48" AFF. BALANCE MINIMUM AIRFLOW TO 35 CFM.
23.21	WALK-IN REFRIGERATION EQUIPMENT PROVIDED BY OTHERS, SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXACT LOCATION.
23.22	COORDINATE LOCATION WITH OWNER, SECURE RACK AS PER MANUFACTURER RECOMMENDATIONS. REMOTE CONDESING UNIT PROVIDED BY AND INSTALLED BY WALK-IN COOLER VENDOR, TO BE SECURED TO RACK.
23.23	VERIFY THE EXACT LOCATION OF PULL STATION WITH KITCHEN EQUIPMENT SUPPLIER. PROVIDE & INSTALL THE EMERGANCY MANUAL SHUTDOWN PUSH BUTTON FOR KITCHEN EQUIPMENT & HOOD-1(N). A MANUAL ACTUATED DEVICE THAT AUTOMATICALLY SHUT DOWN THE FUEL AND ELECTRICAL POWER SUPPLY TO THE COOKING EQUIPMENT SHALL BE LOCATED AT OR NEAR THE MEANS OF EGRESS FROM THE COOKING AREA. PUSH BUTTON SHALL BE IN THE PATH OF EGRESS, A MINIMUM OF 10 FT. & MAXIMUM OF 20 FT. FROM THE EXHAUST AIR SYSTEM. THE EXHAUST HOOD SYSTEM SHALL BE OPERATIONAL DURING ALL KITCHEN OPERATING HOURS.
23.24	PROVIDE HEAT OR RADIENT ENERGY SENSORS FOR THE EACH EXHAUST HOODS SYSTEM. SENSORS SHALL BE CAPABLE OF BEING ACCESSED FROM THE HOOD OUTLET OR FROM A CLEANOUT LOCATION.



1 FIRST FLOOR HVAC PLAN

1/4" = 1'-0"

CONSULTANTS

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MIAMI, FL 33179
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NO.	DATE	DESCRIPTION
0	10/08/2025	ISSUE FOR PERMIT
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ARCH. PROJECT NO.:

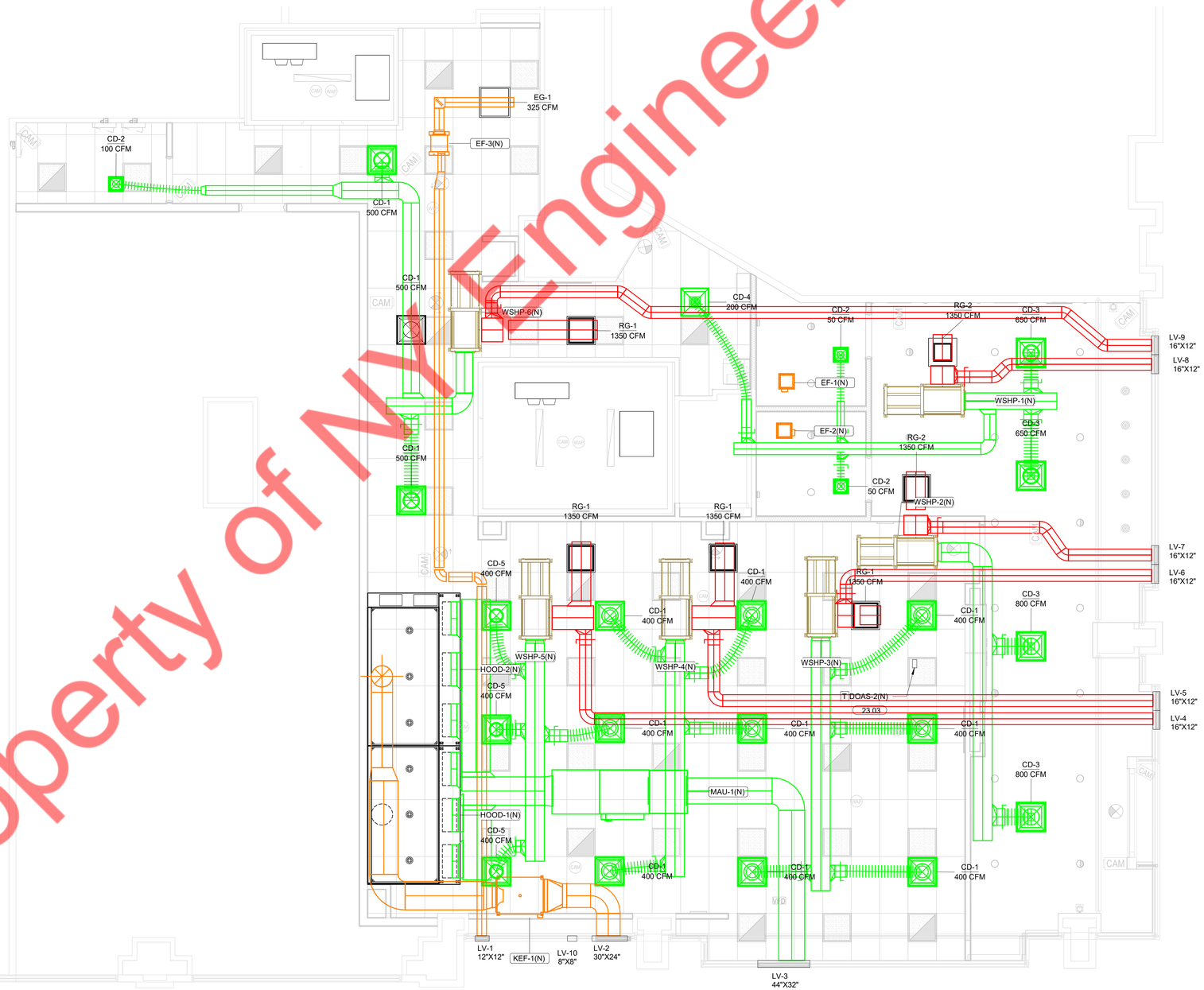
CDR25024.0 DESIGN ID: D3-51-A9.E3

SHEET NAME

HVAC PLAN

SHEET NUMBER

M101



1 HVAC RCP PLAN

1/4" = 1'-0"

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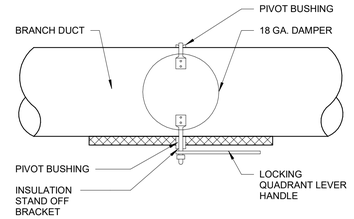
SHEET NAME

HVAC RCP PLAN

SHEET NUMBER

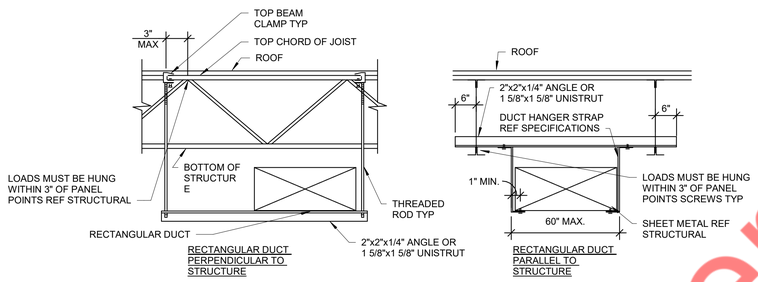
M102

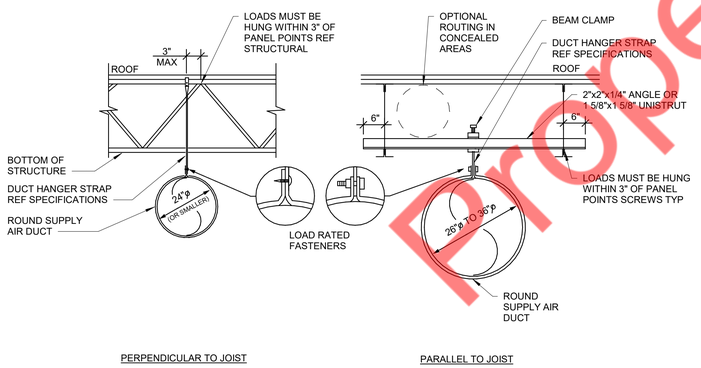


ROUND DAMPER

5 MANUAL DAMPER

NTS



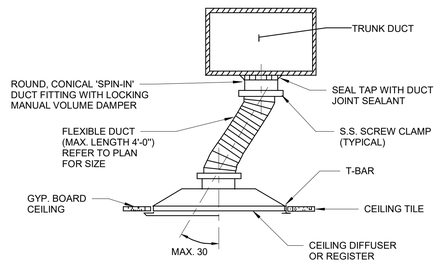


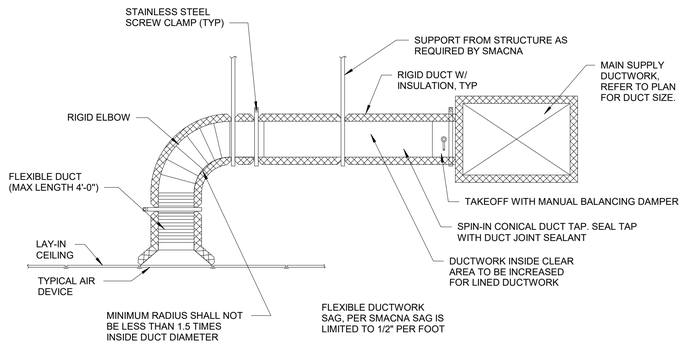
PERPENDICULAR TO JOIST

PARALLEL TO JOIST

3 DUCT SUPPORT AND GRILLE

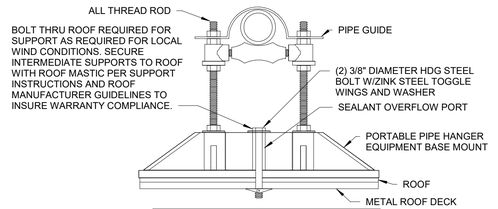
NTS





2 DIFFUSER CONNECTION DETAIL

NTS

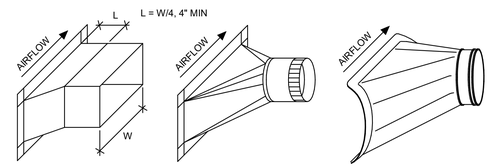


SEAL ALL ROOF PENETRATIONS WATER TIGHT

PROVIDE PIPING SUPPORT SPACING AS REQUIRED BY LOCAL AUTHORITY. PIPING SUPPORTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. PIPING SUPPORTS SHALL BE INSTALLED TO WITHSTAND 3-SECOND WIND GUST UP TO 100 MPH.

4 ROOF PIPE SUPPORT

NTS



1. SPIN-IN FITTINGS W/ SCOOPS ARE NOT ACCEPTABLE.
2. REF PLANS FOR RUNOUT SIZES.
3. 45° LEAD IN.

1 BRANCH DUCT FITTING

NTS

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CDR25024.0 DESIGN ID: D3-51-49.E3

SHEET NAME

MECHANICAL DETAILS

SHEET NUMBER

M501

WATER SOURCE HEAT PUMP UNIT SCHEDULE

BASIS OF DESIGN: TRANE OR EQUIVALENT

TAG	TYPE OF UNIT	SERVING	TONANGE	QTY	SUPPLY AIR CFM	OUTSIDE AIR CFM	ESP (IN OF WC)	FLUID PROPERTIES		TOTAL COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	HEATING CAPCITY (MBH)	ELECTRICAL				EFFICIENCY		DIMENSION (LXWXH)	WEIGHT (LBS)	MODEL	NOTES
								WATER FLOW RATE (GPM)	WATER PRESSURE DROP COOLING/HEATING (FT OF W.C)				V/ PH/ HZ	FLA (A)	MCA (A)	MOCP (A)	EER	COP				
WSHP-1(N), WSHP-2(N), WSHP-3(N), WSHP-4(N), WSHP-5(N), WSHP-6(N)	CEILING SUSPENDED	SEE PLAN	4	6	1600	250 (EACH)	0.5	12	14.3	52.2	43.08	60.41	460/3/60	9.6	12	15	15.9	4.9	68"X28"X21"	377	GEHK0484	1-12

NOTES:

1. PROVIDE UNIT MOUNTED DISCONNECT SWITCH. COORDINATE WITH ELECTRICAL DRAWINGS FOR DETAILS.
2. CONTRACTOR TO FIELD VERIFY IF ALL WSHP's RECEIVED MENTIONED CONDENSER WATER FLOW. PROVIDE BOOSTER PUMP IF REQUIRED.
3. PROVIDE SECONDARY DRAIN PAN WITH WATER LEAK BUG SENSOR.
4. CONDENSER WATER NEEDS TO BE FLUSHED PRIOR CONNECTING TO NEW WSHP
5. WSHP UNIT MUST BE FULLY ACCESSIBLE FOR SERVICE.
6. PROVIDE STANDARD 5 YEAR COMPRESSOR WARRANTY.
7. PROVIDE CONDENSATE OVERFLOW SENSOR.
8. PROVIDE WITH ENTERING WATER SENSOR.
9. UNITS ARE CEILING SUSPENDED TYPE, PROVIDE ADEQUATE SUPPORT FOR HANGING THE UNITS.
10. MECHANICAL CONTRACTOR TO COORDINATE WITH STRUCTURAL ENGINEER FOR STRUCTURAL SUPPORT AND INSTALLATION OF WSHPS.
11. PROVIDE ALL WSHP's WITH HUMIDITY CONTROL OPTIONS.
12. BALANCE THE OUTSIDE AIR SUPPLY AS PER THE OUTSIDE AIR CFM MENTIONED IN THE SCHEDULE.

MAKE-UP AIR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	SERVICE	MOTOR HP	FAN		ELECTRICAL DATA			ELECTRIC HEATER				MAX WEIGHT
					AIR (CFM)	E.S.P (IN. W.G.)	V/P/H	MCA (A)	MOCP (A)	V/P/H	AMPS	HEATING (MBH)	TEMP RISE (F)	(LBS)
MAU-1(N)	ECON-AIR	E2-E.734-20D	H-1(N), H-2(N)	5	3900	1.5	460/3/60	96.9	100	460/3/60	87.8	249.1	45	819

NOTES:

1. PROVIDE ALL NECESSARY ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATIONS.
2. REFER TO HOOD DRAWINGS ON SHEET MH101 TO MH103 FOR SPECIFICATIONS AND MORE DETAILS. SCHEDULES SHOWN FOR REFERENCE ONLY.
3. MAU-1(N) SHALL BE CONTROLLED BY HOOD CONTROLS.

KITCHEN EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	DRIVE TYPE	RPM	MOTOR HP	EXHAUST AIR DATA		ELECTRICAL DATA			MAX. LOUDNESS	MAX. WEIGHT
						AIR (CFM)	E.S.P (IN. W.G.)	VOLTAGE	PHASE	FLA	SONES	(LBS)
KEF-1(N)	ECON-AIR	EASIF20DD	DIRECT	1486	3	4875	2	460	3	4.3	19.1	495

NOTES:

1. FAN SHALL BE CONTROLLED BY HOOD CONTROLS. INTERLOCK WSHP-5(N) TO OPERATE IN OCCUPIED MODE WHILE KITCHEN EXHAUST FANS ARE ENERGIZED.
2. REFER TO HOOD DRAWINGS ON SHEET MH101 TO MH103 FOR SPECIFICATIONS AND MORE DETAILS. SCHEDULES SHOWN FOR REFERENCE ONLY.
3. PROVIDE ALL NECESSARY ACCESSORIES AS PER MANUFACTURER'S RECOMMENDATIONS.

HOOD SCHEDULE

UNIT ID	MANUFACTURER	TYPE	MODEL	SERVICE	EXHAUST AIR (CFM)	EXHAUST COLLAR (DIA.) (IN.)	SUPPLY AIR (CFM)	CONSTRUCTION	WEIGHT (LBS)
H-1(N)	ECON-AIR	I	6024 EX-2-PSP-F	KITCHEN	2437	18	1950	430 SS WHERE EXPOSED	724
H-2(N)	ECON-AIR	I	6024 EX-2-PSP-F	KITCHEN	2438	18	1950	430 SS WHERE EXPOSED	1208

NOTES:

1. REFER TO HOOD DRAWINGS ON SHEET MH101 TO MH103 FOR SPECIFICATIONS AND MORE DETAILS. SCHEDULES SHOWN FOR REFERENCE ONLY.
2. INCLUDE HOOD CONTROLLER WITH CONTROL PANEL FOR CONTROL OF HOOD, EXHAUST FAN & MAKE-UP AIR UNIT. THE CONTROLLER SHOULD INTEGRATE & CONTROL KITCHEN EXHAUST FAN & MAKE-UP AIR UNIT CONNECTED TO HOODS.

EXHAUST FAN SCHEDULE

TAG	QUANTITY	FLOW RATE	STATIC PRESSURE	ELECTRIC DATA				BASIS OF DESIGN		MAX. WEIGHT
			EXTERNAL	SPEED	V/PH/HZ	MCA (A)	MOCP (A)			
		CFM	IN W.G.	RPM				MANUFACTURER	MODEL	(LBS)
EF-1(N), EF-2(N)	2	75	0.5	773	115/60/1	0.4	15	GREENHECK	SP-LP0511-1	20
EF-3(N)	1	325	0.5	1350	115/60/1	1.8	15	GREENHECK	CSP-A390	30

NOTES:

1. INTERCONNECT EF-1(N) & 2(N) WITH ROOM LIGHT.
2. PROVIDE BACKDRAFT DAMPER AND DISCONNECT SWITCH.
3. INSTALL AS PER MANUFACTURERS RECOMMENDATION.
4. INTERCONNECT EF-3(N) WITH WSHP-6(N).

VENTILATION CALCULATION

ROOM NAME	AREA (SQ FT)	NUMBER OF PEOPLE/1000 SQ. FT. AS PER DCMC 2017	NUMBER OF PEOPLE AS PER DCMC 2017	FINAL PEOPLE NO.	MIN OUTSIDE AIR AS PER DCMC 2017		REQUIRED OUTSIDE AIR CFM AS PER - DCMC 2017	REQUIRED OUTSIDE AIR CFM AS PER - DCMC 2017	PROVIDED OUTSIDE AIR CFM	EXHAUST (CFM/SQFT) OR PER FIXTURE AS PER DCMC 2017	REQUIRED EXHAUST CFM	PROVIDED EXHAUST CFM
					CFM/ PEOPLE	CFM/ SQ.FT						
DINING	653	70	46	46	7.5	0.18	578	900	5400	0	0	5350
KITCHEN	1615	20	33	33	7.5	0.12	552	590		0.7	1135	
BOH	200	20	0	0	7.5	0.12	30	0		0.7	140	
ELEC	56	0	0	0	0	0.12	8	10		0	0	
RR-1	56	0	0	0	0	0	0	0		70	70	
RR-2	58	0	0	0	0	0	0	0		70	70	
TOTAL	**2638**	-	-	**79**	-	-	**1168**	**1500**	**5400**	-	**1415**	**5350**

AIR DEVICE SCHEDULE

TYPE	SERVICE	MANUFACTURER	MODEL	STYLE	MOUNTING	FACE SIZE	NOTES
CD-1	SUPPLY	PRICE	ASPD	SQUARE PLAQUE DIFFUSER	LAY-IN	24x24	1-4,8
CD-2	SUPPLY	PRICE	ASPD	SQUARE PLAQUE DIFFUSER	SEE NOTES	12x12	1-4,6,7,8
CD-3	SUPPLY	PRICE	ASPD	SQUARE PLAQUE DIFFUSER	LAY-IN	24x24	1-4,6,8
CD-4	SUPPLY	PRICE	VARITHERM	THERMALLY POWERED VAV CEILING DIFFUSER	LAY-IN	24x24	1-5,8
CD-5	SUPPLY	CAPTIVEAIRE	DI-PSP	PERFORATED DIFFUSER	LAY-IN	24x24	2-4,8
EG-1	EXHAUST	PRICE	80SR	1/2" x 1/2" x 1/2" EGGCRATE GRID	LAY-IN	24x24	1-4
EG-2	EXHAUST	PRICE	80SR	1/2" x 1/2" x 1/2" EGGCRATE GRID	LAY-IN	12x12	1-4
RG-1	RETURN	PRICE	80SR	1/2" x 1/2" x 1/2" EGGCRATE GRID	LAY-IN	24x24	1-4
RG-2	RETURN	PRICE	80SR	1/2" x 1/2" x 1/2" EGGCRATE GRID	SURFACE MOUNT	24x24	1-4

NOTES:

1. ALL ALUMINUM CONSTRUCTION.
2. NECK SIZE SAME SIZE AS BRANCH DUCT SIZE UNLESS NOTED OTHERWISE.
3. PROVIDE NECK FOR DUCT CONNECTION.
4. STANDARD WHITE FINISH
5. PROVIDE WITH ROOM THERMOSTAT MOUNTED ON WALL IN LOCATION SHOWN ON PLANS. MINIMUM CFM SHALL BE 35 CFM (DEFAULT).
6. WHERE SHOWN IN GYP CEILING, PROVIDE WITH INTEGRAL OPPOSED BLADE DAMPER IN NECK, ADJUSTABLE THRU FACE OF GRILLE.
7. WHERE SHOWN IN LAY-IN CEILING, PROVIDE WITH 24x24 MOUNTING FRAME.
8. PROVIDE WITH R-6 INSULATED BACK PAN.
9. PROVIDE WITH 30° DEFLECTION. MOUNT ON WALL AS HIGH AS POSSIBLE, REF FLOOR PLAN.

AIR BALANCE TABLE

UNIT	AREA SERVED	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR
WSHP-1(N)	SEE PLAN	1600 CFM	250 CFM	1350 CFM	-
WSHP-2(N)	SEE PLAN	1600 CFM	250 CFM	1350 CFM	-
WSHP-3(N)	SEE PLAN	1600 CFM	250 CFM	1350 CFM	-
WSHP-4(N)	SEE PLAN	1600 CFM	250 CFM	1350 CFM	-
WSHP-5(N)	SEE PLAN	1600 CFM	250 CFM	1350 CFM	-
WSHP-6(N)	SEE PLAN	1600 CFM	250 CFM	1350 CFM	-
MAU-1(N)	SEE PLAN	3900 CFM	3900 CFM	-	-
KEF-1(N)	SEE PLAN	-	-	-	4875 CFM
EF-1(N)	SEE PLAN	-	-	-	75 CFM
EF-2(N)	SEE PLAN	-	-	-	75 CFM
EF-3(N)	SEE PLAN	-	-	-	325 CFM
TOTAL:		13500 CFM	5400 CFM	8100 CFM	5350 CFM
BUILDING PRESSURE:				50 CFM	**POSITIVE**

1. CONTRACTOR TO BALANCE OUTSIDE AIR & RETURN AIR DAMPERS ON WSHPs & MAU TO MATCH VALUES AS MENTIONED IN ABOVE TABLE.

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SHEET NAME
MECHANICAL SCHEDULES

SHEET NUMBER
M601

FOR QUESTIONS, CALL THE
North New Jersey Mechanical
REGION 138
PHONE: (201) 308 - 6647
EMAIL: reg138@econair.com

HOOD INFORMATION – JOB#8254590

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM WIDTH	EXHAUST PLENUM LENG	EXHAUST PLENUM HEIGHT	RISER(S) DIA	RISER(S) CFM	RISER(S) VEL	RISER(S) SP	TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG END TO END	HOOD CONFIG ROW
1	Hood-Left	6024 EX-2-PSP-F	ECON-AIR	9' 8"	600 DEG	I	HEAVY	252	2437			4"	18"	2437	1379	-0.729"	1950	430 SS WHERE EXPOSED	LEFT	ALONE
2	Hood-Right	6024 EX-2-PSP-F	ECON-AIR	9' 9"	600 DEG	I	HEAVY	250	2438			4"	18"	2438	1380	-0.731"	1950	430 SS WHERE EXPOSED	RIGHT	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	Hood-Left	CAPTRATE SOLO FILTER	7	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO							YES	724 LBS
2	Hood-Right	CAPTRATE SOLO FILTER	7	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	RIGHT	12"x60"x24"	TANK FS	4.0/4.0/4.0	SC-310110MA	1 LIGHT 1 FAN	YES	1208 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	Hood-Left	FIELD WRAPPER 18.00" HIGH FRONT, LEFT.
		BACKSPLASH 84.00" HIGH X 246.00" LONG 430 SS VERTICAL.
		LEFT END STANDOFF (FINISHED) 1" WIDE 60" LONG INSULATED.
		INSULATION FOR TOP OF HOOD.
		INSULATION FOR BACK OF HOOD.
		LEFT WALL AS END PANEL.
2	Hood-Right	FIELD WRAPPER 18.00" HIGH FRONT, RIGHT.
		INSULATION FOR TOP OF HOOD.
		INSULATION FOR BACK OF HOOD.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 84" HIGH INSULATED 430 SS.

PERFORATED SUPPLY PLENUM(S)

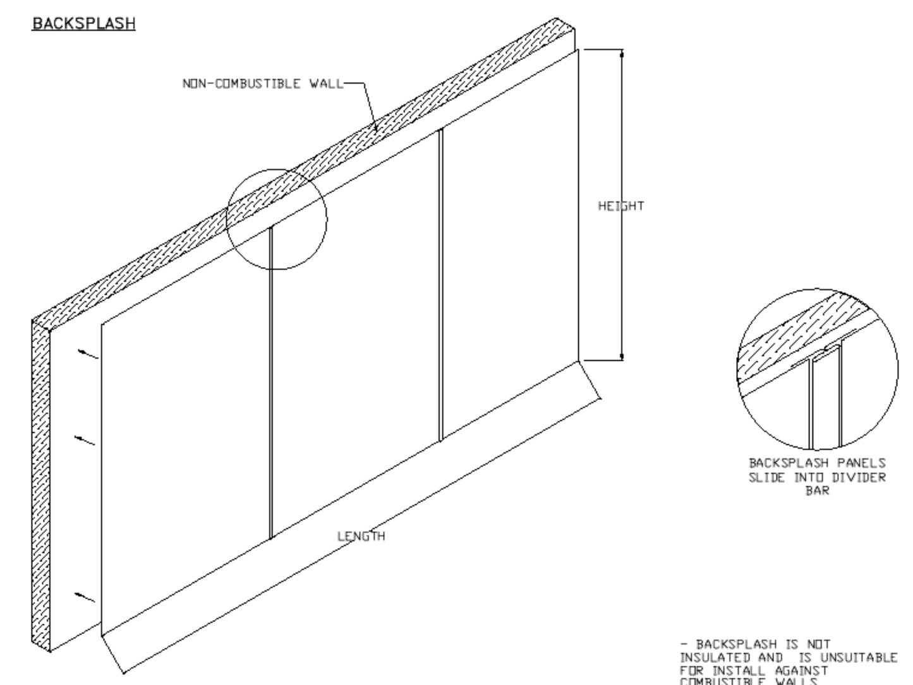
HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S) WIDTH	LENG	DIA	CFM	SP
1	Hood-Left	Front	117"	18"	6"	MUA	12"	28"		648	0.160"
						MUA	12"	28"		648	0.160"
						MUA	12"	28"		648	0.160"
2	Hood-Right	Front	129"	18"	6"	MUA	12"	28"		648	0.160"
						MUA	12"	28"		648	0.160"
						MUA	12"	28"		648	0.160"

CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	*CLEARANCE
1	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	0"
	RIGHT	18"
2	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	18"
	RIGHT	0"

- *0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

BACKSPLASH



- BACKSPLASH IS NOT INSULATED AND IS UNSUITABLE FOR INSTALL AGAINST COMBUSTIBLE WALLS

NOTE: LENGTH OF S/S BACKSPLASH PROVIDED IS FOR LENGTH OF HOOD ONLY; ANY ADDITIONAL S/S PANELING NEEDED IS OUTSIDE OF CAPTIVEAIRE'S SCOPE TO BE PROVIDED BY OTHERS

SYSTEM DESIGN VERIFICATION (SDV)

IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.

LISTINGS & CERTIFICATIONS

CAPTIVEAIRE HOODS BUILT IN COMPLIANCE WITH:

#3054804-001 & #3054804-002
Listed under ETL File number 3054804-001/002

GENERAL NOTES

INSTALLATION

1. ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
2. ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
3. HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
4. ALL CONNECTIONS FROM CAPTIVEAIRE HOOD PER MECHANICAL PLANS.
5. HANGING HEIGHT OF HOOD SHALL BE 84" FROM AFF TO BOTTOM OF HOOD
6. S/S BACKSPLASH SHALL BE FURNISHED BY OTHERS
7. ALL LIGHT FIXTURES SHOWN INSTALLED BY CAPTIVEAIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES ARE BY ELECTRICAL CONTRACTOR.
8. WIRING DIAGRAMS ARE CUSTOM FOR THIS LOCATION; PLEASE FOLLOW WIRING SCHEMATICS SEEN BELOW
9. SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
10. INSTALLING CONTRACTORS ASSUME ALL RELATED REPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

BALANCE

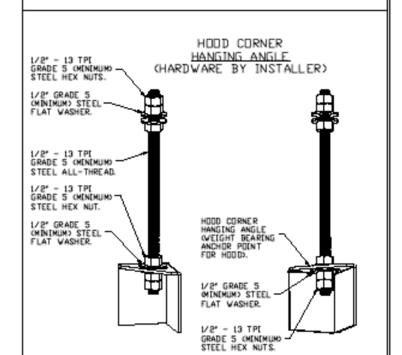
11. KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
12. KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.
13. RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

ADDITIONAL

14. WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
15. SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

HVAC DISTRIBUTION NOTE

IT IS RECOMMENDED NOT TO INSTALL HIGH VELOCITY DIFFUSERS OR HVAC RETURNS WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED, LOW-VELOCITY, NON-DIRECTIONAL DIFFUSERS ARE RECOMMENDED.



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

VERIFY CEILING HEIGHT

__' - __"

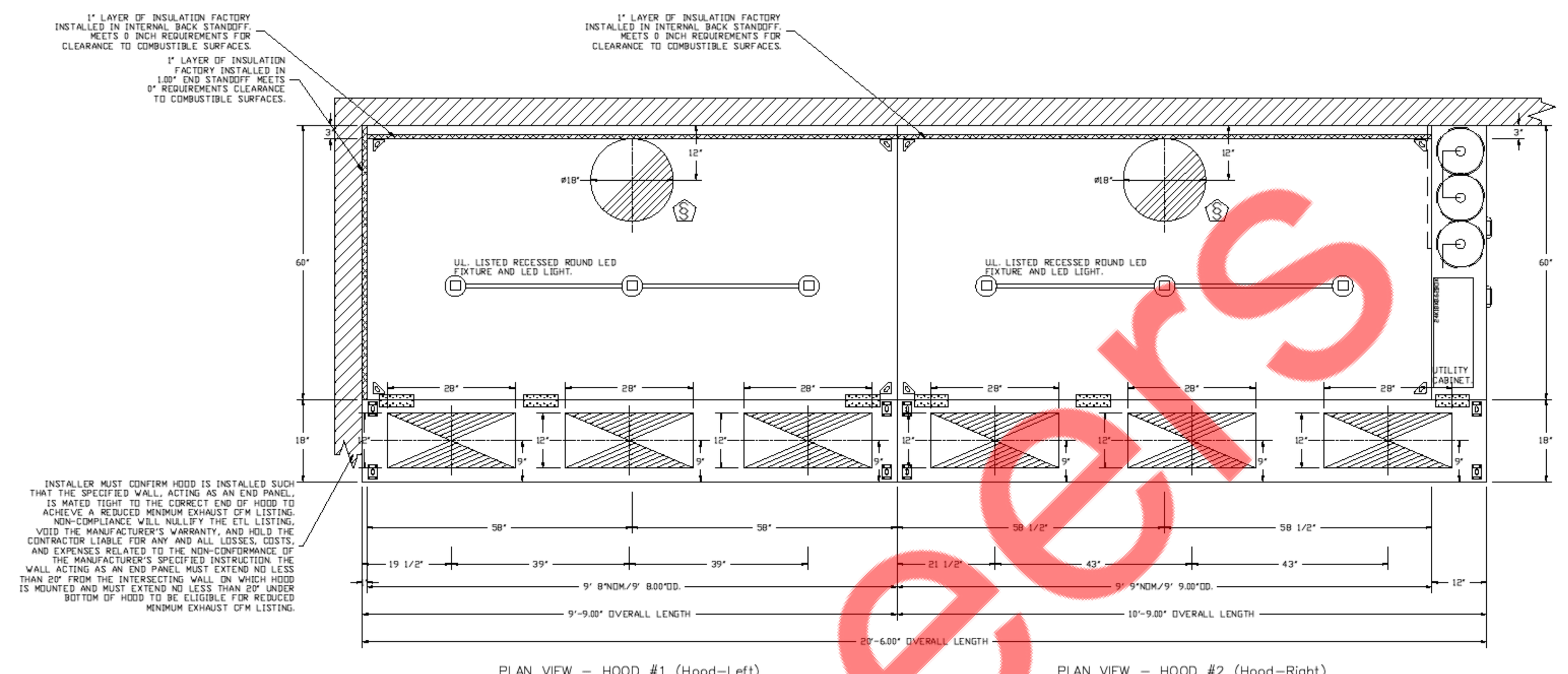
HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

REVISIONS — DESCRIPTION — DATE

econ·air — North New Jersey Mechanical — www.econair.com
78 John Miller Way, Suite 440, Kearny, NJ, 07032 PHONE: (201) 308 - 6647 FAX: 9195168752 EMAIL: reg138@econair.com

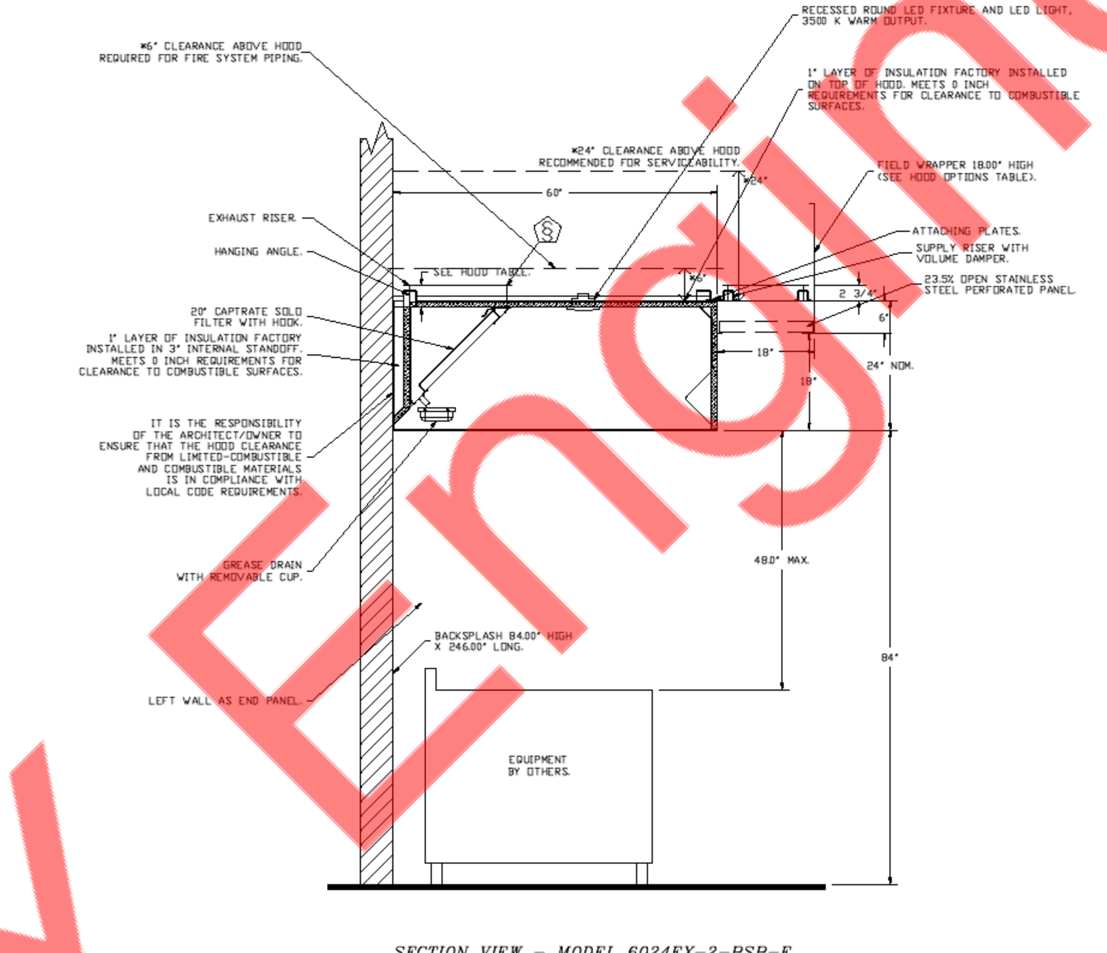
Wonder - First Street, DC

DATE: 9/23/2025
DWG.#: 8254590
DRAWN BY: JK-138
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 1

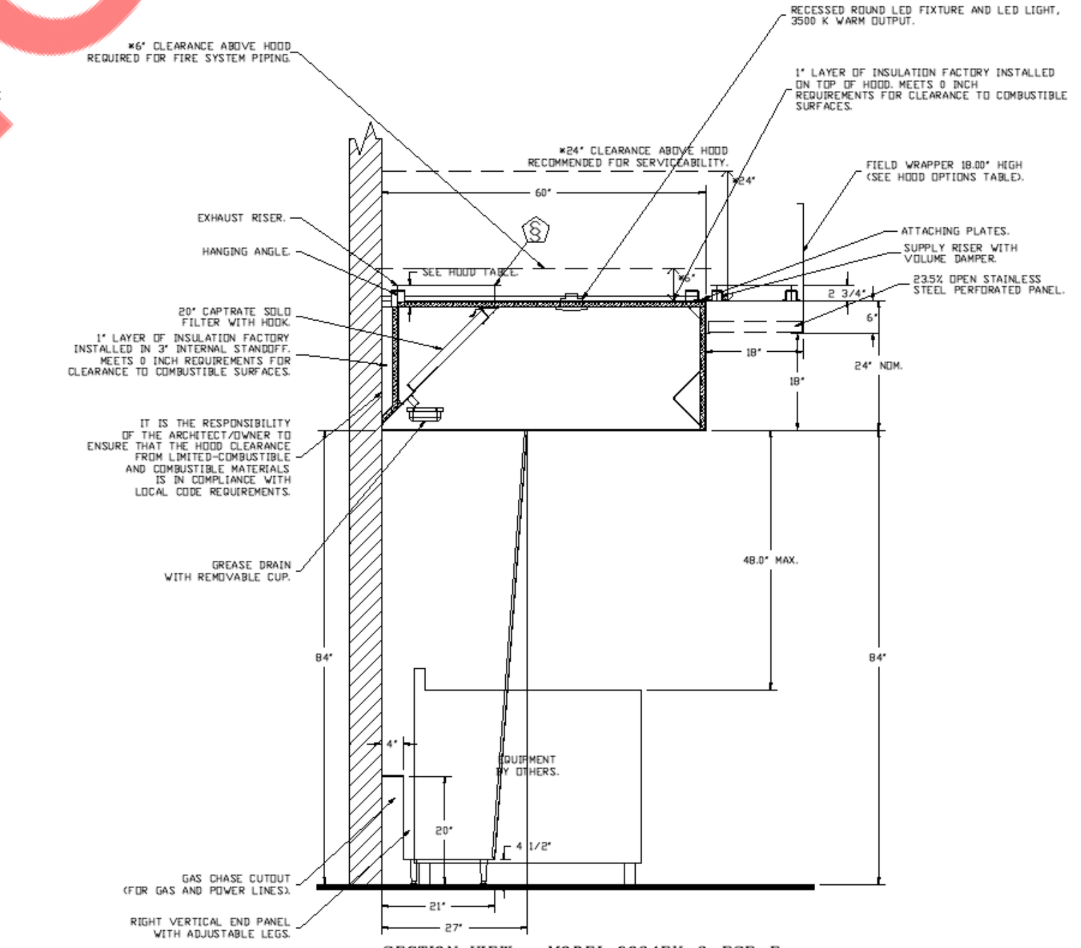


PLAN VIEW – HOOD #1 (Hood-Left)
9' 8.00" LONG 6024EX-2-PSP-F

PLAN VIEW – HOOD #2 (Hood-Right)
9' 9.00" LONG 6024EX-2-PSP-F

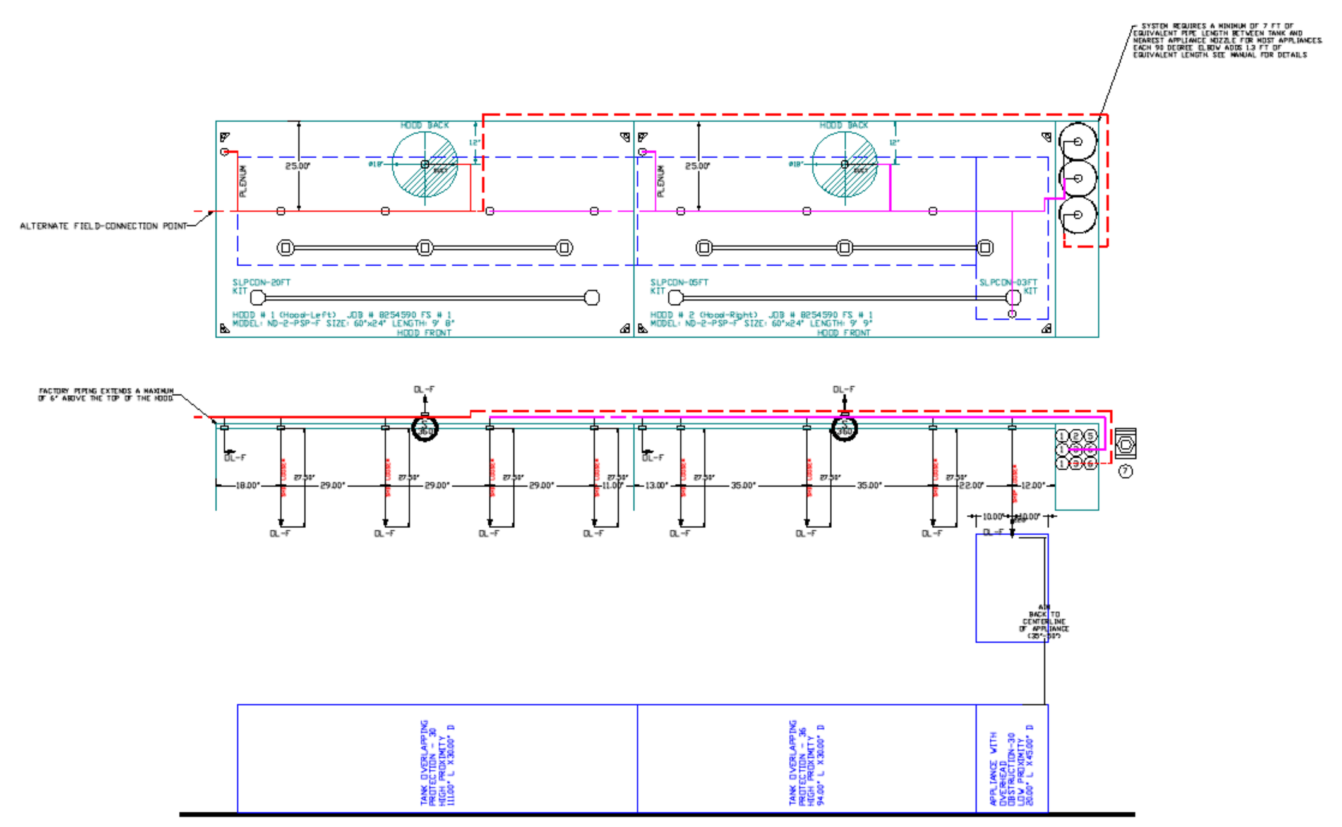


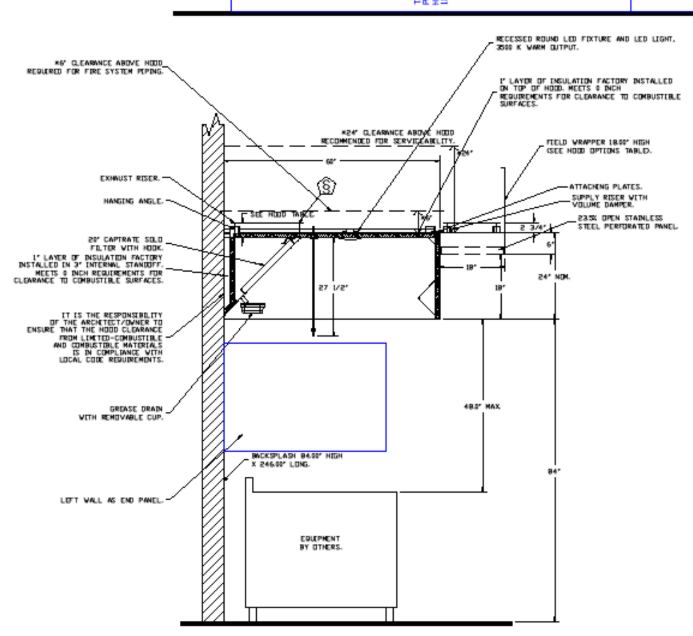
SECTION VIEW – MODEL 6024EX-2-PSP-F
HOOD – #1 (Hood-Left)



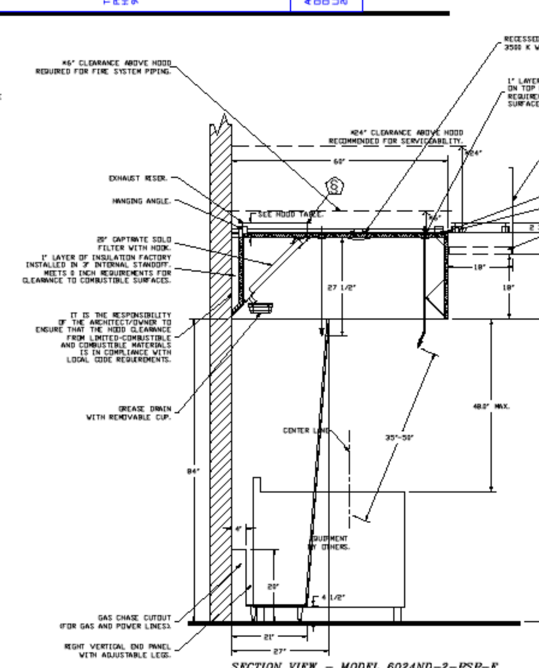
SECTION VIEW – MODEL 6024EX-2-PSP-F
HOOD – #2 (Hood-Right)

SHEET NO. 2





SECTION VIEW – MODEL 6024ND-2-PSP-F
HOOD – #1



SECTION VIEW – MODEL 6024ND-2-PSP-F
HOOD – #2

NOTES
- FIELD PIPE DROPS AS SHOWN
  PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.
- THIS PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.
- DL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

JOB #: 8254590.
JOB NAME: WONDER - FIRST STREET, DC.

SYSTEM SIZE: TANK-SP-3 DESIGN FP: 52. MAXIMUM FP: 60.
HOOD # 1 9' 8.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 18" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 9' 9.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 18" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

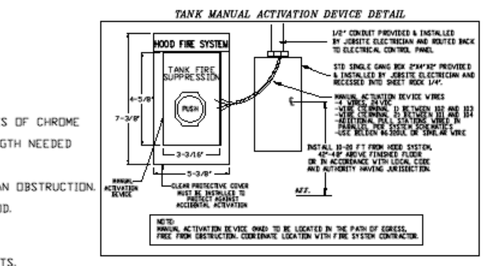
- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND – FIRE CABINET TANK SYSTEM

1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.

TANK MANUAL ACTIVATION DEVICE DETAIL



FIRE SYSTEM INFORMATION – JOB#8254590

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION SYSTEM	INSTALLATION LOCATION ON HOOD
1		TANK FS	4.0/4.0/4.0	60	52	FIRE CABINET RIGHT	RIGHT, HOOD 2

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-OT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (A0034310).	2	0
		0 - 0 - 32-00002 QUIK SEAL - 1/2" (UL).	2	0
		0 - 0 - 361091 3/8" BRASS PLUG.	5	0
		0 - 0 - 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	3	0
		0 - 0 - 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	2	0
		0 - 0 - 79425 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	5	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	2	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	3	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300033-001 DIN CONNECTOR, CANFIELD PART #5J560-201-EUDA, TANK FIRE SUPPRESSION, SUBMINATURE SOLENOID CONNECTION (CED VENDOR 30377).	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	12	0
		0 - 0 - 9055455PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	10	0
		0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.	11	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	6	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	2	0
		0 - 0 - BI145 3/8" BLACK IRON 90 ELL.	4	0
		0 - 0 - CBI-22.5 CHROME PLATED PIPE FITTING 3/8" NPT 22.5 DEGREE ELBOW.	1	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - SLPCON-03FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 2' GAP. KIT CONTAINS 5 FEET OF BLACK MG WIRE, 5 FEET OF TAN MG WIRE, 3 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - SLPCON-05FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 4' GAP. KIT CONTAINS 7 FEET OF BLACK MG WIRE, 7 FEET OF TAN MG WIRE, 5 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - SLPCON-20FT SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UPTO 19' GAP. KIT CONTAINS 22 FEET OF BLACK MG WIRE, 22 FEET OF TAN MG WIRE, 20 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	9	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	3	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	12	0
		16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	12	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	12	0
		34 - 34 - A0034331 RED COLOR - 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT.	1	0

DATE: 9/23/2025
DWG.#: 8254590
DRAWN BY: JK-138
SCALE: 1/2" = 1'-0"
MASTER DRAWING
SHEET NO. 3

EXHAUST FAN INFORMATION – JOB#8254590

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	WEIGHT (LBS)	SONES
1	KEF-1	1	EASIF20DD	ECON-AIR	4875	1.500	1486	TEFC,PREMIUM	3.000	2.0660	3	460	4.3	495	19.1

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1	1	SIF - STAINLESS STEEL HOUSING CONSTRUCTION
		1	SIF 20- SS LOW SP STRAIGHT DISCHARGE- SQUARE TO ROUND DISCHARGE ADAPTER
		1	SIF20 - INLET - STANDARD 20" DUCT CONNECTION
		1	SIF - HORIZONTAL OVERHEAD MOUNT - PRE-INSTALLED MOUNTS (11-36)
		1	HANGING SPRING VIBRATION ISOLATORS (SET OF 4), FOR INDOOR OR OUTDOOR USE WITH SQUARE INLINE FANS (HSA200)
		1	2 YEAR PARTS WARRANTY
2	MAU-1	1	EH 2 MUA CONTROLS SHEET METAL
		1	MOTORIZED BACKDRAFT DAMPER FOR A2-D HOUSING - MEETS AMCA CLASS 1A RATING
		1	TOTAL CFM MONITORING
		1	SINGLE POINT CONNECTION - ELECTRIC HEATER - THREE PHASE - BLOWER & HEATER MUST BE THE SAME VOLTAGE & PHASE. IF A NON-DCV PREWIRE IS USED ON THE EH, #28, #47, MA OR E2 PREWIRE OPTION MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	CLOGGED FILTER SWITCH - NOTIFICATION ON HMI
		1	SINGLE ELECTRICAL CABINET LED LIGHTS USED ON MODULAR MUA UNITS
		1	DISCHARGE FIRESTAT SET TO 240°F (PRE MUA)
		1	FREEZESTAT
		1	SIZE 2 ELECTRIC HEATER INDOOR HANGING OPTION. INCLUDES 2 HSA125 HANGING SPRING ISOLATORS PER UNI-STRUT
		1	INSULATION OPTION FOR VBANK FILTER SECTION
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED)
		1	LOAD REACTOR MOUNTED IN FAN
		1	VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR TEMPERED SUPPLY FAN
		1	2 YEAR PARTS WARRANTY

HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #2	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55

DATE: 9/23/2025
DWG.#: 8254590
DRAWN BY: JK-138
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 4

CONSULTANTS

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET, SUITE 49674
MIAMI, FL 33179
PH - (646) 878-9217
WWW.NY-ENGINEERS.COM

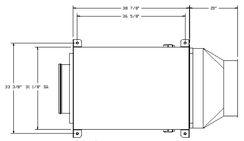
NO.	DATE	DESCRIPTION
0	10/08/2025	ISSUE FOR PERMIT
1	11/25/2025	BUILDING COMMENTS

DRAWN BY NYE
CHECKED BY NYE
ARCH. PROJECT NO.:
CDR25024.0 DESIGN ID: D3-S1-A9.E3

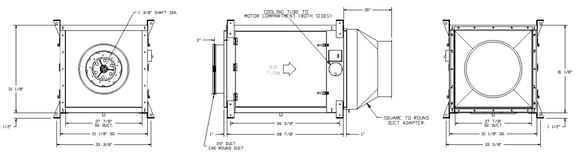
SHEET NAME
MECHANICAL HOOD SHEET

SHEET NUMBER
MH101

FAN, BI, EASYBIRD®-HESS-ULTRA - EXHAUST FAN (VST-D)



TOP VIEW



NOTES:
- RAINTRIDER USED WHEN CONNECTING TO STAINSMS DUCT.
- RAINTRIDERS ARE INSTALLED ON THE INTAKE AND/OR DISCHARGE SIDES.

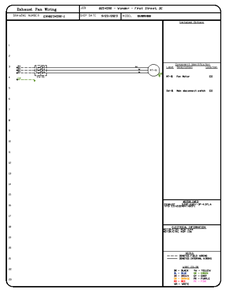
UNIVERSAL MOUNTING BRACKET
1/2" DIA THREADED ROD ONLY
7/16" DIA MOUNTING HOLE
USED WITH FLEXIBLE VIBRATION ISOLATORS.
USED WITH FLOOR VIBRATION ISOLATORS.
CAN BE RELOCATED IN THE FIELD AS NEEDED.

FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- TWO ACCESS DOORS FOR EASY ACCESS.
- TWO SPEED MOTORS NON-OVERLOADING WHEELS
- UL762 LISTING.
- AMCA 45K & 330AD CERTIFIED.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- 1 YEAR PARTS & LABOR WARRANTY.
- DRAIN MUST BE CONNECTED TO OPTIONAL GREASE BOX OR PIPED TO GREASE RESERVOIR (RECOMMENDED).

OPTIONS

- 50" - STAINLESS STEEL HOUSING.
CONSTRUCTION.
- ADAPTER - 29" SQ. TO 29" STRAIGHT DISCHARGE - SQUARE TO ROUND DISCHARGE ADAPTER.
- ADAPTER - INLET - STANDARD 29" DUCT CONNECTION.
- 29" - HORIZONTAL OVERHEAD MOUNT -
- 29" - VERTICAL MOUNT -
- HANGING SPRING VIBRATION ISOLATORS.
- VBS 10 GAL. TIP BUCKET OF OUTDOOR USE WITH 4-20MA OUTPUT (SHIPPED LOOSE).
- 2 YEAR PARTS WARRANTY.

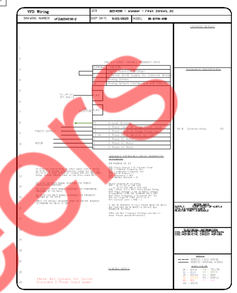


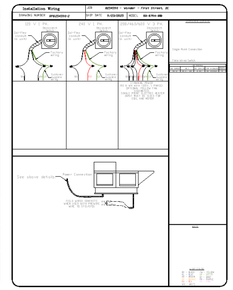
MUA FAN INFORMATION - JOB#8254590

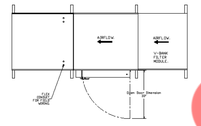
FAN UNIT NO.	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	WEIGHT (LBS)	SONES
1	MAU-1	1	EZ-EF34-203	20MF-2-MDS	AD-EF34	2000	3900	1.500	1674	ODP,PREMIUM	5.000	4.7570	3	460	6.8	96.94	100A	809	17.5

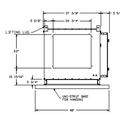
ELECTRIC MAKE-UP AIR UNIT(S)

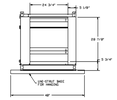
FAN UNIT NO.	TAG	DSGN KW'S	MAX KW'S	PHASE	VOLTS	AMPERAGE	TEMP RISE	OUTPUT BTUH
2	MAU-1	57	73	3	460	87.8	45 °F	249149

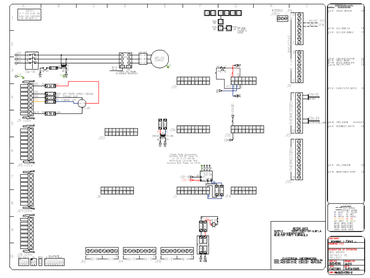












ELECTRICAL PACKAGE - JOB#8254590

NO	TAG	PACKAGE #	LOCATION	SWITCHES LOCATION	SWITCHES QUANTITY	OPTION	FANS CONTROLLED FANS TAG	FANS CONTROLLED T-STAT	FANS CONTROLLED #	FANS CONTROLLED HP	FANS CONTROLLED VOLTS/PH
1		SC-3500394	UTILITY CABINET RIGHT	UTILITY CABINET HOOD # 2	1 LIGHT 1 FAN	SMART CONTROL & THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	KEF-1	EXHAUST	3	3.000	460 4.3

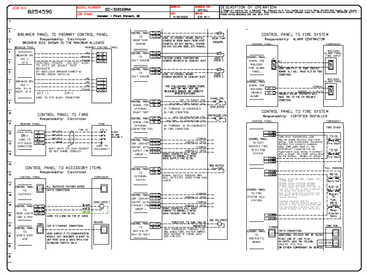
CATSmd Monitor and Control

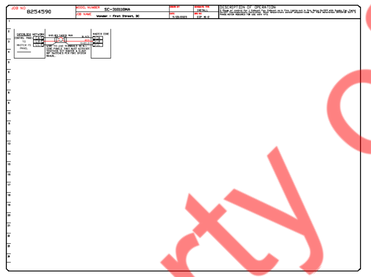
...fixed control point to which all monitored and controlled Building Management Systems (BMS) or Wind Head End/or Monitoring System is hooked, and from perspective outlined in ASHRAE is the point for...
...Monitoring System (MMS) or Wind Head End/or Monitoring System is used primarily related to ASHRAE is the primary for...
...Building Management Systems (BMS) or Wind Head End/or Monitoring System to implement ASHRAE 62/90/189 control strategies for fully integrated Building Management.

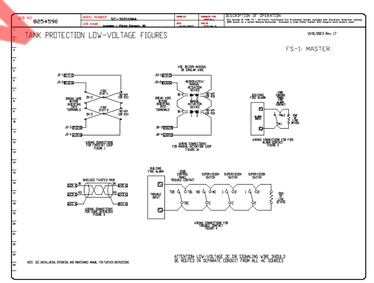
MONITORING AND CONTROL POINTS LIST

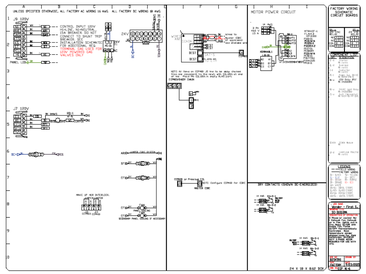
AHU Package	Flexible
Fan Temperature	alarms
Fan Temperature2	alarms
AHU Package Temperature	alarms
Grease AHU Package Temperature	alarms
Fan Alarm	alarms
Fan Change	alarms
Fan Fault	alarms
FAU Alarm	alarms
Controller Alarm	alarms
Fan Alarm	alarms
Fan Change	alarms
Fan Fault	alarms
FAU Alarm Big Parameter	alarms
Fan Condition	alarms
Fan Alarm	alarms
Fan Change	alarms
Fan Fault	alarms
FAU Alarm Big Parameter	alarms
Fan Condition	alarms
Fan Alarm	alarms
Fan Change	alarms
Fan Fault	alarms
Fan Alarm	alarms
Light Alarm	alarms
Fan Alarm	alarms

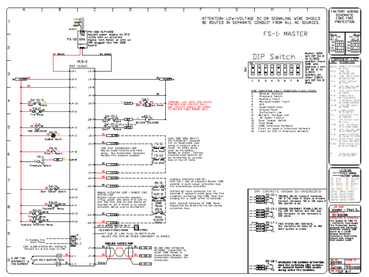
AP Package	Points
Fan Temperature	alarms
Fan Temperature2	alarms
AHU Package Temperature	alarms
Grease AHU Package Temperature	alarms
Controller Alarm	alarms
Fan Change	alarms
Fan Fault	alarms
Controller Alarm	alarms
Fan Condition	alarms
Fan Alarm	alarms
Fan Change	alarms
Fan Fault	alarms
FAU Alarm Big Parameter	alarms
Fan Condition	alarms
Fan Alarm	alarms
Light Alarm2	alarms & points
Fan Alarm	alarms & points











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Wonder - First Street, DC

DATE:	9/23/2025
DWG.#:	8254590
DRAWN BY:	JK-138
SCALE:	3/4" = 1'-0"
MASTER DRAWING	
SHEET NO.	6
	7
	8

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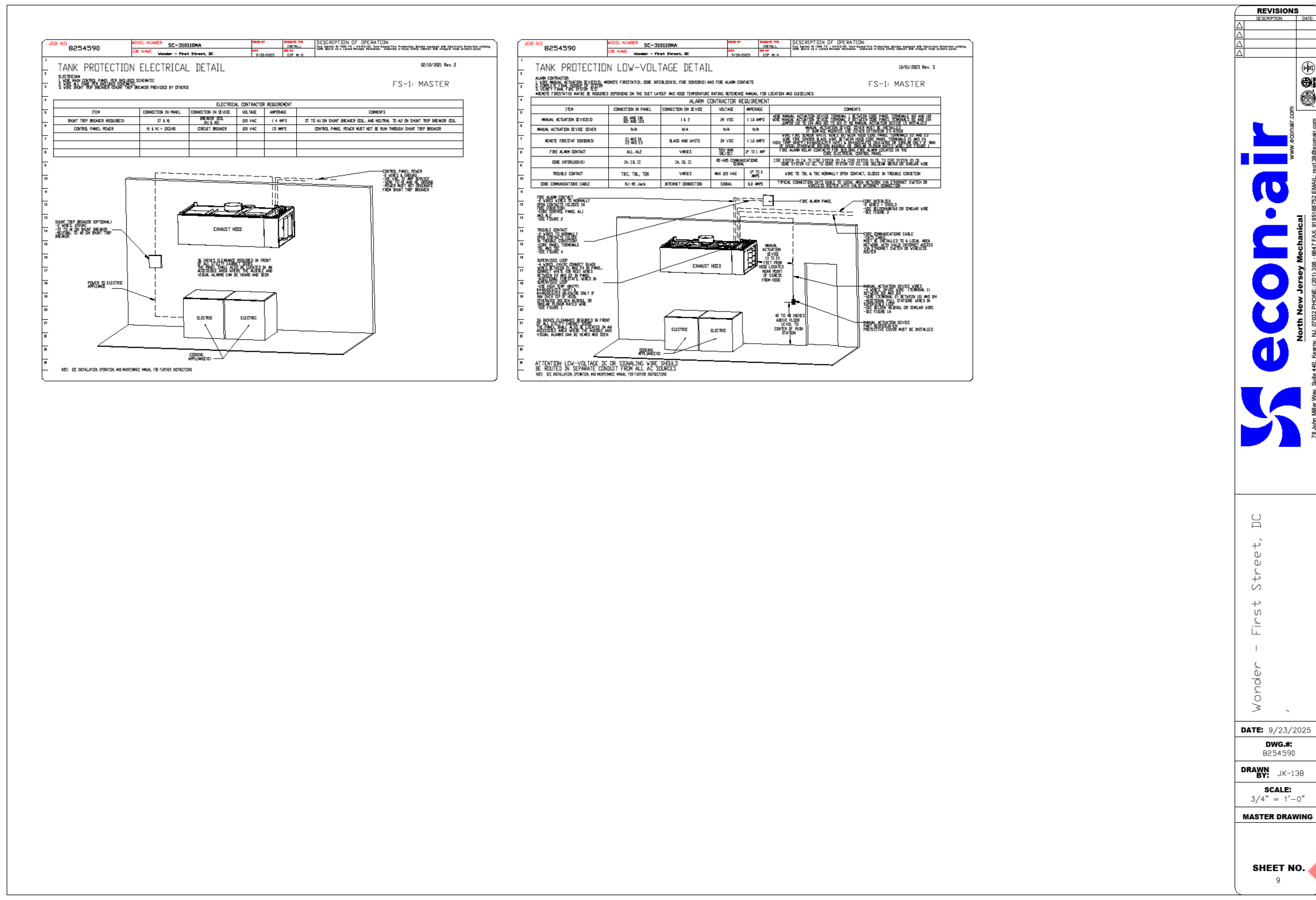
SHEET NAME
MECHANICAL HOOD SHEET

SHEET NUMBER
MH102



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SHEET NAME

MECHANICAL HOOD SHEET

SHEET NUMBER

MH103

ELECTRICAL SYMBOLS LEGEND

FUSED DISCONNECT	QUAD DATA TELEPHONE FLOOR	CIRCUIT CONCEALED IN WALL OR CEILING			
NON-FUSED DISCONNECT	DATA / TELEPHONE BOX	CIRCUIT EXPOSED			
JUNCTION BOX WALL / CEILING	$ SWITCH, SINGLE POLE TOGGLE	LOW VOLTAGE 2 CIRCUIT WIRE			
SIMPLEX RECEPTACLE	$3 SWITCH, 3-WAY TOGGLE	EXIT FIXTURE, CEILING / WALL MOUNTED			
DUPLEX RECEPTACLE	$OS SWITCH, OCCUPANCY SENSOR	EMERGENCY FIXTURE			
DUPLEX CEILING	$M HORSEPOWER RATED MANUAL MOTOR STARTER	HIGHBAY FIXTURE			
DUPLEX CEILING ISOLATED GROUND	OS SWITCH, OCCUPANCY SENSOR CEILING MOUTNED	STRIP FIXTURE			
ISOLATED GROUND RECEPTACLE	OS SWITCH, OCCUPANCY SENSOR WALL MOUNTED	2X4 TROFFER FIXTURE			
GFCI RECEPTACLE	PUSH BUTTON				
GFCI WP RECEPTACLE	PC PHOTOCELL				
DUPLEX WALL ISOLATED GROUND GFCI	BUZZER				
QUAD WALL ISOLATED GROUND	KP KEYPAD				
QUAD WALL	SECURITY CAMERA				
NEMA SPECIALTY RECEPTACLE	BULLET CAMERA				
DUPLEX WALL HORIZONTAL ISOLATED GROUND	SPEAKER				
DUPLEX WALL HORIZONTAL	FP FIRE ALARM PULL STATION				
QUAD CEILING	FIRE ALARM, WALL MOUNT STROBE				
FLOOR DUPLEX	FIRE ALARM, CEILING MOUNT STROBE				
DUPLEX FLOOR ISOLATED GROUND	FAAP FIRE ALARM ANNUNCIATOR PANEL				
QUAD FLOOR	FACP FIRE ALARM CONTROL PANEL				
DUPLEX DATA FLOOR	POWER POLE				

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS MAY APPEAR ON PLANS

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR	NL	NIGHT LIGHT
AHU	AIR HANDLER UNIT	NTS	NOT TO SCALE
CLG.	CEILING	P.O.S.	POINT OF SALE
C.B.	CIRCUIT BREAKER	PWR	POWER
CKT	CIRCUIT	RL	RELOCATED
CU	CONDENSING UNIT	RTU	ROOF TOP UNIT
EX	EXISTING TO REMAIN	T/C	TIMECLOCK
EF	EXHAUST FAN	TYP	TYPICAL
EM	EMERGENCY	U.N.O.	UNLESS NOTED OTHERWISE
FA	FIRE ALARM	WP	WEATHER PROOF
FACP	FIRE ALARM CONTROL PANEL	XFMR	TRANSFORMER
FLA	FULL LOAD AMPS	HD	HAND DRYER
G.	GROUND		
GFI	GROUND FAULT CIRCUIT INTERRUPTER		
HP	HORSEPOWER		
IG	ISOLATED GROUND		
LL	LANDLORD		
LTG	LIGHTING		
MCA	MINIMUM CIRCUIT AMPACITY		
MOCP	MAXIMUM OVERCURRENT PROTECTION		
N.I.C.	NOT IN CONTRACT		

WORK IN EXISTING BUILDINGS

A. EXISTING CONDITIONS: DOCUMENT THE EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF WORK. COMMENCEMENT OF WORK INDICATES CONTRACTOR'S ACCEPTANCE OF EXISTING CONDITIONS. PROTECT EXISTING TO REMAIN CONSTRUCTION FROM DAMAGE. REPAIR DAMAGE CAUSED BY CONTRACTOR IN THE EXECUTION OF THE WORK.

B. COORDINATION: ARRANGE TO SHUT OFF UTILITIES WITH UTILITY COMPANIES. IF SERVICES/SYSTEMS ARE REQUIRED TO BE REMOVED, RELOCATED, OR ABANDONED, PROVIDE TEMPORARY SERVICES/SYSTEMS THAT BYPASS AREA OF SELECTIVE DEMOLITION AND THAT MAINTAIN CONTINUITY OF SERVICES/SYSTEMS TO OTHER PARTS OF BUILDING.

C. UTILITIES: MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. MAINTAIN UTILITIES FOR FIRE-PROTECTION SERVICES DURING SELECTIVE DEMOLITION OPERATIONS.

D. UTILITY AND SERVICES INTERRUPTIONS: DO NOT INTERRUPT UTILITIES AND SERVICES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED, PLANNED AND SCHEDULED WITH PARTIES INVOLVED. PROVIDE BACKUP UTILITIES AND SERVICES FOR CRITICAL FUNCTIONING AREAS DEFINED IN THE CONTRACT DOCUMENTS.

E. NOISE, VIBRATION, AND ODORS: COORDINATE OPERATIONS THAT MAY RESULT IN HIGH LEVELS OF NOISE AND VIBRATION, ODORS, OR OTHER DISRUPTION TO OWNER OCCUPANCY WITH OWNER.

F. DEMOLITION: PERFORM DEMOLITION WORK AS INDICATED IN THE CONTRACT DOCUMENTS. INCLUDE CHARGES AND FEES FOR DISPOSAL OF WASTE IN BID PRICE. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION. DEMOLITION WASTE BECOMES PROPERTY OF CONTRACTOR. STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE IS NOT PERMITTED.

G. FLAME-CUTTING OPERATIONS: MAINTAIN WORK AREA CLEAR OF FLAMMABLE MATERIALS. PROVIDE FIRE-SUPPRESSION DEVICES AND PROVIDE FIRE WATCH DURING SUCH OPERATIONS.

H. HAZARDOUS MATERIALS: EXCEPT AS OTHERWISE ADDRESSED IN THE CONTRACT DOCUMENTS, HAZARDOUS MATERIALS ARE NOT ANTICIPATED AND ARE NOT EXPECTED TO BE ENCOUNTERED IN THE WORK. IF SUSPECTED HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; CEASE WORK AND IMMEDIATELY NOTIFY ENGINEER.

J. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS.

K. EXISTING WARRANTIES: REMOVE, REPLACE, PATCH, AND REPAIR MATERIALS AND SURFACES CUT OR DAMAGED DURING SELECTIVE DEMOLITION, BY METHODS AND WITH MATERIALS AND USING APPROVED CONTRACTORS SO AS NOT TO VOID EXISTING WARRANTIES. CONFER WITH OWNER AS TO THOSE ITEMS WITH EXISTING WARRANTIES.

L. SYSTEMS AND EQUIPMENT NOT SHOWN: CONTACT THE ENGINEER FOR DIRECTION ON THE DISPOSITION OF THOSE ITEMS.

GENERAL NOTES

1. FURNISH AND INSTALL ALL MATERIALS, EQUIPMENT, AND LABOR, FOR A COMPLETE INSTALLATION IN ALL RESPECTS, READY FOR INTENDED USE AND IN STRICT ACCORDANCE WITH NEC, NESC, STATE, AND LOCAL CODES, AND MANUFACTURER'S RECOMMENDATIONS. PAY ALL NECESSARY FEES AND PERMITS.
   A. NO CIRCUITRY SHALL BE ALLOWED TO BE ROUTED ACROSS THE ROOF OR THE EXTERIOR SIDE OF THE EXTERIOR WALLS.
   B. ALL EQUIPMENT SHALL BE UL LISTED WHERE APPLICABLE.
   C. CONTRACTOR SHALL VERIFY ALL WALL FINISH THICKNESSES BEFORE INSTALLING BOXES. FURNISH AND INSTALL EXTENDED BOXES OR BOX EXTENDERS WHERE REQUIRED.
   E. CONTRACTOR SHALL VERIFY THAT ALL AFFECTED PANELBOARDS HAVE CIRCUIT BREAKER KNOCKOUTS PROPERLY COVERED AND THAT ALL TRIM IS IN GOOD CONDITION, ALLOWING NO ACCESS TO LIVE PARTS.
2. PROVIDE SEALS AT RACEWAY PENETRATIONS AS FOLLOWS:
   A. FIRE RATED WALLS: SEAL PER SPECIFICATIONS FOR FIRE STOPPING.
   B. NEUTRALIZATION AREA: SEAL PER MECHANICAL DETAIL.
   C. FREEZER/COOLER BOXES: SEAL WITH EXPANDING FOAM SEALANT.
   D. EXTERIOR: REFER TO ARCHITECTURAL DOCUMENTS FOR SEALING REQUIREMENTS AT ALL EXTERIOR MOUNTED DEVICES, FIXTURES, ENCLOSURES, AND RACEWAY PENETRATIONS.
3. PROVIDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR (SIZE PER NEC) IN PVC TYPE CONDUIT, POWER CIRCUITS, ISOLATED GROUND CIRCUITS, OR AS SHOWN ON PLANS. CONDUIT SHALL BE SIZED PER NEC BASED ON THWN 600 VOLT COPPER SINGLE CONDUCTORS, PLUS THE EQUIPMENT GROUNDING CONDUCTOR.
4. WIRING DEVICES: DEVICE MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO CENTER OF OUTLET BOX UNLESS NOTED OTHERWISE ON PLANS. COORDINATE THE STANDARD MOUNTING HEIGHTS WITH MASONRY:
   A. SWITCHES +48"
   B. RECEPTACLES +18"
   C. VOICE/DATA +18"
5. WIRING SHALL INCLUDE FINAL CONNECTION TO ALL EQUIPMENT IN CONFORMANCE WITH EQUIPMENT SUPPLIER WIRING DIAGRAMS.
6. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPLETE PANELBOARD IDENTIFICATION SCHEDULES FOR PANELBOARDS AFFECTED BY REMODEL.
7. NEW OVERCURRENT PROTECTIVE DEVICES INSTALLED IN EXISTING PANELBOARDS OR DISTRIBUTION BOARDS SHALL MATCH THE TYPE AND AIC RATING OF EXISTING OVERCURRENT PROTECTIVE DEVICES.
8. BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG UNLESS NOTED OTHERWISE IN SCHEDULES. WHERE 20A BRANCH CIRCUITS HAVE #8 AND LARGER WIRE SPECIFIED, #10 AWG WIRE SHALL BE USED FOR THE FINAL CONNECTION (15-FT MAXIMUM).
9. WHERE BRANCH CIRCUITS ARE GROUPED, SIZE CONDUIT AND DERATE CURRENT CARRYING CONDUCTORS PER NEC.
10. SUPPORTS FROM STRUCTURE: NO ATTACHMENT OF ANY TYPE SHALL BE MADE TO BRIDGING OR JOIST WEB MEMBERS. UTILIZE ONLY THE TOP AND BOTTOM CHORDS FOR SUPPORTING THE ELECTRICAL SYSTEM INSTALLATIONS.
11. DEVICES SHOWN ON COOLER/FREEZER PANELS SHALL BE SURFACE MOUNTED UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL DOCUMENTS FOR CONDUIT INSTALLATION AND SEALING REQUIREMENTS.
12. ONLY FEEDER CIRCUITS NOTED ON THE ONE LINE DIAGRAM AND BRANCH CIRCUITS NOTED BY LEGEND SHALL BE INSTALLED UNDER SLAB. ALL OTHER FEEDER AND BRANCH CIRCUITS SHALL BE INSTALLED OVERHEAD. PROVIDE EXTERIOR COATED GRC BENDS ON ALL CONDUIT RUNS THAT HAVE 45 DEGREE BENDS OR GREATER. REF SPECIFICATIONS.
13. SEISMIC ZONE REQUIREMENTS: PROVIDE EXPANSION COUPLINGS AND BRACING FOR ELECTRICAL EQUIPMENT AS REQUIRED BY LOCAL CODES.
14. EXISTING ELECTRICAL AND ALARM:
   A. WHERE DEMOLITION OR NEW CONSTRUCTION INTERRUPTS EXISTING ELECTRICAL CIRCUITS FEEDING EXISTING EQUIPMENT, DEVICES, OR LIGHTING TO REMAIN, BUT NOT SHOWN ON DRAWINGS, PROVIDE LABOR AND MATERIALS TO REWORK CIRCUITRY, AS REQUIRED, TO MAINTAIN EXISTING OPERATION.
   B. IF DEMOLITION OR NEW CONSTRUCTION WILL DISRUPT EXISTING UNDERGROUND SERVICES (ELECTRICAL, TELEPHONE, PARKING LOT LIGHTING CIRCUITRY, ETC.) PROVIDE ALL MATERIALS AND LABOR AS REQUIRED TO REROUTE, SLEEVE, OR OTHERWISE REWORK THESE SERVICES TO MAINTAIN THEIR EXISTING OPERATION.
   C. EXERCISE CAUTION AROUND ALARM AND SECURITY CABLES DURING DEMOLITION AND CONSTRUCTION. PROTECT ALARM AND SECURITY CABLES FROM ACCIDENTAL DAMAGE SO THAT SYSTEMS REMAIN OPERATIONAL AT ALL TIMES.
   D. DISPOSE OF ALL REMOVED MATERIALS, UNLESS OTHERWISE NOTED.
15. EXISTING ELECTRICAL DEMOLITION:
   A. GENERAL: REMOVE OR RELOCATE EXISTING ELECTRICAL EQUIPMENT CONDUIT, AND CONDUCTORS AS INDICATED ON THE DRAWINGS, OR ONLY AS REQUIRED BY DEMOLITION. REMOVE ALL PANELBOARDS, DISCONNECT SWITCHES, BOXES, RELAYS, TIME SWITCHES, LIGHTS, DEVICES, ETC., WHICH WILL NOT BE REUSED.

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ARCH. PROJECT NO.:

CDR25024.0 DESIGN ID: D3-51-49.E3

SHEET NAME

ELECTRICAL SYMBOLS, NOTES, SPECIFICATIONS

SHEET NUMBER

E001

LIGHT FIXTURE SCHEDULE

TYPE MARK	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	VOLTAGE	WATTAGE	MOUNTING
EF	LITHONIA LIGHTING	HGX LED 2RH ALO 40K 120 MO WH M2	MOTION DETECTION FLOOD LIGHT	120	25.0	SURFACE
EG	SURE LITES	APWR2	EGRESS LIGHT	120	0.7	SURFACE
EL-1	SURE LITES	APCH7R	EXIT SIGN (SINGLE FACE)	120	0.8	CEILING / WALL
EL-2	SURE LITES	APC7R	EXIT SIGN (DOUBLE FACE WITH DIRECTIONAL SIGN)	120	3.0	SURFACE
EM2	RADIUS SERIES	MRD-WL-IHB-LED	LED BUGEYE FIXTURE	120	3.0	CEILING / WALL
F1	TOPAZ	PL24-50WPCTS-D	24IN X 24IN DROP IN	120	30.0	CEILING / WALL
F1-EM	TOPAZ	PL22-30WPCTS-D; BEL5/120-277V-92	24IN X 24IN DROP IN (EMERGENCY)	120	30.0	CEILING / WALL
F1E	TOPAZ	PL22-35WPCTS-D; BEL5/120-277V-92	2X2 LED EMERGENCY	120	30.0	RECESSED
F2	ENVISION LED	LED-SL-PNL-6R-14W-5CCT-0/10V-WH	6" DIAMETER RECESSED LED DOWNLIGHT	120	14.0	CEILING / WALL
F2 EM	ENVISION LED	LED-SL-PNL-6R-14W-5CCT-0/10V-WH-LED-EMB-15W-HV-0/10V-2P	RECESSED CAN, 6" (EMERGENCY)	120	14.0	CEILING / WALL
F2-EM	ENVISION LED	LED-SL-PNL-6R-14W-5CCT-0/10V-WH-LED-EMB-15W-HV-0/10V-2P	6" DIAMETER RECESSED LED DOWNLIGHT WITH EMERGENCY BATTERY BACKUP	120	14.0	RECESSED
F3	JUNO	IC1 LED (G4 06LM) MVOLT ZT10	4" DIAMETER RECESSED LED DOWNLIGHT	120	11.5	RECESSED
F5	HUDSON VALLEY LIGHTING GROUP	1508-AGB	DECORATIVE LED PENDANT	120	75.0	PENDANT
F6 ALT	CEDAR & MOSS	AMELIE ROD 6" PENDANT, BRASS	FOH HANGING PENDANT- DOME, 6"	120	50.0	PENDANT
F7	CEDAR & MOSS	PEARL	ROUND WALL SCONCE	120	5.0	SURFACE
F12	VISUAL COMFORT	MODERN BAR LIGHT MEDIUM, SLO1011TXB-L1	EXTERIOR WALL MOUNTED GOOSENECK	120	9.0	WALL MOUNT
F13	LITHONIA	PROVIDED BY WALK-IN VENDOR	4' LINEAR VAPOR-TIGHT FIXTURE (PROVIDED BY WALK-IN VENDOR AND INSTALLED BY E.C.)	120	30.0	SURFACE
F14	RBW	COPIA SCONCE; CO-WS-S22-AA04-27-1_10V_UNV-IP20	WALL SCONCE	120	30.0	WALL MOUNT
WP	RAB	SLIM-12-W	SLIM-12-W	120	12.0	SURFACE

GENERAL NOTES

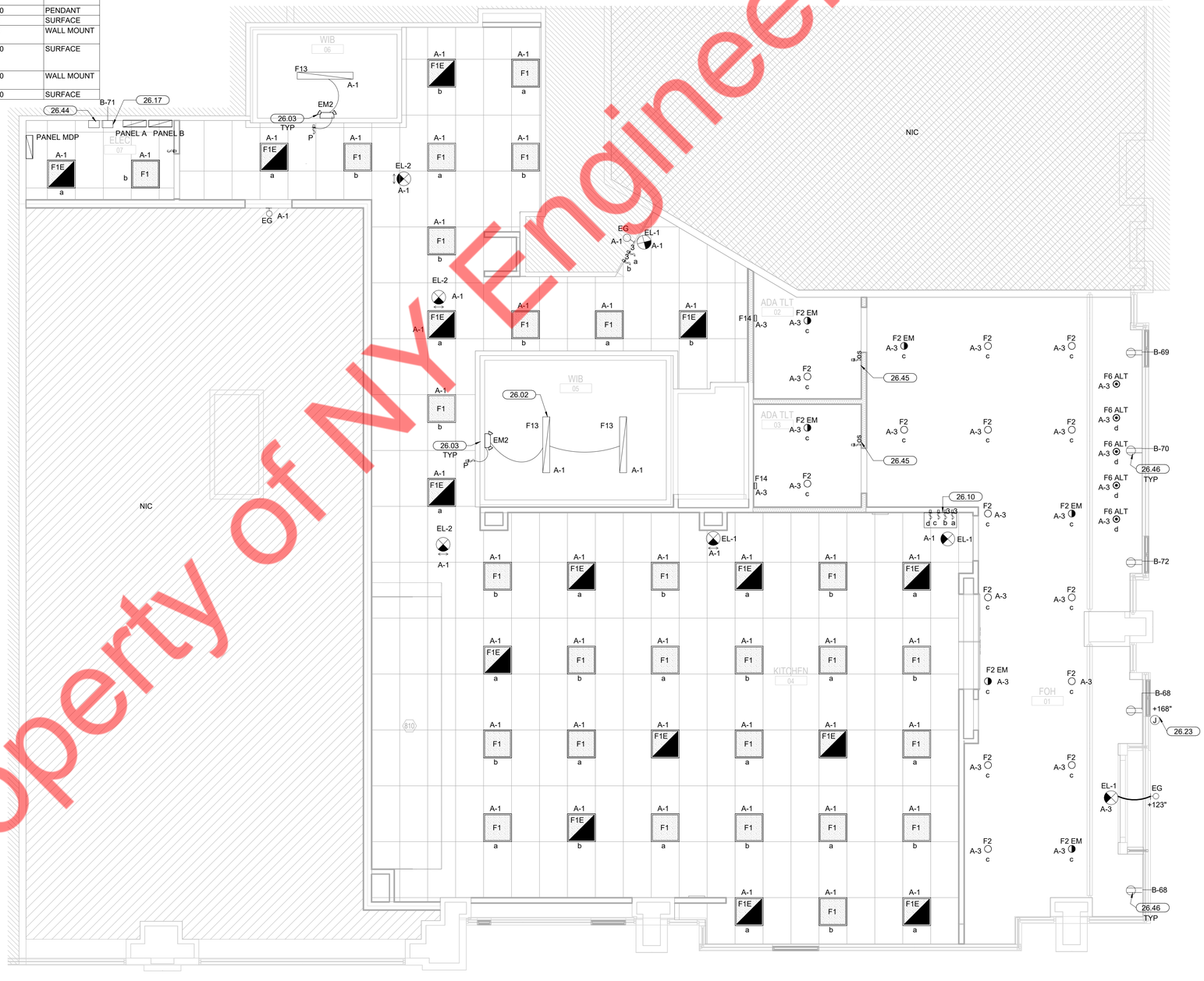
1. BRANCH CIRCUIT FEEDING THE UNIT EQUIPMENT(EMERGENCY LIGHT/EXIT SIGN WITH SELF-CONTAINED RECHARGEABLE BATTERY) SHALL BE THE SAME BRANCH CIRCUIT AS THAT SERVING THE NORMAL LIGHTING IN THE AREA AND CONNECTED AHEAD OF ANY SWITCHED.
2. ALL LIGHT SWITCHES SHALL BE MOUNTED AT 48" AFF.
3. COORDINATE WITH ARCHITECTURAL SHEETS FOR EXACT LIGHT FIXTURE LOCATIONS.
4. E.C. SHALL PROVIDE UNISTRUT AND ALL OTHER ASSOCIATED HARDWARE AS NEEDED TO SUPSEND AND SUPPORT LIGHT FIXTURES WHERE APPLICABLE.
5. G.C. TO VERIFY FINAL ELECTRICAL REQUIREMENTS OF ALL EXTERIOR SIGNAGE PRIOR TO ROUGH IN.

LIGHTING DEMO NOTES

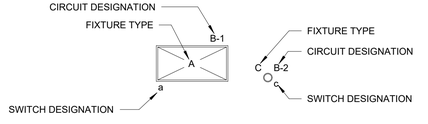
1. EXISTING SITE AND EXTERIOR BUILDING MOUNTED LIGHTING AND EMERGENCY LIGHTING IS EXISTING TO REMAIN.
2. EXISTING INTERIOR LIGHTING FIXTURES AND CONTROLS TO BE DEMOLISHED.

KEYNOTES

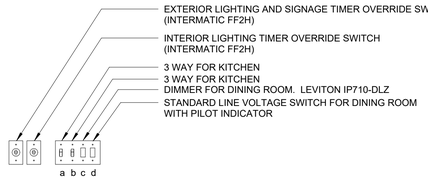
26.02	SEAL LIGHTING FIXTURES AT CEILING TO MAINTAIN COOLER/FREEZER TEMPERATURE UTILIZE SILICONE CAULK.
26.03	CONNECT EXIT SIGNS AND EMERGENCY BALLASTS TO THE UNSWITCHED LEG OF THE CIRCUIT.
26.10	SWITCH BANK LOCATION FOR LIGHTS, REFERENCE DETAIL 3/E101. E.C. SHALL LABEL EACH SWITCH FOR THE LIGHTS IN CONTROL.SWITCHES SHALL BE PILOT LIGHT TYPE.
26.17	INTERMATIC ET2725C ASTRONOMIC TIMECLOCK. REF DETAIL 1/E501 FOR ADDITIONAL SCOPE OF WORK.
26.23	PROVIDE 120V CONNECTION FOR SIGN. FIELD COORDINATE EXACT CONNECTION REQUIREMENTS AND LOCATION WITH G.C./SIGN INSTALLER. PROVIDE DISCONNECTING MEANS AS REQUIRED. CONTROLLED VIA TIMECLOCK.
26.44	LOCATION OF LIGHTING CONTACTOR CABINET. REFERENCE DETAIL 1/E501 FOR ADDITIONAL INFORMATION.
26.45	E.C. TO PROVIDE AND INSTALL WALL MOUNT VACANCY SENSOR(LEVITON ODS15-TD OR APPROVED EQUAL) FOR RESTROOM LIGHTING FIXTURES. VACANCY SENSOR SHALL BE SET TO TURN OFF AT NO MORE THAN 20 MINUTES.
26.46	PROVIDE RECEPTACLES WITHIN 18" ABOVE THE TOP OF THE SHOW WINDOW. RECEPTACLES ARE TO BE CONTROLLED BY L.C..



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



2 LIGHTING NOMENCLATURE DETAIL
NTS



3 SWITCH BANK DETAIL
12" = 1'-0"

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DESIGN ID: D3-51-A9.E3

SHEET NAME
LIGHTING PLAN

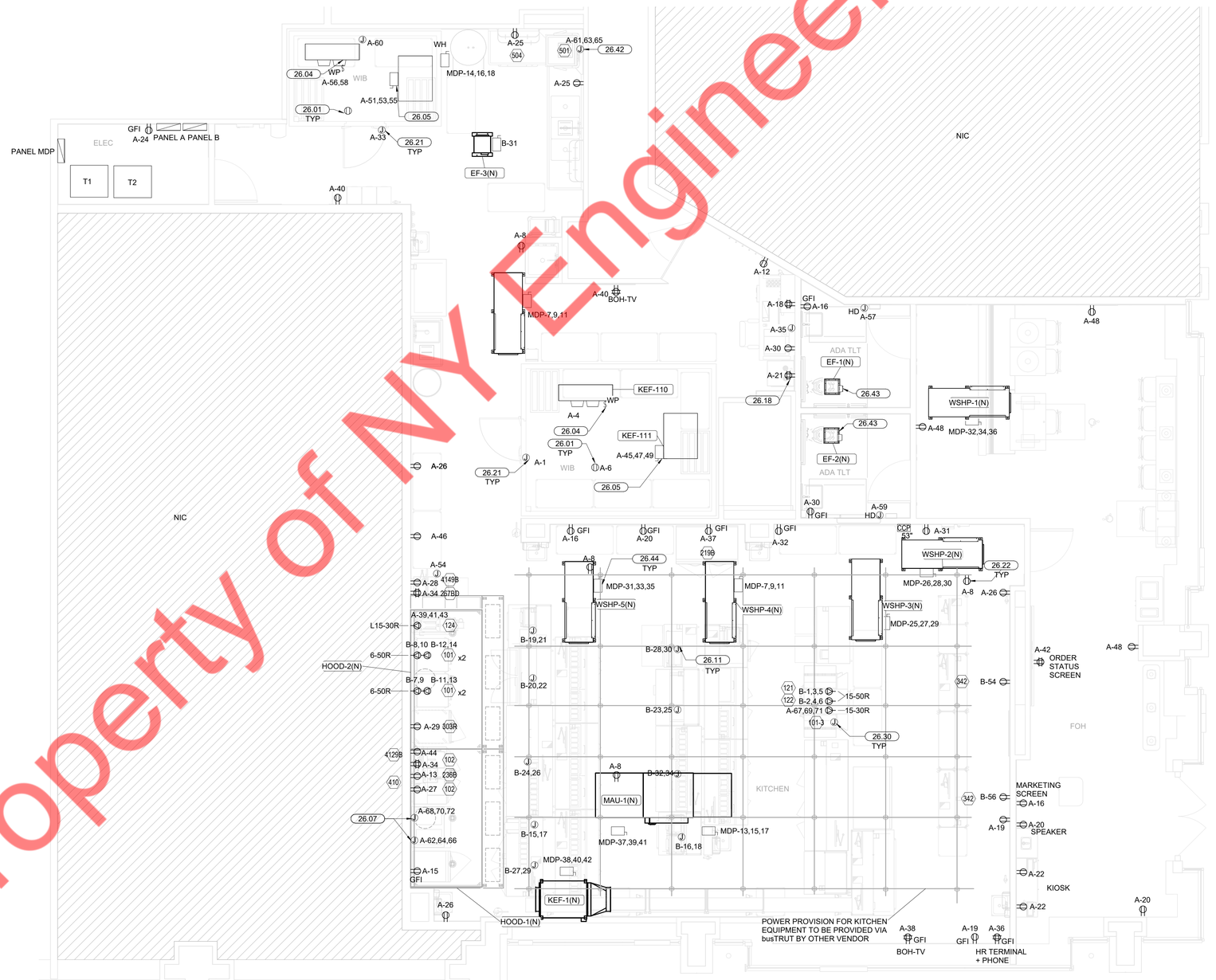
SHEET NUMBER
E101

GENERAL NOTES

1. E.C. TO REFERENCE CAPTIVE AIRE DRAWINGS FOR ADDITIONAL SCOPE OF WORK.
2. ALL WIRING IS COPPER. REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. ALL WALL MOUNTED RECEPTACLES SHALL BE RECESSED AND MOUNTED AT 18"AFF ON CENTER UNLESS NOTED OTHERWISE. REFER TO SHEET E112 FOR MOUNTING HEIGHTS.
4. SEE SPECIFICATIONS ON SHEET E901 FOR CORRECT COLOR COMBINATIONS OF RECEPTACLES ON PAINTED WALLS.
5. CONDUITS THAT ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, SUCH AS COOLERS, FREEZERS OR SERVICE ENTRANCE CONDUCTORS, SHALL BE SEALED TO PREVENT CIRCULATION OF AIR AND/OR MOISTURE. REF NEC 300.7(A).
6. E.C. SHALL PERMANENTLY AFFIX LABEL TO EACH OUTLET INDICATING CIRCUIT DESIGNATION.
7. E.C. TO REFER TO SHEET E120 FOR ADDITIONAL RECEPTACLE LOCATIONS.
8. E.C. TO REFER TO BUSSTRUT DRAWINGS FOR ADDITIONAL SCOPE OF WORK.
9. REFERENCE ARCHITECTURAL LOW VOLTAGE PLAN FOR LOW VOLTAGE EQUIPMENT SCHEDULE.
10. ALL RECEPTACLES SHALL BE CONTROLLED IN ACCORDANCE WITH ASHRAE STANDARD 90.1, SECTION 8.4.2. PROVIDE AUTOMATIC CONTROL AS REQUIRED.
11. E.C. SHALL ENSURE THAT ALL FEEDERS AND BRANCH CIRCUITS ARE INSTALLED TO LIMIT VOLTAGE DROP IN ACCORDANCE WITH ASHRAE 90.1, SECTION 8.4.1. THE VOLTAGE DROP FROM THE SOURCE TO ANY LOAD SHALL NOT EXCEED 3% FOR BRANCH CIRCUITS AND 5% FOR FEEDERS.

KEYNOTES

26.01	ELECTRICAL CONTRACTOR TO INSTALL ALL WIRING IN THIS AREA ABOVE WALK-IN COOLER AND POKE DOWN INTO ALL ELECTRICAL FIXTURES SO THAT THERE IS NO EXPOSED PIPING ON CEILING OF WALK-IN COOLER. ANY PENETRATION THAT GOES THROUGH COOLER CEILING OR WALL SHALL BE SEALED WITH SILICONE CAULK SEALANT AT TOP AND BOTTOM.
26.04	DISCONNECT SWITCHES FOR ALL EVAPORATOR UNITS IN WALK-IN'S ARE SUPPLIED,INSTALLED, AND WIRED BY THE ELECTRICAL CONTRACTOR. CONTRACTOR SHALL VERIFY FINAL LOCATION OF EVAPORATORS AND SPECIFICATIONS PRIOR TO COMMENCING WORK. SWITCHES SHALL BE WATER PROOF 20AMP/2P MOTOR RATED SNAP SWICHES. ALL SWITCHES AND OUTLETS SHALL BE MOUNTED AT THE CEILING OF THE WALK-IN. REFERENCE DETAIL 2/E501 FOR ADDITIONAL INFORMATION.
26.05	EQUIPMENT FURNISHED WITH NON-FUSED DISCONNECT IN A NEMA-3R WEATHERPROOF ENCLOSURE. E.C. SHALL MAKE ELECTRICAL CONNECTIONS.
26.07	JUNCTION BOX FOR FRYERS. E.C. TO PROVIDE LFMC CONNECTION TO FRYER.
26.11	E.C. TO MAKE FINAL ELECTRICAL CONNECTIONS TO BUSSTRUT SYSTEM. E.C. TO REFER TO BUSS TRUT PLANS FOR ADDITIONAL INFORMATION.
26.18	CONTRACTOR SHALL PROVIDE RACEWAY OR ROUGH INS AS NEEDED TO EXTEND NEW IT SERVICE TO OFFICE. COORDINATE REQUIREMENTS WITH OWNER AND IT SERVICE PROVIDER.
26.21	ELECTRICAL REQUIREMENTS FOR WALK-IN DOOR ARE SUPPLIED, INSTALLED, AND WIRED BY THE ELECTRICAL CONTRACTOR. CONTRACTOR SHALL VERIFY FINAL LOCATION OF REQUIRED ELECTRICAL AND SPECIFICATIONS PRIOR TO COMMENCING WORK.
26.22	E.C. TO PROVIDE WP/WR GFI RECEPTACLE. E.C. SHALL MAKE ELECTRICAL CONNECTIONS.
26.30	G.C. TO PROVIDE AND INSTALL DROP CORD RECEPTACLES FOR EQUIPMENT. DROP CORD RECEPTACLES SHALL TERMINATE IN A JUNCTION BOX ABOVE THE ACCESSIBLE CEILING.
26.42	E.C. TO PROVIDE AND INSTALL LITTLE FUSE SHOCKBLOCK SB5060-02X-0 CLASS A GFCI DEVICE FOR DISHWASHER. LITTLE FUSE SHOCKBLOCK SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION ABOVE PANELBOARD SERVING EQUIPMENT. E.C. TO PROVIDE LFMC CONNECTION TO DISHWASHER.
26.43	INTERLOCK FAN WITH RESTROOM LIGHT.
26.44	THE DISCONNECT SWITCHES FOR THE BRANCH CIRCUIT SHOWN ON THE PLAN SHALL BE RATED EQUAL TO OR HIGHER THAN THE BREAKER RATING. REFER TO BREAKER RATING IN THE PANEL SCHEDULE AND PROVIDE DISCONNECT AS NEEDED.
26.45	PROVIDE SERVICE RECEPTACLE FOR MAINTENACE WITHIN 25FT OF MECHANICAL UNIT.



1 POWER PLAN

1/4" = 1'-0"

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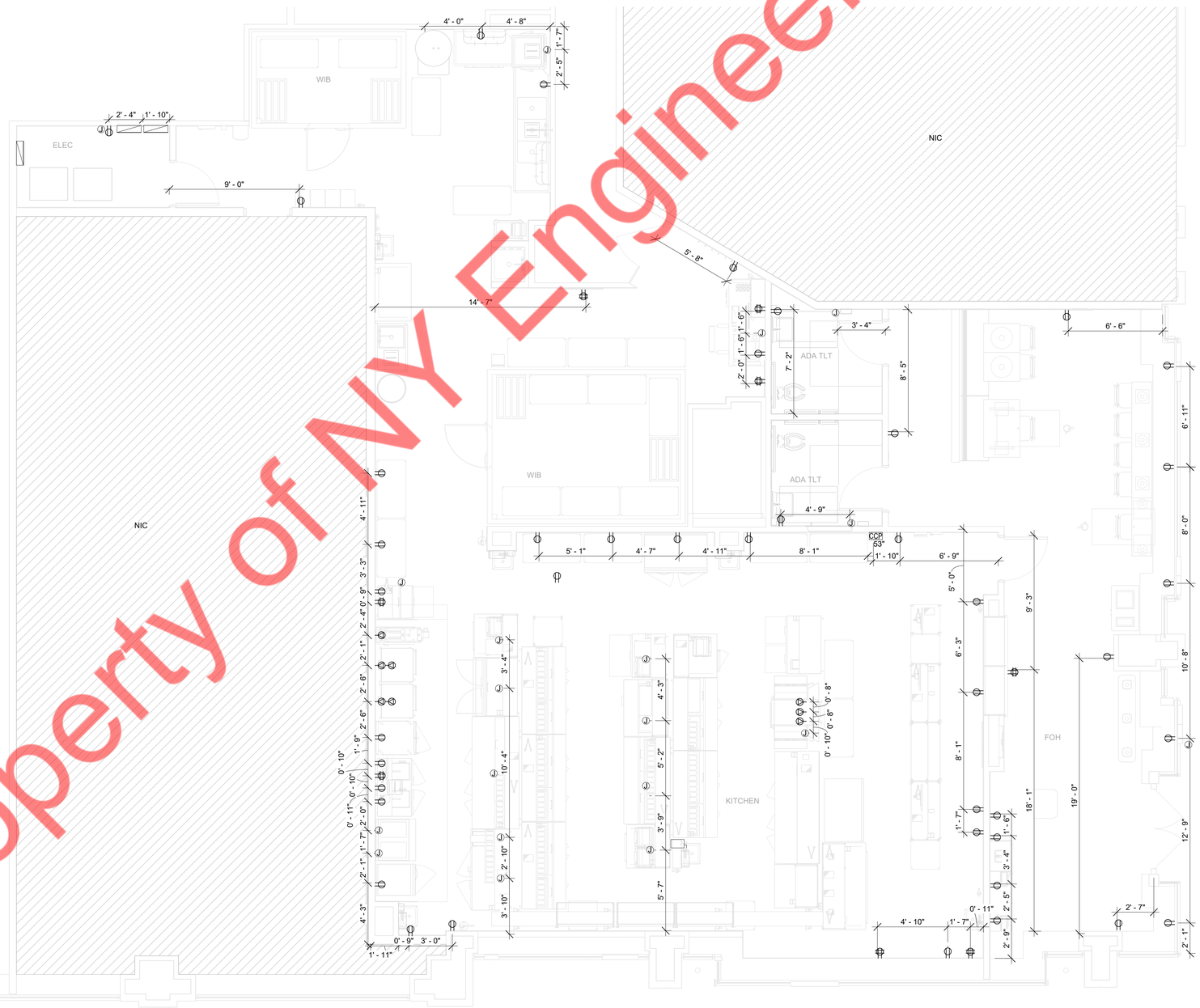
DESIGN ID: 03-51-A9.E3

SHEET NAME

POWER PLAN

SHEET NUMBER

E111



1 POWER ROUGH-IN PLAN

1/4" = 1'-0"

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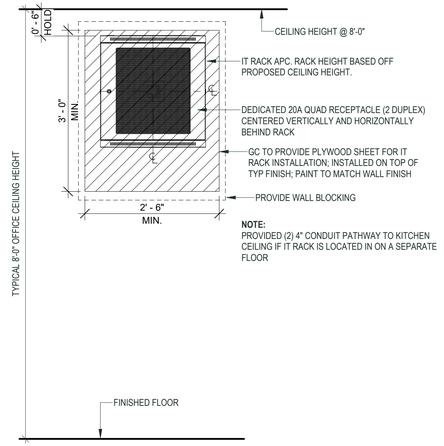
SHEET NAME

POWER ROUGH-IN PLAN

SHEET NUMBER

E112

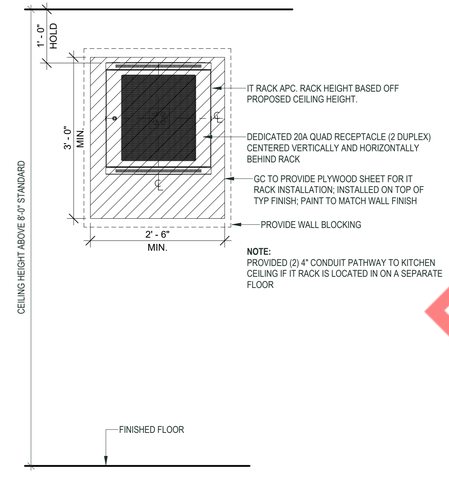


NOTE:
PROVIDED (2) 4" CONDUIT PATHWAY TO KITCHEN CEILING IF IT RACK IS LOCATED IN ON A SEPARATE FLOOR

3 IT RACK WITH 8FT CEILING

NTS

GENERAL NOTES	
1.	E.C. TO REFERENCE CAPTIVE AIR DRAWINGS, MECHANICAL PLANS AND SUBMITTALS FOR ADDITIONAL SCOPE OF WORK.
2.	LABELS SHALL BE PROVIDED ON BOTH ENDS OF ALL LOW VOLTAGE CABLES AND OUTLETS.
3.	EC IS RESPONSIBLE FOR LOW VOLTAGE CONNECTIONS REQUIRED BETWEEN WALK IN COOLER/FREEZER EVAPORATORS AND CONDENSERS
4.	ALL CONDUIT BENDS CONTAINING DATA CABLES SHALL BE LONG SWEEPS, NO 90 DEGREE BENDS.
5.	SHALL PROVIDE CONDUIT FROM LOW VOLTAGE DEVICE LOCATIONS IN WALL TO 6" ABOVE ACCESSIBLE CEILING. CONDUIT SHALL TERMINATE IN BUSHING.
6.	E.C. IS RESPONSIBLE FOR ALL LOW VOLTAGE ROUGH INS, JUNCTION BOXES AND CONDUITS FOR LOW VOLTAGE DEVICES. LOW VOLTAGE CABLES TO BE PROVIDED AND INSTALLED BY LOW VOLTAGE VENDOR.
7.	LOW VOLTAGE VENDOR SHALL COORDINATE WITH BUSSTRUT DRAWINGS FOR LOW VOLTAGE CABLE RUNS AND DEVICES MOUNTED ONTO BUSSTRUT.
8.	DATA: A. LOW VOLTAGE VENDOR TO RUN ALL CABLES ABOVE CEILING, THROUGH WALL AND CONDUIT B. ALL WIRES, CONNECTIONS AND TERMINATIONS ARE TO BE TESTED AND CERTIFIED PRIOR TO ARRIVAL OF POS EQUIPMENT. C. ALL CONNECTIONS ARE TO BE HOME RUN TERMINAL TO TERMINAL WIRE SPLICING WILL NOT BE ACCEPTABLE D. E.C. TO PROVIDE CONDUITS FOR LOW VOLTAGE SHOWN ON PLANS
9.	SPEAKERS: A. LOW VOLTAGE VENDOR TO RUN ALL CABLES ABOVE CEILING, THROUGH WALL AND CONDUIT B. ALL SPEAKER COMPONENTS AND FINAL CONNECTIONS TO BE PROVIDED BY OTHERS C. E.C. TO PROVIDE CONDUITS FOR LOW VOLTAGE SHOWN ON PLANS
10.	CAMERA SYSTEM: A. LOW VOLTAGE VENDOR TO RUN ALL CABLES ABOVE CEILING, THROUGH WALL AND CONDUIT B. ALL CAMERA WIRE RUNS ARE TO BE HOME RUNS TO OFFICE AS INDICATED ON WIRING DIAGRAMS C. ALL CAMERA SYSTEM COMPONENTS AND FINAL CONNECTIONS TO BE PROVIDED BY OTHERS. D. E.C. TO PROVIDE CONDUITS FOR LOW VOLTAGE SHOWN ON PLANS E. G.C. TO PROVIDE RACEWAY AND 1"C FOR INTERIOR AND EXTERIOR CAMERA PENETRATIONS.
11.	REFERENCE ARCHITECTURAL LOW VOLTAGE PLAN FOR LOW VOLTAGE EQUIPMENT SCHEDULE.



NOTE:
PROVIDED (2) 4" CONDUIT PATHWAY TO KITCHEN CEILING IF IT RACK IS LOCATED IN ON A SEPARATE FLOOR

4 IT RACK WITH 8FT+ CEILING

NTS

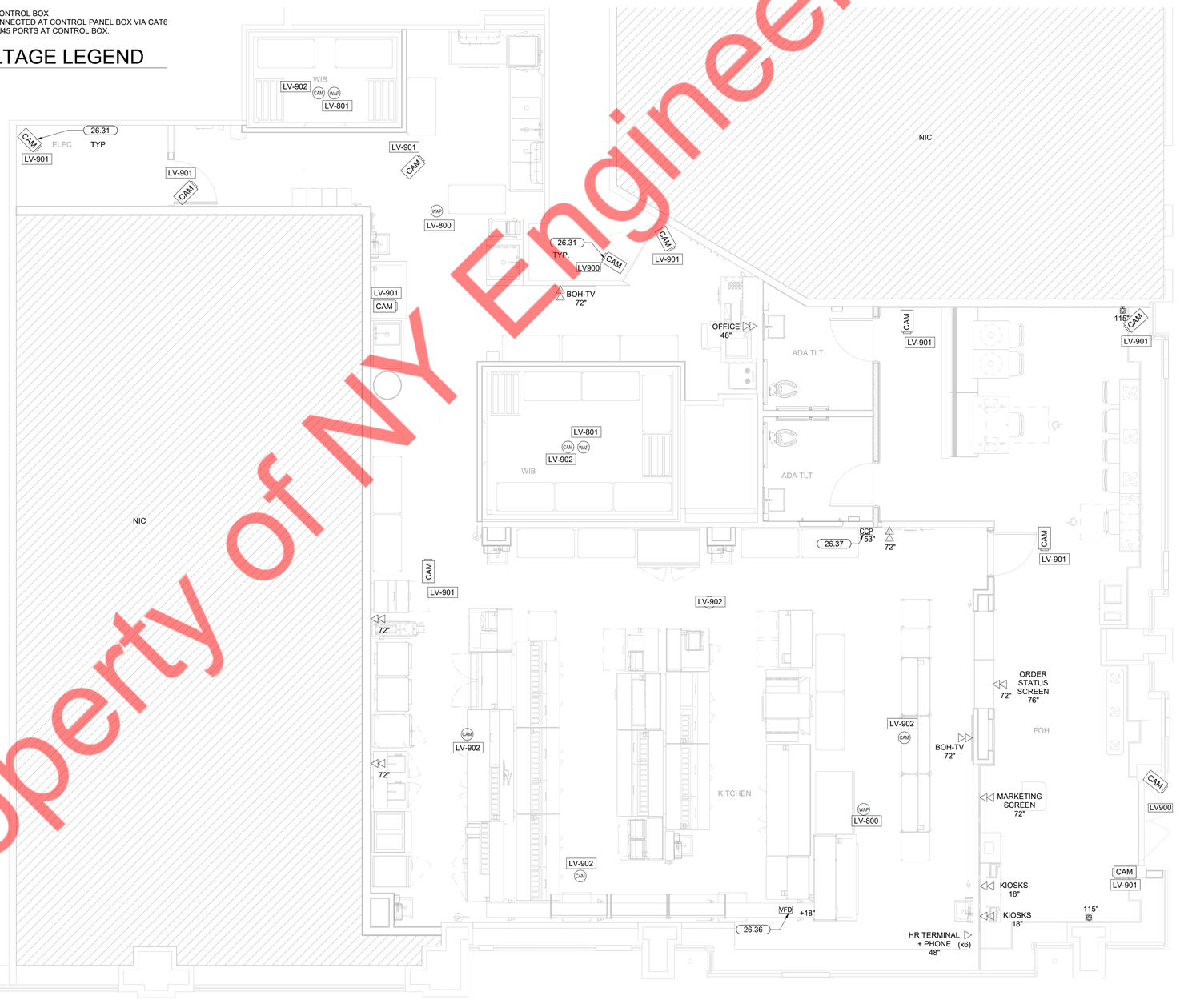
WAP LV-XXX	WIRELESS ACCESS POINT EQUIPMENT TAG. REFER TO LOW VOLTAGE EQUIPMENT SCHEDULE
CAM LV-XXX	CAMERA, FISHEYE EQUIPMENT TAG. REFER TO LOW VOLTAGE EQUIPMENT SCHEDULE
CAM LV-XXX	CAMERA, FIXED MOUNT EQUIPMENT TAG. REFER TO LOW VOLTAGE EQUIPMENT SCHEDULE
	SPEAKER - CEILING MOUNTED RECEPTACLE REFER TO LOW VOLTAGE EQUIPMENT SCHEDULE
VFD	VFD ASSEMBLY DRIVING CONVEYOR MOTOR AND SENSOR INPUTS. **POWER**: 6FT CORD W/ NEMA 5-15 PLUG, POWERED FROM DEDICATED BUSSTRUT POWER DROP. 500W MAX. **DATA**: 1X RJ45 FEMALE PORT; CONNECTED TO VFD PATCH PANEL WITH CAT6 PATCH PANEL
CCP +53"	CONVEYOR CONTROL BOX VFDS ARE CONNECTED AT CONTROL PANEL BOX VIA CAT6 CABLES; 10 RJ45 PORTS AT CONTROL BOX.

2 LOW VOLTAGE LEGEND

NTS

KEYNOTES	
26.31	G.C. TO PROVIDE RACEWAY AND 1"C FOR CAMERA PENETRATIONS. TYPICAL FOR INTERIOR AND EXTERIOR CAMERAS.
26.36	E.C. TO PROVIDE A CENTRAL JUNCTION BOX FOR VFDS' LOW VOLTAGE. E.C. TO INSTALL 2"C ABOVE BUSSSTRUT TO ABOVE CEILING WITH PULL STRING. LOW VOLTAGE VENDOR SHALL RUN CAT6 PATCH CABLE LESS THAN 15FT FROM VFDS TO JUNCTION BOX. LOW VOLTAGE VENDOR TO RUN CAT6 CABLES FROM CENTRAL VFD LOW VOLTAGE TO CONVEYER CONTROL PANEL THROUGH BUSSTRUT DATA DROPS. ETHERNET SHALL BE WIRED TO THE CONVEYOR CONTROL BOX. COORDINATE WITH BUSSTRUT DRAWINGS FOR CABLE RUNS.
26.37	E.C. TO PROVIDE A TWO GANG BOX FOR CONVEYOR CONTROL PANEL LOW VOLTAGE. E.C. TO EXTEND 2"C ABOVE ACCESSIBLE CEILING WITH PULL STRING. LOW VOLTAGE VENDOR SHALL PULL (1) CAT6 CABLES FROM CONVEYOR CONTROL PANEL TO EACH VFD. LOW VOLTAGE VENDOR SHALL PULL (1) CAT6 CABLES FROM IT CABINET TO CONVEYOR CONTROL PANEL FOR INTERNET CONNECTION. REMAINING 3 PORTS SHALL BE FOR FUTURE USE.

DEMO NOTES
1. EXISTING LOW VOLTAGE DEVICES TO BE REMOVED.
2. EXISTING TELE/DATA SERVICE TO BE PRESERVED DURING DEMO FOR REUSE. RELOCATE DEMARK TO OFFICE.



1 LOW VOLTAGE PLAN

1/4" = 1'-0"

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CDR25024.0 DESIGN ID: D3-51-A9.E3

SHEET NAME

LOW VOLTAGE PLAN

SHEET NUMBER

E120

FIRE ALARM KEY NOTES

1. E.C. SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR FOR THE EXACT LOCATION AND PROVIDE THE CONTROL MODULE / SENSOR AS REQUIRED FOR THE UNITS. BASE BID ACCORDINGLY.

FIRE ALARM GENERAL NOTES

A. THE FIRE ALARM INSTALLATION SHALL BE DONE IN COMPLIANCE WITH THE NFPA 72, BUILDING CODE AND OTHER LOCAL CODES AS REQUIRED.

B. CONTRACTOR SHALL VERIFY EXACT LOCATION, RATING, TYPE AND OPERABLE CONDITION OF ALL THE EXISTING FIRE ALARM DEVICES IN FIELD. THE FA DEVICES MARKED AS EXISTING (E) SHALL REMAIN CONNECTED TO THE EXISTING FA CIRCUIT. REPLACE OR RELOCATE THE EXISTING DEVICES WHERE EVER REQUIRED.

C. ADD NEW DEVICES AS SHOWN ON THE PLAN AND CONNECT TO THE FACP. ALL THE FA DEVICES SHALL BE COMPATIBLE WITH THE FACP.

D. ALL FIRE ALARM DEVICES SHALL BE COMPATIBLE AND SYNCHRONIZED WITH THE FIRE ALARM CONTROL PANEL.

E. COORDINATE WITH SPRINKLER DRAWINGS FOR EXACT LOCATION OF TAMPER SWITCH AND WATER FLOW SWITCH. PROVIDE MONITOR MODULE FOR BOTH AND CONNECT TO THE FACP.

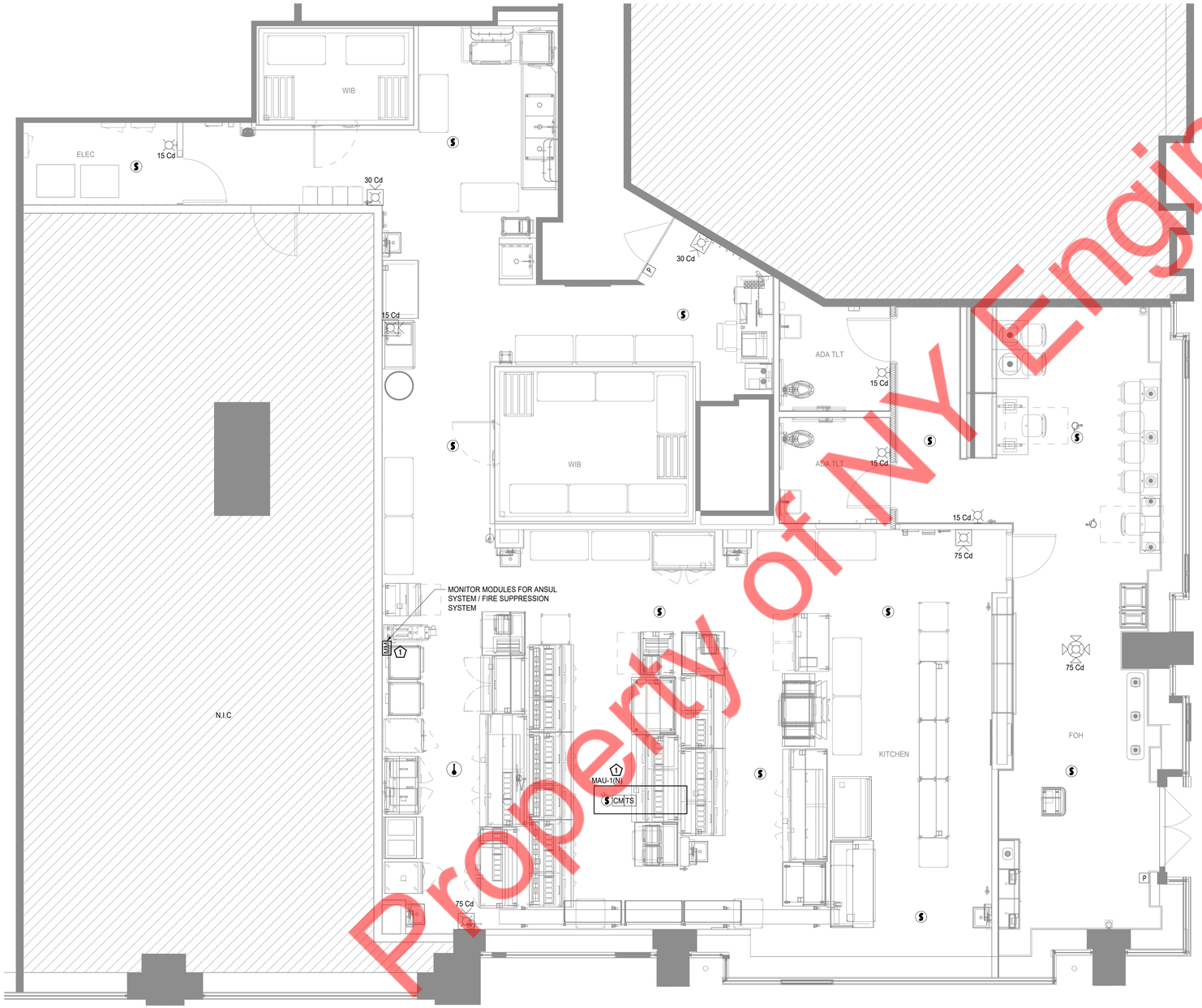
F. ALL SMOKE DETECTORS SHALL BE PLACED AT LEAST 3 FEET AWAY FROM WINDOWS, DOORS AND RETURN DUCT.

G. PLACE ALL DUCT DETECTORS IN THE RETURN DUCT OF RTU.

H. DUCT SMOKE DETECTORS, RELAY MODULE AND REMOTE TEST SWITCHES ARE NOT REQUIRED FOR THE FANS BELOW 2000 CFM. CONTRACTOR SHALL VERIFY CFM OF THE EXISTING HVAC UNITS IN FIELD AND PROVIDE THE ABOVE MENTIONED DEVICE IF REQUIRED.

I. CONTRACTOR SHALL VERIFY THE EXACT NUMBER OF ZONE AND EXACT NUMBER OF DEVICES AVAILABLE IN THE EXISTING FACP. PRIOR TO BID. INFORM ENGINEER ON RECORD OF ANY DISCREPANCY.

J. CONTRACTOR SHALL COORDINATE WITH LANDLORD/OWNER FOR THE EXACT LOCATION OF THE FACP IN THE FIELD. INFORM ENGINEER ON RECORD OF ANY DISCREPANCY.



1 FIRE ALARM PLAN

1/4" = 1'-0"

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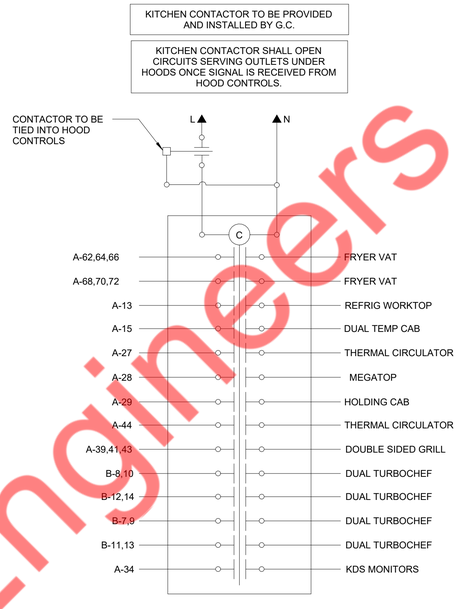
SHEET NAME

FIRE ALARM PLAN & NOTES

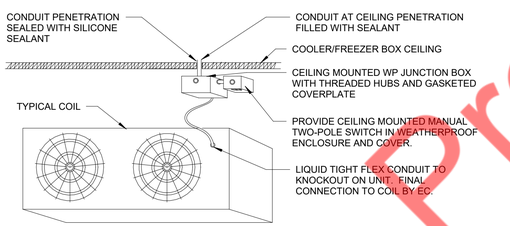
SHEET NUMBER

E121



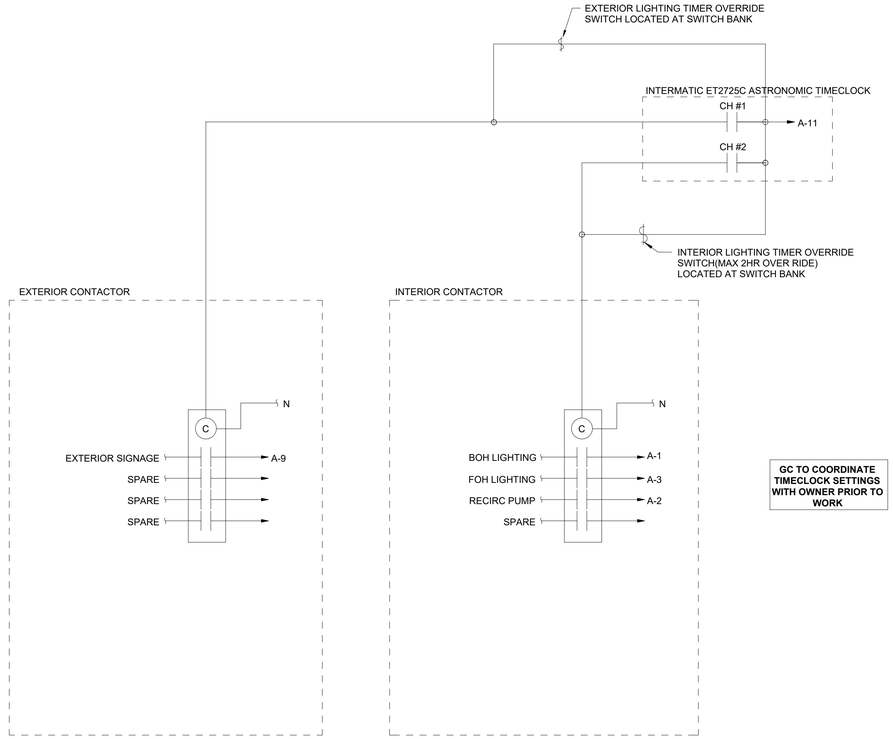
3 KITCHEN CONTACTOR

NTS



2 EVAPORATOR COIL WIRING

NTS



1 LIGHTING CONTACTOR

NTS

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SHEET NAME

ELECTRICAL DETAILS

SHEET NUMBER

E501

EXISTING FIRE ALARM SOW NOTES

1. ENCORE FIRE PREFERRED FIRE ALARM INSTALLER TO BE PROTECTION (EFP) . GC IS RESPONSIBLE FOR CONSULTING WITH EFP FOR FIRE ALARM/ANSUL SUPPRESSION PLANS AND FIRE EXTINGUISHER PURCHASING.
2. DEMOLISH ALL EXISTING FIRE ALARM DEVICES AND WIRING WITHIN TENANT SPACE, COORDINATE LANDLORD (LL) PANEL PROGRAMMING ASSOCIATED WITH REMOVAL OF DEVICES . PROVIDE NEW FIRE ALARM DEVICES AS SHOWN ON THE PLANS, COORDINATE WITH ALL NEW FINISH WORK AND NEW/RELOCATED LIGHTS AND AIR DIFFUSERS
3. CONTRACTOR SHALL COORDINATE TIE-IN OF TENANT FACP WITH THE LANDLORD (LL) PANEL FOR MONITORING PURPOSES AS REQUIRED BY THE LL

FIRE ALARM WIRE SCHEDULE

LINE TYPE	DESCRIPTION
———	SIGNAL LINE CIRCUIT (SLC) TWISTED/SHIELDED PAIR 2C/#16, CLASS "A" WIRING PATHWAY (LOOP TO FACP)
— — — —	NOTIFICATION APPLIANCE CIRCUIT (NAC) 2C/#14, CLASS "B" WIRING PATHWAY (EOLR @ LAST DEVICE)
———►	REMOTE ANNUNCIATOR CIRCUIT 4C/#16 (REFERENCE MANUFACTURER'S DOCUMENTATION FOR WIRING TYPE)

NOTES:

- LINE TYPE SHOWN ON FLOOR PLAN TO IDENTIFY WIRE TYPE (WIRE ROUTING MAY NOT BE SHOWN ON PLANS)
- ALL FIRE ALARM WIRING TO BE SOLID, POWER LIMITED CABLE
- MINIMUM APPROVED WIRE GAUGE SHOWN

2C= # OFCONDUCTORS #14=WIRE GAUGE

FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION (NOT ALL SYMBOLS MAY BE USED)
FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL FIRE-LITE ES-50X w/50pt CAPACITY
FAA	FIRE ALARM ANNUNCIATOR PANEL FIRE-LITE ANN-80
WM	WIRELESS COMMUNICATION MODULE FIRE-LITE CELL-CAB
P	PULL STATION WITH SAFETY COVER FIRE-LITE BG-12LX
S	SMOKE DETECTOR FIRE-LITE SD365
T	HEAT DETECTOR FIRE-LITE H365 (R= RATE OF RISE, HT = HIGH TEMP)
S CM & TS	DUCT DETECTOR & TEST SWITCH w/LED FIRE-LITE D355PL & RTS151KEY w/RA100Z
CO	CARBON MONOXIDE DETECTOR FIRE-LITE SD355CO
MM OR CM	MONITOR MODULE OR CONTROL/RELAY MODULE FIRE-LITE MMF-300 OR CRF-300
KB	FIRE DEPARTMENT KNOX BOX COORDINATE TYPE WITH LOCAL FIRE DEPARTMENT
OR	STROBE ONLY, WALL OR CEILING MOUNT SYSTEM SENSOR SL OR SCL
OR	SOUNDER/STROBE, WALL OR CEILING MOUNT SYSTEM SENSOR P2L OR PC2L (EXTERIOR = P2K)

cd=CANDELA WP=WEATHER PROOF EOLR=END OF LINE RESISTOR

FIRE ALARM INSTALLATION NOTES

1. FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 72, NECA 1, AND LOCAL CODES AND REGULATIONS. ALL EQUIPMENT AND MATERIALS SHALL BE UL LISTED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ).
2. FIRE ALARM CONTROL PANEL (FACP) SHALL BE AN ADDRESSABLE, MODULAR, POWER-LIMITED DESIGN WITH ELECTRONIC MODULES, UL 864 LISTED, AND DESIGNED TO TRANSMIT ALARM, TROUBLE, AND SUPERVISORY SIGNALS TO A UL LISTED CENTRAL STATION THROUGH A DIGITAL ALARM COMMUNICATION TRANSMITTER CAPABLE OF TRANSMITTING SIGNALS VIA DEDICATED PHONE LINE AND/OR GSM/IP CONNECTIONS. COORDINATE REQUIREMENTS WITH THE AHJ.
3. PROVIDE 120 V AC POWER THROUGH A DEDICATED LOCKING BREAKER AT POWER PANEL, COLORED RED.
4. GROUND THE FACP AND ALL ASSOCIATED CIRCUITS. INSTALL #6 AWG GROUND WIRE FROM THE TELE-COMMUNICATIONS EQUIPMENT GROUNDING POINT TO THE FACP.
5. SYSTEM SHALL INCLUDE 24V DC POWER SYSTEM WITH SEALED LEAD CALCIUM BATTERIES AND AUTOMATIC BATTERY CHARGER IN ACCORDANCE WITH NFPA 72.
6. PROVIDE DUCT MOUNTED SMOKE DETECTORS (OR MONITOR/ RELAY MODULES) FOR ROOF-TOP AIR HANDLING UNITS EXCEEDING 2,000 CFM. FOR UNIT SHUTDOWN, INSTALL PER MANUFACTURER'S RECOMMENDATIONS. UNITS SHALL TRANSMIT A SUPERVISORY SIGNAL TO THE FACP AND REMAIN SHUTDOWN UNTIL MANUALLY RESET. REFER TO MECHANICAL SHEETS FOR AIR HANDLING UNIT AND DUCTWORK LAYOUT AND DETAILS.
7. WIRE AND CABLE SHALL BE UL LISTED AND LABELED AS COMPLYING WITH NFPA 70, ARTICLE 760. NON-POWER-LIMITED V CIRCUITS TO BE SOLID-COPPER CONDUCTORS RATED 600 , 75°C. COLOR-CODED INSULATION.
8. ALL FIRE ALARM CIRCUITRY SHALL BE PLENUM RATED. EXPOSED WIRES SHALL BE INSTALLED IN DEDICATED CONDUIT.
9. ATTIC SPACES AND SOLID JOIST CONSTRUCTION: IN LIEU OF SPOT HEAT DETECTION WITH REDUCED SPACING, CONTRACTOR MAY ELECT TO USE LINEAR HEAT DETECTION INSTALLED IN AN "S" PATTERN PER NFPA 72:17.3.6.4.
10. CONTRACTOR SHALL INSTALL HEAT DETECTORS WHEN AUTOMATIC DETECTION IS REQUIRED BY THE AHJ OR LOCAL CODE THROUGHOUT THE KITCHEN OR ADJACENT AREAS TO THE KITCHEN.
11. IF REQUIRED BY THE LOCAL AHJ, EMERGENCY RESPONDER RADIO COVERAGE PER IFC SECTION 510 SHALL BE COORDINATED/ TESTED BY THE SYSTEM INSTALLER WITH THE LOCAL FIRE CODE OFFICIAL. IF SIGNAL STRENGTH FALLS BELOW 95% IN ANY AREA OF THE BUILDING, COORDINATE SIGNAL BOOSTING EQUIPMENT AND INSTALLATION WITH THE FIRE CODE OFFICIAL.

FIRE ALARM GENERAL NOTES

1. FIRE ALARM SYSTEM DESIGN, INSTALLATION AND MATERIALS SHALL BE IN ACCORDANCE WITH NFPA 70 & 72. SYSTEM SHALL MEET ALL APPLICABLE BUILDING/FIRE CODES AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ) AND INSURANCE CARRIER. VERIFY REQUIREMENTS PRIOR TO BID SUBMITTAL.
2. INFORMATION ON CONTRACT DOCUMENTS IS GENERALIZED AND FOR BIDDING PURPOSES ONLY. PERFORM CALCULATIONS AND COORDINATE WITH OTHER TRADES AS REQUIRED. DEVIATIONS FROM THE ENGINEER'S LAYOUT WILL NOT BE CONSIDERED UNLESS A FORMALLY SUBMITTED RFI IS RECEIVED & APPROVED.
3. PROVIDE ALL EQUIPMENT AND LABOR REQUIRED FOR A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM INCLUDING (BUT NOT LIMITED TO) NOTIFICATION, INITIATION AND MONITORING DEVICES AS INDICATED ON THE DRAWINGS. DEVICES SHALL BE OF ONE MANUFACTURER AND LISTED FOR USE WITH THE FACP.
4. PROVIDE ADDITIONAL MATERIALS & LABOR REQUIRED DUE TO LACK OF COORDINATION OR TO MEET AHJ AND INSURANCE CARRIER REQUIREMENTS AT NO ADDITIONAL OWNER COST.
5. FIRE ALARM CONTROL PANEL (FACP) AND REMOTE ANNUNCIATOR LOCATIONS SHOWN SHALL BE COORDINATED WITH THE FIRE DEPARTMENT AND AHJ PRIOR TO INSTALLATION.
6. PROVIDE KNOX BOX FOR FIRE DEPARTMENT ACCESS WITH TAMPER SWITCH MONITORING IF REQUIRED.
7. PROVIDE DEDICATED EXTERIOR WATERFLOW NOTIFICATION AS REQUIRED, COORDINATE TYPE AND LOCATION WITH AHJ.
8. INTERFACE WITH AND MONITOR ALL FIRE SUPPRESSION SYSTEM DEVICES INCLUDING (BUT NOT LIMITED TO) SPRINKLER FLOW/ TAMPER SWITCHES, HOOD AND/OR CANOPY SYSTEMS, ETC.
9. PROVIDE NOTIFICATION APPLIANCE CIRCUIT (NAC) PANELS TO POWER ADDITIONAL NOTIFICATION DEVICES AS REQUIRED.
10. AUDIBLE NOTIFICATION DEVICES SHALL SOUND UNTIL SILENCED AT THE CONTROL PANEL OR REMOTE ANNUNCIATOR AS REQUIRED. VISUAL ALARM IS DISPLAYED UNTIL DEVICE IS RETURNED TO ITS NORMAL POSITION OR SUPERVISORY CONDITION IS CLEARED.
11. IF REQUIRED BY THE LOCAL AHJ, EQUIPMENT DATA SHEETS AND BATTERY CALCULATIONS IN ACCEPTANCE WITH NFPA 72 SHALL BE PROVIDED BY THE FIRE ALARM SYSTEM MANUFACTURER/ INSTALLER TO MATCH EQUIPMENT TO BE INSTALLED.
12. TEST ALL SYSTEM DEVICES FOR PROPER OPERATION ACCORDING TO NFPA 72 IN THE PRESENCE OF THE AHJ AND OTHER OFFICIALS INSPECTING THE FIRE ALARM SYSTEM.
13. FORWARD COMPLETED NFPA 72 FIRE ALARM CERTIFICATE OF COMPLETION TO THE OWNER.
14. SYSTEM INSTALLER SHALL BE A LICENSED FIRE ALARM CONTRACTOR IN THE RESPECTIVE STATE OF THIS PROJECT.

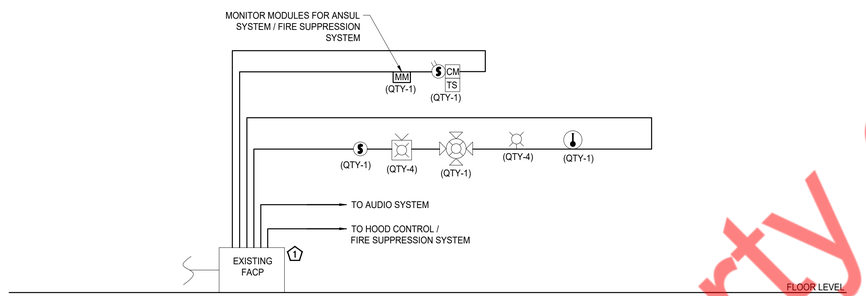
TYPE OF DESIGN

INSTALLATION OF MANUAL FIRE ALARM SYSTEM

FIRE ALARM OPERATION MATRIX

- FIRE ALARM SYSTEM SHALL BE A FULLY SUPERVISED PROTECTIVE PREMISES SYSTEM, OPERATING IN ACCORDANCE WITH NFPA 72, MANUAL RESET ONLY
- INPUTS/OUTPUTS IN MATRIX DIAGRAM ARE FOR REFERENCE ONLY, NOT ALL INPUTS/ OUTPUTS ARE SHOWN OR MAY BE USED
- FIRE ALARM AUDIO SIGNAL TO BE TEMPORAL 3 CODED, CARBON MONOXIDE AUDIO SIGNAL TO BE TEMPORAL 4 CODED
- BUILDING SYSTEM PANEL: (IF APPLICABLE) PANEL SHALL PROVIDE A GENERAL ALARM DRY CONTACT FOR MONITORING BY BUILDING SYSTEM CONTROL PANEL

		SYSTEM OUTPUTS																						
		CONTROL UNIT ANNUNCIATION							NOTIFICATION						REQUIRED FIRE SAFETY CONTROL					SUPPLE-MENTARY		
		ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE APPROPRIATE LOCATION INDICATOR	ACTUATE ALL AUDIBLE EVACUATION SIGNALS	ACTUATE ALL VISIBLE EVACUATION SIGNALS	DISPLAY/PRINT CHANGE OF STATUS	TRANSMIT ALARM TO SUPERVISING STATION	TRANSMIT SUPERVISORY TO SUPERVISING STATION	TRANSMIT TROUBLE TO SUPERVISING STATION	RELEASE MAGNETIC SMOKE DOORS & UNLOCK EXITS	CONTROL PROCESS AS REQUIRED	CONTROL PROCESS AS REQUIRED	CONTROL PROCESS AS REQUIRED	CONTROL PROCESS AS REQUIRED	REMOTELY DISPLAY ACTIVE STATUS	FAN SHUT DOWN	CLOSE SMOKE/FIRE DAMPERS IN RATED WALLS
SYSTEM INPUTS		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	FIRE ALARM AC POWER FAILURE					●	●				●			●						●		
2	FIRE ALARM LOW BATTERY					●	●				●			●						●		
3	OPEN CIRCUIT					●	●				●			●						●		
4	GROUND FAULT					●	●				●			●						●		
5	NOTIFICATION CIRCUIT SHORT					●	●				●			●						●		
6	MANUAL PULL STATION	●	●					●	●	●	●	●			●					●		
7	SMOKE DETECTOR	●	●					●	●	●	●	●			●					●		
8	HEAT DETECTOR	●	●					●	●	●	●	●			●					●		
9	DUCT DETECTOR			●	●			●			●		●		●					●	●	●
10	ANSUL/FIRE SUPPRESSION SYSTEM	●	●					●	●	●	●	●								●		



FIRE ALARM GENERAL NOTES

A. REFER TO FLOOR PLAN FOR EXACT QUANTITIES AND LOCATIONS OF ALL DEVICES.

B. THE FIRE ALARM SYSTEM SHALL CONFORM WITH REQUIREMENTS OF THE MASSACHUSETTS FIRE SAFETY CODE AND THE CITY OF BOSTON FIRE DEPARTMENT. SHOP DRAWINGS SHALL BE SUBMITTED TO THE FIRE DEPARTMENT FOR APPROVAL.

C. ALL DEVICES SHALL BE COMPATIBLE WITH FACP. AND ALL FIRE ALARM WIRING SHALL BE INSTALLED IN MINIMUM 3/4" EMT CONDUIT.

D. ALL FIRE ALARM WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF NFPA, STATE, AND LOCAL BUILDING CODES AND THE AMERICANS WITH DISABILITIES ACT (ADA).

E. PROVIDE FAULT ISOLATION MODULES ON THE SIGNAL LINE CIRCUIT TO PROTECT THE SYSTEM FROM LINE TO LINE FAULTS MODULES SHALL BE PROVIDED AS REQUIRED, WITH A MINIMUM OF (1) MODULE PER EVERY 25 DEVICES.

F. ALL SMOKE DETECTORS SHALL BE PLACED AT LEAST 3 FEET AWAY FROM WINDOWS, DOORS, AND RETURN DUCTS.

G. PROVIDE ISOLATION MODULE ON THE SLC (SIGNAL LINE CIRCUIT) AFTER EVERY 20 FA DEVICES.

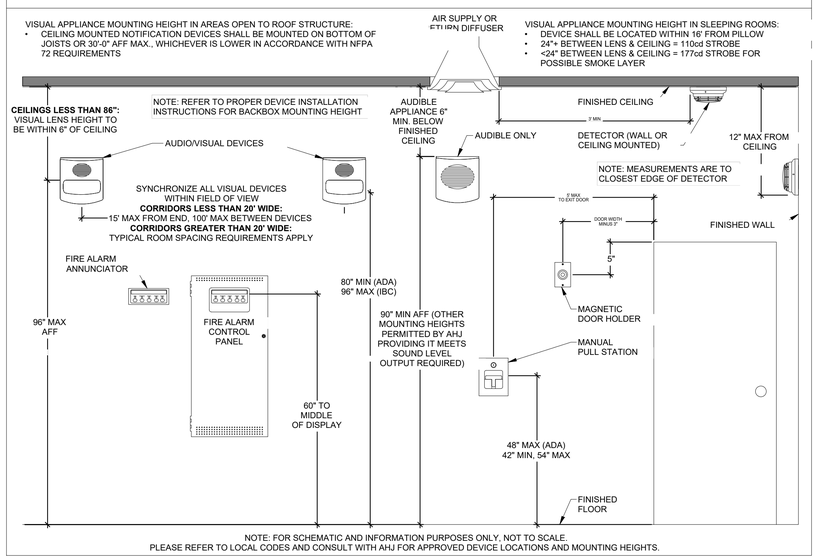
H. E.C SHALL PROVIDE DEVICES COMPATIBLE WITH EXISTING FACP PANEL.

FIRE ALARM KEY NOTES

1. THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION, SPARE CAPACITY, AND OPERABLE CONDITION OF THE FACP IN THE FIELD AND CONNECT ALL FIRE ALARM DEVICES LOCATION IN THE PROJECT SPACE TO THE FACP. INFORM THE ENGINEER OF THE RECORD OF ANY DISCREPANCY BEFORE THE BID.

FIRE ALARM DEVICE MOUNTING HEIGHTS

(PER NFPA 72)



NOTE: FOR SCHEMATIC AND INFORMATION PURPOSES ONLY, NOT TO SCALE.
PLEASE REFER TO LOCAL CODES AND CONSULT WITH AHJ FOR APPROVED DEVICE LOCATIONS AND MOUNTING HEIGHTS.

1 FIRE ALARM RISER DIAGRAM
N.T.S

CONSULTANTS
NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET, SUITE 49674
MIAMI, FL 33179
PH - (646) 878-9217
WWW.NY-ENGINEERS.COM

NO.	DATE	DESCRIPTION
0	10/08/2025	ISSUE FOR PERMIT
1	11/25/2025	BUILDING COMMENTS

DRAWN BY NYE
CHECKED BY NYE
ARCH. PROJECT NO.:
COR25024.0 DESIGN ID: D3-51-A9.E3
SHEET NAME
FIRE ALARM DETAILS
SHEET NUMBER
E502

NOTE:
- E.C. SHALL CAREFULLY PHASE WORK AND COORDINATE WITH LANDLORD SUCH THAT IT DOES NOT DISRUPT OTHER TENANTS ELECTRICAL SERVICES.
- FINAL SERVICE ENTRANCE DESIGN TBD. PENDING ADDITIONAL FEEDBACK FROM ELECTRICAL UTILITY.

NOTE:
CONTRACTOR TO VERIFY ONE-LINE DIAGRAM MATCHES EXISTING CONDITIONS. IF ONE-LINE DEVIATES CONTRACTOR SHALL CONTACT ELECTRICAL ENGINEER.

UTILITY COORDINATION:

- METER FURNISHED AND INSTALLED BY UTILITY
- METER BASE FURNISHED BY CONTRACTOR
- SECONDARY TRENCHING AND CONDUIT BY CONTRACTOR
- SECONDARY CONDUCTORS BY CONTRACTOR

NOTE:

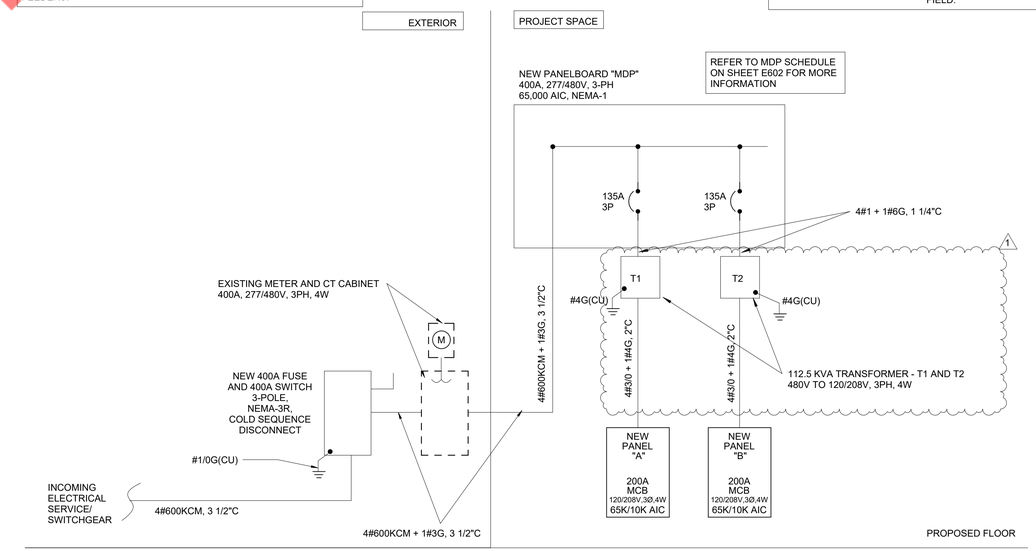
THERE IS NO MORE THAN ONE ELECTRICAL SERVICE AVAILABLE ON MAIN BUILDING, PROVIDED AT 277/480V, 3-PHASE. IN THE LANDLORD'S ELECTRICAL ROOM. A 2000A, 277/480V, 3-PHASE MAIN SERVICE SWITCHBOARD (SWBD-1) IS AVAILABLE TO SERVE THE RETAIL MAIN BUILDING AREAS.

THE 2000A SERVICE SWITCHBOARD (SWBD-1) CURRENTLY FEEDS THE EXISTING 300AF/400AS, 277/480V, 3-PHASE FUSED DISCONNECT SWITCH SERVING WONDER'S NOMA RESTAURANT, LOCATED IN THE SAME LANDLORD METER ROOM. UPGRADE THIS EXISTING RESTAURANT FUSED DISCONNECT SWITCH FROM 300AF/400AS TO NEW 400AF/400AS, 277/480V, 3-PHASE.

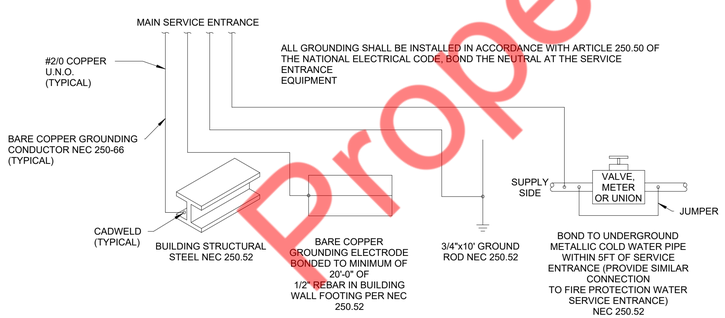
COORDINATE FINAL SERVICE LOCATION, SWITCHBOARD CONNECTION, SERVICE SIZE, AND ALL RELATED REQUIREMENTS WITH THE UTILITY, LANDLORD, AND OWNER.

E.C. SHALL ENSURE THAT ALL FEEDERS AND BRANCH CIRCUITS ARE INSTALLED TO LIMIT VOLTAGE DROP IN ACCORDANCE WITH ASHRAE 90.1, SECTION 8.4.1. THE VOLTAGE DROP FROM THE SOURCE TO ANY LOAD SHALL NOT EXCEED 3% FOR BRANCH CIRCUITS AND 5% FOR FEEDERS.

ALL SWITCHBOARDS AND PANELBOARDS SHALL HAVE A COMMERCIALLY PRODUCED PERMANENT LABEL APPLIED TO WARN OFF POTENTIAL ARC FLASH HAZARDS, IN ACCORDANCE WITH NEC 110.16 AND NFPA 70E. LABELING MAY BE COMPLETED BY EQUIPMENT MANUFACTURER, EQUIPMENT VENDOR/SUPPLIER, OR THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THAT ALL SWITCHBOARDS AND PANELBOARDS ARE PROPERLY LABELED IN THE FIELD.



1 ONE-LINE DIAGRAM
NTS



2 GROUNDING ELECTRODE SYSTEM DETAIL
1/4" = 1'-0"

CONSULTANTS
NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET, SUITE 49674
MIAMI, FL 33179
PH - (646) 878-9217
WWW.NY-ENGINEERS.COM

-

NO.	DATE	DESCRIPTION
0	10/08/2025	ISSUE FOR PERMIT
1	11/25/2025	BUILDING COMMENTS

DRAWN BY
CHECKED BY
ARCH. PROJECT NO.:
CDR25024.0
DESIGN ID: D3-51-49.E3

SHEET NAME
ELECTRICAL ONE-LINE DIAGRAMS

SHEET NUMBER
E601

A — PANELBOARD

208/120V Wye, 3PH, 4W
200A MCB
65KAIC SERIES RATED
SURFACE, NEMA 1
GROUND BAR

LOCATION: ELECTRICAL ROOM
SUPPLY FROM: MDP
UPSTREAM OCPD: 200 A
SERVES: EQUIPMENT

NEW

CKT	Circuit Description	Wire	Trip	Poles	A		B		C		Poles	Trip	Wire	Circuit Description	CKT
1	BOH LIGHTING(2,7)	12	20 A	1	1.33	0.07					1	20 A	12	RECIRC PUMP(2,7)	2
3	FOH LIGHTING(2,7)	12	20 A	1			0.61	0.19			1	20 A	12	WIC EVAP	4
5	EXTERIOR BUILDING LTG (2,7)	12	20 A	1					0.10	0.18	1	20 A	12	WALK IN MAINTENANCE RCPT(4)	6
7	EXTERIOR BUILDING LTG (2,7)	12	20 A	1	0.02	0.18					1	20 A	12	ROOFTOP RCPTS	8
9	EXTERIOR SIGNAGE (2,7)	12	20 A	1			0.50	0.54			1	20 A	12	FOH RCPTS	10
11	TIMECLOCK(2)	12	20 A	1					0.00	0.36	1	20 A	12	ELECTRIC RM MAINTENCE RCPT	12
13	#236B-REFRIG WORKTOP(4,8)	12	20 A	1	0.26	0.36					1	20 A	12	BOH RCPTS	14
15	#218BR-DUAL TEMP CAB(4,8)	12	20 A	1			0.44	0.54			1	20 A	12	DINING RECEPTS	16
17	WATER DISPENSER (4)	12	20 A	1					0.18	0.36	1	20 A	12	OFFICE RECEPT	18
19	KITCHEN RCPTS (4)	12	20 A	1	0.54	0.36					1	20 A	12	LOBBY SPEAKERS	20
21	IT RACK	12	20 A	1			0.36	0.72			1	20 A	12	FOH COUNTER(4)	22
23	MAINT. RCPT (4)	12	20 A	1					0.18	0.54	1	20 A	12	TRASH ROOM GEN OUTLETS	24
25	#504-SOAK TANK (4)	12	20 A	1	1.00	0.86					1	20 A	12	KITCHEN GEN RCPTS(4)	26
27	#102-THERMAL CIRCULATOR(4,8)	12	20 A	1			1.80	0.24			1	20 A	12	#267BD-MEGATOP (4,8)	28
29	#303L-HOLDING CAB(4,8)	12	20 A	1					2.29	0.50	1	20 A	12	BOH GENERAL RCPTS	30
31	CONVEYER BELT(4)	12	20 A	1	0.36	0.54					1	20 A	12	BOH RCPTS (4)	32
33	WALK IN DOOR PWR(2)	12	20 A	1			1.00	0.72			1	20 A	12	KDS MONITORS(4,8)	34
35	FA CONTROL PANEL(3)	12	20 A	1					0.50	0.36	1	20 A	12	TERMINAL (4)	36
37	#219-DOUBLE DOOR FRIDGE(4)	12	20 A	1	0.62	0.36					1	20 A	12	METRICS TV (4)	38
39	#124-DOUBLE SIDED GRILL (4,8)	10	30 A	3			2.88	0.36			1	20 A	12	BREAKROOM TV (4)	40
41	--	--	--	--					2.88	0.72	1	20 A	12	FOH TV	42
43	--	--	--	--	2.88	1.80					1	20 A	12	#102- THERMAL CIRCLUATOR(4,8)	44
45	WIC CONDENSER	12	20 A	3			2.25	0.36			1	20 A	12	KITCHEN RCPTS (4)	46
47	--	--	--	--					2.25	0.36	1	20 A	12	FOH RCPTS	48
49	--	--	--	--	2.25	0.00					1	20 A		SPARE	50
51	WIF CONDENSER	12	20 A	3			2.03	0.04			1	20 A	12	FLY LIGHT (4)	52
53	--	--	--	--					2.03	1.40	1	15 A	12	HOOD CONTROLS (2)	54
55	--	--	--	--	2.03	1.02					2	20 A	12	WIF EVAP	56
57	HAND DRYER (2)	12	20 A	1			0.50	1.02			--	--	--	--	58
59	HAND DRYER (2)	12	20 A	1					0.50	0.50	1	20 A	12	HEAT TRACE (5)	60
61	#501-DISHWASHER(2)	4	60 A	3	5.00	5.00					3	60 A	4	#120-FRYER VAT RIGHT(2,8)	62
63	--	--	--	--			5.00	5.00			--	--	--	--	64
65	--	--	--	--					5.00	5.00	--	--	--	--	66
67	#101-3-DOUBLE BATCH OVEN(4)	6	30 A	3	2.33	5.00					3	60 A	4	#120-FRYER VAT LEFT(2,8)	68
69	--	--	--	--			2.33	5.00			--	--	--	--	70
71	--	--	--	--					2.33	5.00	--	--	--	--	72
	TOTAL CONNECTED KVA:				34.16 kVA		34.43 kVA		33.51 kVA						
	TOTAL CONNECTED AMPS:				285.50 A		287.76 A		279.27 A						

PER NEC ARTICLE 220

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	TOTAL DEMAND	PANEL TOTALS	
CONTINUOUS	0.00 kVA	125.00%	0.00 kVA		
NON-CONTINUOUS	1.00 kVA	100.00%	1.00 kVA	**TOTAL CONN. LOAD:**	**101.89 kVA**
Lighting	2.31 kVA	125.00%	2.89 kVA	**TOTAL DEMAND LOAD:**	**70.35 kVA**
RECEPTACLES	9.72 kVA	100.00%	9.72 kVA	**TOTAL CONN. CURRENT:**	**283.03 A**
MOTORS	0.00 kVA	125.00%	0.00 kVA	**TOTAL DEMAND CURRENT:**	**195.42 A**
KITCHEN	88.83 kVA	65.00%	57.74 kVA		
REFRIGERATION	0.00 kVA	100.00%	0.00 kVA		
HVAC COOL	0.00 kVA	100.00%	0.00 kVA		
HVAC HEAT	0.00 kVA	100.00%	0.00 kVA		

B — PANELBOARD

208/120V Wye, 3PH, 4W
200A MCB
65KAIC SERIES RATED
SURFACE, NEMA 1
GROUND BAR

LOCATION: ELECTRICAL ROOM
SUPPLY FROM: MDP
UPSTREAM OCPD: 200 A
SERVES: EQUIPMENT

NEW

CKT	Circuit Description	Wire	Trip	Poles	A		B		C		Poles	Trip	Wire	Circuit Description	CKT
1	#121-CONVEYOR OVEN (4)	6	50 A	3	4.80	4.80					3	50 A	6	#122-CONVEYOR OVEN (4)	2
3	--	--	--	--			4.80	4.80			--	--	--	--	4
5	--	--	--	--					4.80	4.80	--	--	--	--	6
7	#101-DUAL TURBOCHEF(4,8)	6	50 A	2	4.16	4.16					2	50 A	6	#101-DUAL TURBOCHEF(4,8)	8
9	--	--	--	--			4.16	4.16			--	--	--	--	10
11	#101-DUAL TURBOCHEF(4,8)	6	50 A	2					4.16	4.16	2	50 A	6	#101-DUAL TURBOCHEF(4,8)	12
13	--	--	--	--	4.16	4.16					--	--	--	--	14
15	BUSSTRUT R4-2 (2)	8	40 A	2			1.80	3.68			2	40 A	8	BUSSTRUT R4-1(2)	16
17	--	--	--	--					0.74	3.74	--	--	--	--	18
19	BUSSTRUT R1-2 (2)	8	40 A	2	0.00	1.80					2	40 A	8	BUSSTRUT R2-2(2)	20
21	--	--	--	--			1.80	2.39			--	--	--	--	22
23	BUSSTRUT R2-1 (2)	8	40 A	2					3.73	1.56	2	40 A	8	BUSSTRUT R3-2 (2)	24
25	--	--	--	--	2.04	2.06					--	--	--	--	26
27	BUSSTRUT R6-1 (2)	8	40 A	2			0.76	2.72			2	40 A	8	BUSSTRUT R1-1 (2)	28
29	--	--	--	--					0.89	3.00	--	--	--	--	30
31	EF-3(N)	12	20 A	1	0.10	2.52					2	40 A	8	BUSSTRUT R3-1 (2)	32
33	SPARE		20 A	1			0.00	2.44			--	--	--	--	34
35	SPARE		20 A	1					0.00	0.00	1	20 A		SPARE	36
37	SPARE		20 A	1	0.00	0.00					1	20 A		SPARE	38
39	SPARE		20 A	1			0.00	0.00			1	20 A		SPARE	40
41	SPARE		20 A	1					0.00	0.00	1	20 A		SPARE	42
43	SPARE		20 A	1	0.00	0.00					1	20 A		SPARE	44
45	SPARE		20 A	1			0.00	0.00			1	20 A		SPARE	46
47	SPARE		20 A	1					0.00	0.00	1	20 A		SPARE	48
49	SPARE		20 A	1	0.00	0.00					1	20 A		SPARE	50
51	SPARE		20 A	1			0.00	0.00			1	20 A		SPARE	52
53	SPARE		20 A	1					0.00	0.00	1	20 A		SPARE	54
55	SPARE		20 A	1	0.00	0.00					1	20 A		SPARE	56
57	SPARE		20 A	1			0.00	0.00			1	20 A		SPARE	58
59	SPARE		20 A	1					0.00	0.00	1	20 A		SPARE	60
61	SPARE		20 A	1	0.00	0.00					1	20 A		SPARE	62
63	SPARE		20 A	1			0.00	0.00			1	20 A		SPARE	64
65	SPARE		20 A	1					0.00	0.00	1	20 A		SPARE	66
67	SPARE		20 A	1	0.00	0.50					1	20 A	12	SHOW WINDOW	68
69	SHOW WINDOW	12	20 A	1			0.50	0.50			1	20 A	12	SHOW WINDOW	70
71	SHOW WINDOW	12	20 A	1					0.50	1.80	1	20 A	12	SHOW WINDOW	72
	TOTAL CONNECTED KVA:				35.26 kVA		34.51 kVA		33.88 kVA						
	TOTAL CONNECTED AMPS:				294.64 A		288.39 A		282.33 A						

PER NEC ARTICLE 220

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	TOTAL DEMAND	PANEL TOTALS	
CONTINUOUS	0.00 kVA	125.00%	0.00 kVA		
NON-CONTINUOUS	0.00 kVA	100.00%	0.00 kVA	**TOTAL CONN. LOAD:**	**99.75 kVA**
Lighting	0.00 kVA	125.00%	0.00 kVA	**TOTAL DEMAND LOAD:**	**64.83 kVA**
RECEPTACLES	0.00 kVA	100.00%	0.00 kVA	**TOTAL CONN. CURRENT:**	**277.08 A**
MOTORS	0.00 kVA	125.00%	0.00 kVA	**TOTAL DEMAND CURRENT:**	**180.08 A**
KITCHEN	99.75 kVA	65.00%	64.84 kVA		
REFRIGERATION	0.00 kVA	100.00%	0.00 kVA		
HVAC COOL	0.00 kVA	100.00%	0.00 kVA		
HVAC HEAT	0.00 kVA	100.00%	0.00 kVA		

MDP — PANELBOARD

480/277 Wye, 3PH, 4W
400A MLO
65KAIC FULLY RATED
SURFACE, NEMA 1
GROUND BAR

LOCATION ELECTRICAL
SUPPLY FROM: UTILITY
SERVES: EQUIPMENT

NEW

CKT	Circuit Description	Wire	Trip	Poles	A		B		C		Poles	Trip	Wire	Circuit Description	CKT
1	TRANSFORMER (T1)	-	135 A	3	34.16	35.26					3	135 A	-	TRANSFORMER (T2)	2
3	--	--	--	--			34.43	34.51			--	--	--	--	4
5	--	--	--	--					33.51	33.88	--	--	--	--	6
7	WSHP-6(N)	12	15 A	3	2.33	2.33					3	15 A	12	WSHP-4(N)	8
9	--	--	--	--			2.33	2.33			--	--	--	--	10
11	--	--	--	--					2.33	2.33	--	--	--	--	12
13	ELECTRIC HEATER	3	90 A	3	16.67	10.00					3	50 A	8	WATER HEATER	14
15	--	--	--	--			16.67	10.00			--	--	--	--	16
17	--	--	--	--					16.67	10.00	--	--	--	--	18
19	SPARE		20 A	1	0.00	0.00					1	20 A		SPARE	20
21	SPARE		20 A	1			0.00	0.00			1	20 A		SPARE	22
23	SPARE		20 A	1					0.00	0.00	1	20 A		SPARE	24
25	WSHP-3(N)	12	15 A	3	2.33	2.33					3	15 A	12	WSHP-2(N)	26
27	--	--	--	--			2.33	2.33			--	--	--	--	28
29	--	--	--	--					2.33	2.33	--	--	--	--	30
31	WSHP-5(N)	12	15 A	3	2.33	2.33					3	15 A	12	WSHP-1(N)	32
33	--	--	--	--			2.33	2.33			--	--	--	--	34
35	--	--	--	--					2.33	2.33	--	--	--	--	36
37	MAU-1(N)	3	100 A	3	20.33	1.00					3	20 A	12	KEF-1(N)	38
39	--	--	--	--			20.33	1.00			--	--	--	--	40
41	--	--	--	--					20.33	1.00	--	--	--	--	42
	TOTAL CONNECTED KVA:				131.42 kVA		130.94 kVA		129.39 kVA						
	TOTAL CONNECTED AMPS:				1097.16 A		1093.16 A		1078.27 A						

PER NEC ARTICLE 220

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	TOTAL DEMAND	PANEL TOTALS	
CONTINUOUS	0.00 kVA	125.00%	0.00kVA		
NON-CONTINUOUS	1.00 kVA	100.00%	1.00 kVA	**TOTAL CONN. LOAD:**	**387.51 kVA**
Lighting	2.31 kVA	125.00%	2.88 kVA	**TOTAL DEMAND LOAD:**	**322.17 kVA**
RECEPTACLES	9.72 kVA	100.00%	9.72 kVA	**TOTAL CONN. CURRENT:**	**466.22 A**
MOTORS	0.00 kVA	125.00%	0.00 kVA	**TOTAL DEMAND CURRENT:**	**387.51 A**
KITCHEN	188.58 kVA	65.00%	122.58 kVA		
REFRIGERATION	0.00 kVA	100.00%	0.00 kVA		
HVAC COOL	186.00 kVA	100.00%	186.00 kVA		
HVAC HEAT	0.00 kVA	100.00%	0.00 kVA		

LOAD SUMMARY

TOTAL CONNECTED KVA	IF TOTAL LOAD IS 0_200 KVA	IF TOTAL LOAD IS 201_325 KVA	IF TOTAL LOAD IS 326-800 KVA	IF TOTAL LOAD IS OVER 800 KVA	DIVERSIFIED AMPS AT 208 VOLT
387.61 kVA	0	0	203.80	0	245.24

LOAD SUMMARY CALCULATIONS PER NEC 220.88

BRANCH CIRCUIT WIRING CHART

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

PANELBOARD NOTES ( )

(1) TERMINATE GROUND ON ISOLATED GROUND BUS.

(2) INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-OFF FOR MAINTENANCE).

(3) INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-ON FOR CRITICAL LOAD).

(4) GFI BREAKER FOR PERSONNEL PROTECTION (5 mA).

(5) GFI BREAKER FOR EQUIPMENT PROTECTION (30 mA).

(6) CONDUCTOR SIZE HAS BEEN INCREASED FOR VOLTAGE DROP. SIZE EQUIPMENT GROUNDING CONDUCTOR PROPORTIONALLY PER NEC.

(7) THRU TIMER / CONTACTOR.

(8) PROVIDE INTERLOCK WIRING WITH EXHAUST HOOD ANSUL SYSTEM VIA CONTACTORS. REF DETAIL 3/E501 FOR ADDITIONAL INFORMATION.

(9) HACR TYPE CIRCUIT BREAKER PROVIDED BY G.C.

(10) REFER TO ONELINE DIAGRAM, 1/E601, FOR CONDUCTOR SIZES.

(11) CIRCUIT BREAKER HANDLE TIE FOR CIRCUITS SHARING NEUTRALS.

KEY NOTES

26.01	PROVIDE A 4-WIRE BRANCH-CIRCUIT CONNECTION (L1, L2, NEUTRAL, AND EQUIPMENT GROUND) FOR THE DOUBLE BATCH OVEN (ITEM 101). NEUTRAL SHALL BE ISOLATED FROM THE EQUIPMENT FRAME. PER NEC 250.140, ONLY EXISTING RANGE/DRYER BRANCH CIRCUITS ARE PERMITTED TO BOND THE NEUTRAL TO THE APPLIANCE FRAME; THEREFORE, NEW INSTALLATIONS SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR, AND THE NEUTRAL CONDUCTOR SHALL NOT BE USED FOR EQUIPMENT GROUNDING. REMOVE FACTORY BONDING STRAP (IF INSTALLED) AND TERMINATE THE EQUIPMENT GROUNDING CONDUCTOR ON THE APPLIANCE GROUNDING TERMINAL ONLY, & PROVIDE BRANCH-CIRCUIT CONDUCTORS SIZED AS FOLLOWS FOR THE DOUBLE BATCH OVEN (ITEM 101): 2#8 H + 1#8 N + 1#8 G IN 3/4" C.

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SHEET NAME

ELECTRICAL PANEL SCHEDULES

SHEET NUMBER

E602

EQUIPMENT UTILITY SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	VOLTS	PHASE	AMPS	CYCLE	APPARENT POWER	HP	CONN. PLUG	ELECTRICAL REMARKS
101	DOUBLE BATCH OVEN, ELECTRIC, VENTLESS	TURBOCHEF	HHD-9500-1	208 V	1	40.00 A	60 Hz	8.32 kVA		NEMA 6-50P	
101-3	DOUBLE BATCH OVEN, ELECTRIC, VENTLESS	TURBOCHEF	HHD-9500-14-DL	208 V	3	23.10 A	60 Hz	8.31 kVA		NEMA 15-30P	
102	WATER BATH	WINCO	ESVC-28D	120 V	1	15.00 A	60 Hz	1.80 kVA		NEMA 5-15P	
104	FRYER, VENTLESS	RESFAB	MB-50ATV	208 V	3	48.00 A	60 Hz			HARDWIRE	
112	VERITCAL CONVEYOR TOASTER	PRINCE CASTLE	CTS-WS	120 V	1	12.50 A	60 Hz	1.50 kVA		NEMA 5-15P	
114	SANDWICH PRESS	VOLLRATH	PSG4-SSF120	120 V	1	15.00 A	60 Hz	1.80 kVA		NEMA 5-15P	
115	DUAL FRYER, VENTLESS	RESFAB	MB-502ATV	208 V	3	49.00 A	60 Hz			HARDWIRE	PROVIDE TWO SEPARATE POWER SUPPLIES FOR THE LEFT AND RIGHT VATS. LEFT=49A, RIGHT=43A
117	SAUCE WARMER	SERVER PRODUCTS	86090	120 V	1	4.20 A	60 Hz	0.50 kVA		NEMA 5-15P	
120	DUAL FRYER	RESFAB	MB-502AT	208 V	3	49.00 A	60 Hz			HARDWIRE	PROVIDE TWO SEPARATE POWER SUPPLIES FOR THE LEFT AND RIGHT VATS. LEFT=49A, RIGHT=43A
121	OVEN, CONVEYOR	TURBOCHEF	HCW-9500-501-V	208 V	3	40.00 A	60 Hz	14.39 kVA		NEMA 15-50P	
122	OVEN, CONVEYOR	TURBOCHEF	HCT-9500-501-V	208 V	3	40.00 A	60 Hz	14.39 kVA		NEMA 15-50P	
124	SINGLE PLATEN DOUBLE-SIDED GRILL	TAYLOR	L850	208 V	3	24.00 A	60 Hz	8.64 kVA		L15-30P	
202B	MEGATOP FRIDGE, 72"	BEVERAGE AIR	SPE72HC-30M	120 V	1	5.40 A	60 Hz	0.65 kVA	1/3	NEMA 5-15P	
202B-X	MEGATOP FRIDGE, 72"	BEVERAGE AIR	SPE72HC-30M	120 V	1	5.40 A	60 Hz	0.65 kVA	1/3	NEMA 5-15P	
203B	UNDERCOUNTER FRIDGE, 67"	BEVERAGE AIR	UCR67AHC	120 V	1	2.00 A	60 Hz	0.24 kVA	1/5	NEMA 5-15P	
206B	PIZZA PREP, 67"	BEVERAGE AIR	DP67HC	120 V	1	4.50 A	60 Hz	0.54 kVA	1/2	NEMA 5-15P	
208B	PIZZA PREP, 93"	BEVERAGE AIR	DP93HC	120 V	1	7.80 A	60 Hz	0.94 kVA	1/2	NEMA 5-15P	
210B	WORKTOP FRIDGE, 67"	BEVERAGE AIR	WTR67AHC	120 V	1	2.00 A	60 Hz	0.24 kVA	1/5	NEMA 5-15P	
217BL	SINGLE DOOR FRIDGE (LEFT HINGED)	BEVERAGE AIR	HR1HC-1S	120 V	1	2.70 A	60 Hz	0.32 kVA	1/4	NEMA 5-15P	
217BR	SINGLE DOOR FRIDGE (RIGHT HINGED)	BEVERAGE AIR	HR1HC-1S	120 V	1	2.70 A	60 Hz	0.32 kVA	1/4	NEMA 5-15P	
217L	SINGLE DOOR FRIDGE (LEFT HINGED)	TRUE	T-23-HC	120 V	1	2.20 A	60 Hz	0.26 kVA	1/4	NEMA 5-15P	
217R	SINGLE DOOR FRIDGE (RIGHT HINGE)	TRUE	T-23-HC	120 V	1	2.20 A	60 Hz	0.26 kVA	1/4	NEMA 5-15P	
218BL	SINGLE DOOR FRIDGE/FREEZER (LEFT HINGED)	BEVERAGE AIR	CT1HC-1S	120 V	1	8.00 A	60 Hz	0.96 kVA	4/5	NEMA 5-15P	
218BR	SINGLE DOOR FRIDGE/FREEZER (RIGHT HINGED)	BEVERAGE AIR	CT1HC-1S	120 V	1	8.00 A	60 Hz	0.96 kVA	4/5	NEMA 5-15P	
218L	SINGLE DOOR FRIDGE/FREEZER (LEFT HINGED)	TRUE	T-23F-FLX-HC	120 V	1	3.70 A	60 Hz	0.44 kVA	1/2	NEMA 5-15P	
218R	SINGLE DOOR FRIDGE/FREEZER (RIGHT HINGED)	TRUE	T-23F-FLX-HC	120 V	1	3.70 A	60 Hz	0.44 kVA	1/2	NEMA 5-15P	
219	DOUBLE DOOR FRIDGE	TRUE	T-49-HC	120 V	1	5.40 A	60 Hz	0.65 kVA	1/2	NEMA-5-15P	
219B	DOUBLE DOOR FRIDGE	BEVERAGE AIR	HR2HC-1S	120 V	1	6.00 A	60 Hz	0.72 kVA	1/3	NEMA 5-15P	
220	DOUBLE DOOR FRIDGE/FREEZER	TRUE	T-49F-FLX-HC	120 V	1	9.60 A	60 Hz	1.15 kVA	1	NEMA-5-15P	
220B	DOUBLE DOOR FRIDGE/FREEZER	BEVERAGE AIR	CT2HC-1S	120 V	1	13.20 A	60 Hz	1.58 kVA	3/4+	NEMA 5-15P	
225	REFRIDERATED MERCHANDISER	TRUE	TOAM-30-HC~NSL01	120 V	1	9.50 A	60 Hz	1.14 kVA	3/4	NEMA 5-15P	
227B	UNDERCOUNTER FRIDGE, 93"	BEVERAGE AIR	UCR93AHC	120 V	1	5.00 A	60 Hz	0.60 kVA	1/3	NEMA 5-15P	
230BD	UNDERCOUNTER FRIDGE, 48"	BEVERAGE AIR	UCRD48AHC-4	120 V	1	2.00 A	60 Hz	0.24 kVA	1/6	NEMA 5-15P	
236B	WORKTOP FRIDGE, 48"	BEVERAGE AIR	WTR48AHC-FIP	120 V	1	2.20 A	60 Hz	0.26 kVA	1/6	NEMA 5-15P	
237B	MEGATOP FRIDGE, 60"	BEVERAGE AIR	SPE60HC-24M	120 V	1	5.40 A	60 Hz	0.65 kVA	1/3	NEMA 5-15P	
256	DOUBLE DOOR FREEZER	TRUE	T-49F-HC	120 V	1	9.60 A	60 Hz	1.15 kVA	1	NEMA-5-15P	
256B	DOUBLE DOOR FREEZER	BEVERAGE AIR	FB49HC-1S	120 V	1	10.00 A	60 Hz	1.20 kVA	3/4	NEMA 5-15P	
260BL	MEGATOP, 48"	BEVERAGE AIR	SPED48HC-12M-4	120 V	1	2.00 A	60 Hz	0.24 kVA	1/6	NEMA 5-15P	
261B	MEGATOP, 48"	BEVERAGE AIR	SPE48HC-18M	120 V	1	2.00 A	60 Hz	0.24 kVA	1/6	NEMA 5-15P	
261BD	MEGATOP, 48", DRAWERS	BEVERAGE AIR	SPED48HC-18M-4	120 V	1	2.00 A	60 Hz	0.24 kVA	1/6	NEMA 5-15P	
262BD	MEGATOP, 27"	BEVERAGE AIR	SPED27HC-12M	120 V	1	2.00 A	60 Hz	0.24 kVA	1/10	NEMA 5-15P	
263BD	UNDERCOUNTER FRIDGE, 36"	BEVERAGE AIR	UCRD36AHC-2	120 V	1	2.00 A	60 Hz	0.24 kVA	1/6	NEMA 5-15P	
266B	DOUBLE DOOR FRIDGE, GLASS DOORS	BEVERAGE AIR	MMR45HC-1-B	120 V	1	3.90 A	60 Hz	0.47 kVA	1/3	NEMA 5-15P	
267BD	MEGATOP, 27"	BEVERAGE AIR	SPED27HC	120 V	1	2.00 A	60 Hz	0.24 kVA	1/10	NEMA 5-15P	
301	HOT HOLD CABINET	ALTO-SHAAM	500-S	120 V	1	8.40 A	60 Hz	1.01 kVA		NEMA 5-15P	
303L	CVAP HOT HOLD CABINETS (LEFT HINGE)	WINSTON INDUSTRIES	HOV3-14UV	120 V	1	19.10 A	60 Hz	2.29 kVA		NEMA 5-20P	
303R	CVAP HOT HOLD CABINETS (RIGHT HINGE)	WINSTON INDUSTRIES	HOV3-14UV	120 V	1	19.10 A	60 Hz	2.29 kVA		NEMA 5-20P	
304	CVAP HOT HOLD CABINET, HALF HEIGHT	WINSTON INDUSTRIES	HOV5-04HP	120 V	1	15.20 A	60 Hz	1.82 kVA		NEMA 5-20P	
306	HOT FOOR WELLS TABLE	ADVANCE TABCO	HF-3E-120	120 V	1	12.50 A	60 Hz	1.50 kVA		NEMA 5-20P	
327	HEAT LAMP, 66"	HATCO CORPORATION	GRAH-66	120 V	1	13.00 A	60 Hz	1.56 kVA		NEMA 5-15P	
342	WORK STATION, 24"x48"	METRO	EZHS48W-KIT	120 V	1	3.33 A	60 Hz			NEMA 5-15P	KIT COMES WITH 3 SHELVES EACH AT 400VA LOAD. PROVIDE DEDICATED QUAD OUTLET FOR POWER
350	CRISP 'N HOLD	CARTER-HOFFMANN	CNH18	120 V	1	15.10 A	60 Hz	1.81 kVA		NEMA 5-20P	
351	FRY WARMER	HATCO CORPORATION	GRFFB-120	120 V	1	6.25 A	60 Hz	0.75 kVA		NEMA 5-15P	
355	HOT FOOD DROP-IN WELL	ALTO-SHAAM	300-HW	120 V	1	15.00 A	60 Hz	1.80 kVA		NEMA 5-20P	
356	DRAWER WARMERS	ALTO-SHAAM	500-2D	120 V	1	5.30 A	60 Hz	0.64 kVA		NEMA 5-15P	
501	DISHWASHING MACHINE, VENTLESS	CHAMPION	DH6000T-VHR	208 V	3	48.00 A	60 Hz	1.00 kVA		HARDWIRE	
504	HEATED SOAK TANK	HYGINIX	FOG TANK, STANDARD 40 GAL	120 V	1	8.33 A				NEMA 5-15P	

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SHEET NAME

ELECTRICAL UTILITY SCHEDULE

SHEET NUMBER

E603

DIVISION 26 SPECIFICATIONS

GENERAL

1. RELATED DOCUMENTS: THE ELECTRICAL DRAWINGS APPLY TO THE WORK OF THIS SECTION. THE CONTRACTOR SHALL NOTE THE DRAWINGS ARE DIAGRAMMATIC, AND INDICATE THE GENERAL INTENT OF THE PROJECT SCOPE. REFER TO DRAWINGS FROM OTHER DISCIPLINES FOR EQUIPMENT LOCATIONS AND/OR MOUNTING HEIGHTS.

2. WORK INCLUDED: PROVIDE ALL MATERIAL AND LABOR TO COMPLETE THE WORK OF THIS SECTION, AND TO ENSURE THE SYSTEMS ARE COMPLETE AND FULLY OPERATIONAL. THE SCOPE OF WORK SHALL INCLUDE, BUT IS NOT LIMITED TO:

   A. NAMEPLATES AND IDENTIFICATION
   B. RACEWAYS AND CONDUIT
   C. WIRE AND CABLE
   D. OUTLET AND JUNCTION BOXES
   E. WIRING DEVICES
   F. PANELBOARDS
   G. SAFETY DISCONNECT SWITCHES
   H. LIGHTING FIXTURES
   I. BUILDING GROUNDING SYSTEM

3. RELATED WORK OF OTHER SECTIONS: THE CONTRACTOR SHALL NOTE THE FOLLOWING SCOPE ITEMS ARE NOT INCLUDED IN THIS SECTION, BUT WILL BE PROVIDED UNDER OTHER SECTIONS:

   A. TEMPORARY CONSTRUCTION LIGHTING AND POWER
   B. AUTOMATIC TEMPERATURE CONTROL (ATC) WIRING AND ASSOCIATED CONNECTIONS
   C. PAINTING
   D. FLASHING ASSOCIATED WITH ROOF AND/OR WALL PENETRATIONS

4. QUALITY ASSURANCE:

   A. USE AN ADEQUATE NUMBER OF SKILLED LABORERS WHO ARE TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS, AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHODS NEEDED FOR THE PROPER PERFORMANCE OF THE WORK.
   B. ALL WORK SHALL BE OF THE HIGHEST QUALITY IN CONFORMANCE WITH THE BEST PRACTICES OF THE TRADE, AND IN COMPLIANCE WITH GOVERNING CODES.

5. CODES, PERMITS, FEES, REGULATIONS:

   A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE CITY'S ADOPTED INTERNATIONAL BUILDING CODE WITH AMENDMENTS, THE STATE ADOPTED NATIONAL ELECTRICAL CODE, AND ALL OTHER APPLICABLE CODES AND REGULATIONS HAVING JURISDICTION. CONTRACTOR SHALL NOTE, THE RULES AND REGULATIONS OF THE CODE(S) PROVIDE THE MINIMUM ALLOWABLE REQUIREMENTS. THE CONSTRUCTION DOCUMENTS DEPICT THE DESIGN INTENT WHICH MAY EXCEED MINIMUM CODE REQUIREMENTS.
   B. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS, AND PAY ALL FEES, DEPOSITS AND OTHER COSTS ASSOCIATED WITH THE WORK OF THIS SECTION. FILE ALL PLANS, PREPARE ALL DOCUMENTS, AND OBTAIN NECESSARY APPROVALS FROM AGENCIES HAVING JURISDICTION. OBTAIN ALL CERTIFICATES OF INSPECTION AND APPROVALS FOR THE WORK INCLUDED UNDER THIS SECTION.

6. STORAGE OF MATERIALS: STORE MATERIALS AND EQUIPMENT ON THE PREMISES WHERE DIRECTED BY THE OWNER. PROVIDE STORAGE TRAILER(S) AS REQUIRED. ALL EQUIPMENT AND MATERIALS SHALL BE STORED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, PROTECTED FROM DAMAGE. ANY EQUIPMENT AND/OR MATERIALS DAMAGED OR STOLEN BEFORE FINAL ACCEPTANCE OF THE WORK SHALL BE REPLACED AT NO COST TO THE OWNER.

7. COORDINATION WITH OTHER TRADES: THIS CONTRACTOR SHALL COOPERATE TO THE FULLEST EXTENT WITH OTHER TRADES. THE WORK EFFORT OF T HIS SECTION SHALL BE PLANNED SO AS NOT TO DELAY ANY OTHER TRADES, OR HINDER THE PROGRESS OF THE WORK.

8. INSPECTION OF SITE: PROSPECTIVE BIDDERS SHALL VISIT THE SITE, AND EXAMINE THE EXISTING CONDITIONS ASSOCIATED WITH THE PROJECT SCOPE PRIOR TO SUBMISSION OF BIDS.

9. SUPPLEMENTAL CONSTRUCTION MEANS & METHODS:

   A. SUPPORTS: PROVIDE ALL STEEL CHANNEL SUPPORTS AND HANGERS REQUIRED TO INSTALL THE EQUIPMENT/DEVICES SHOWN ON THE DOCUMENTS. STEEL CHANNEL SUPPORT SHALL BE GALVANIZED 1-5/8" MINIMUM. ALL RACEWAYS, BOXES, ETC. SHALL BE SUPPORTED FROM THE STRUCTURE INDEPENDENT OF DUCT, PIPING OR OTHER WORK.
   B. CUTTING & PATCHING: CUT AND PATCH AS REQUIRED TO FACILITATE THE PROJECT SCOPE. ALL CUTTING AND PATCHING SHALL BE KEPT TO THE MINIMUM REQUIRED. COORDINATE THE LOCATION AND SIZE OF ALL OPENINGS WITH OTHER TRADES. PROVIDE FIRESTOPPING SEALANT IN THE ANNULAR OPENING AT EACH PENETRATION.
   C. HOISTING, SCAFFOLDING, PLANKING: PROVIDE ALL HOIST, LIFTS, SCAFFOLDING, PLANKS, AND/OR OTHER MEANS OF EQUIPMENT/MATERIAL TRANSFER, (INCLUDING FURNISHING AND SET-UP PROCEDURES), REQUIRED TO COMPLETE THE INTENDED PROJECT SCOPE.

10. PROJECT CLOSE-OUT:

   A. CLEANING: CLEAN ALL EQUIPMENT -INTERIOR AND EXTERIOR, FROM CONSTRUCTION DUST AND DEBRIS. SURFACES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED IF REQUIRED BY THE OWNER. COLLECT ALL EQUIPMENT/PANELBOARD KEYS AND TURN OVER TO THE OWNER.
   B. WARRANTY: PROVIDE MANUFACTURER'S STANDARD REPLACEMENT WARRANTIES FOR EQUIPMENT AND MATERIAL PROVIDED UNDER THIS SECTION.
   C. GUARANTEE: PROVIDE ONE YEAR GUARANTEE AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP AFTER FINAL ACCEPTANCE BY OWNER.

SHOP DRAWING SUBMITTALS

1. CONTRACTOR SHALL SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA SHEETS FOR ALL SPECIFIED MATERIALS AS LISTED BELOW.

   A. PANELBOARDS & CIRCUIT BREAKERS
   B. METERING EQUIPMENT
   C. TRANSFORMERS
   D. SWITCHBOARDS
   E. SAFETY DISCONNECT SWITCHES
   F. LIGHT FIXTURES & CONTROLS

2. PROVIDE SPECIFIED EQUIPMENT/DEVICES UNLESS "OR APPROVED EQUAL" IS SPECIFICALLY INDICATED. REVISIONS RESULTING FROM DEVIATION FROM THE SPECIFICATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

RACEWAYS:

1. PRODUCTS

   A. ELECTRICAL METALLIC TUBING (EMT) SHALL BE ZINC-COATED STEEL. EMT CONDUIT FITTINGS SHALL BE SET-SCREW STYLE MADE OF ZINC PLATED PRESSED STEEL.
   B. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE ZINC-COATED STEEL. RGS CONDUIT FITTINGS SHALL BE THREADED.
   C. RIGID NONMETALLIC CONDUIT (PVC) SHALL BE SCHEDULE-40 -RESISTANT TO SUNLIGHT AND LISTED FOR USE OUTDOORS. ASSOCIATED FITTINGS AND SOLVENT CEMENT SHALL BE PRODUCED BY THE SAME MANUFACTURER.
   D. CONDUIT ELBOWS SHALL BE STANDARD RADIUS UNLESS SPECIAL / LARGE RADIUS ELBOWS SPECIFICALLY NOTED.
   E. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LFMC) SHALL BE HEAVY GAUGE, CORROSION RESISTANT, HOT DIPPED GALVANIZED STEEL WITH PVC EXTRUDED JACKET. LFMC SHALL BE AS MANUFACTURED BY ELECTRI-FLEX TYPE-LA, OR APPROVED EQUAL.

2. EXECUTION

   A. EMT SHALL BE PROVIDED IN CONCEALED LOCATIONS, AND IN EXPOSED INTERIOR LOCATIONS WHERE NOT SUBJECT TO PHYSICAL DAMAGE. THE USE OF EMT IN WET AND/OR EXTERIOR APPLICATIONS IS NOT ALLOWED.
   B. RGS SHALL BE PROVIDED IN EXPOSED INTERIOR LOCATIONS BELOW 8'-0" AFF WHERE SUBJECT TO PHYSICAL DAMAGE. RGS SHALL BE PROVIDED IN ALL WET/EXTERIOR APPLICATIONS.
   C. PVC CONNECTIONS SHALL BE MADE WITH SOLVENT CEMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PVC SHALL NOT BE UTILIZED FOR PENETRATIONS OF CONCRETE SLABS OR BUILDING WALLS/FOUNDATIONS. PVC SHALL TRANSITION TO RGS AT EACH BUILDING ENTRY/EXIT POINT, (FLOOR AND/OR WALL PENETRATION).
   D. ALL CONDUITS SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE.
   E. ALL CONDUITS SHALL BE ROUTED/INSTALLED PERPENDICULAR AND/OR PARALLEL TO THE BUILDING STRUCTURE.
   F. PVC SHALL ONLY BE USED BELOW GRADE. TRANSITION TO RGS PRIOR TO EMERGING FROM GRADE
   G. LFMC SHALL BE PROVIDED TO ACCOMMODATE CONNECTIONS TO TRANSFORMERS, AND/OR EQUIPMENT SUBJECT TO MOVEMENT / VIBRATION. LFMC SHALL BE PROVIDED IN ALL MECHANICAL EQUIPMENT ROOMS, WET/EXTERIOR LOCATIONS, AND WHERE SPECIFICALLY INDICATED ON THE DRAWINGS. OR SLAB.

WIRE AND CABLE:

1. PRODUCTS

   A. CONDUCTORS SHALL BE COPPER, RATED 600V 75°/90° C. ALUMINUM CONDUCTORS ARE NOT ALLOWED.
   B. BRANCH CIRCUIT CONDUCTORS SHALL BE DEFINED AS CONDUCTORS SIZE #10 AWG AND SMALLER. BRANCH CIRCUIT CONDUCTORS SHALL HAVE TYPE THHN-THWN INSULATION.
   C. FEEDER CIRCUIT CONDUCTORS SHALL BE DEFINED AS CONDUCTORS SIZE #8 AWG AND LARGER. FEEDER CIRCUIT CONDUCTORS SHALL HAVE TYPE XHHW INSULATION.
   D. CONDUCTORS SIZE #12 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS SIZE #10 AWG AND LARGER SHALL BE STRANDED.
   E. MC CABLE ASSEMBLIES MAY BE SUBSTITUTED IN LIEU OF WIRE AND CONDUIT FOR BRANCH CIRCUITS IN THE WALL AND ABOVE CEILING ONLY. ALL TERMINATIONS INTO THE PANEL SHALL BE CONDUIT AND WIRE FROM THE PANEL TO ABOVE THE CEILING.

2. EXECUTION

   A. HOMERUN DESIGNATIONS INDICATED ON THE DRAWINGS ARE DIAGRAMMATIC. PROVIDE COMPLETE CIRCUITRY FROM POWER SOURCE TO LOAD. ALL CIRCUITS SHALL INCLUDE A FULL SIZE GROUNDING CONDUCTOR.

WIRING DEVICES:

1. PRODUCTS

   A. WIRING DEVICES SHALL BE HEAVY-DUTY SPECIFICATION GRADE AS MANUFACTURED BY HUBBELL, OR APPROVED EQUAL. ALL WIRING DEVICES SHALL BE PROVIDED FROM THE SAME MANUFACTURER.
      DUPLEX RECEPTACLE:
         HUBBELL HBL 5362 W (WHITE)
         HUBBELL HBL 5362 BK (BLACK)
      GFCI DUPLEX RECEPTACLE:
         HUBBELL HBL GFR 5362SGW (WHITE)
         HUBBELL HBL GFR 5362SGBK (BLACK)
      USB+C RECEPTACLE:
         HUBBELL USB20AC5WWR (WHITE)
         HUBBELL USB20AC5BKWR (BLACK)
      MARKETING SCREEN RECEPTACLE:
         LEVITON 2-GANG WHITE DUPLEX OUTLET/QUICKPORT PLATE RECESSED
      SINGLE-POLE SWITCH:
         HUBBELL HBL 1221W (WHITE)
      THREE-WAY SWITCH:
         HUBBELL HBL 1223W (WHITE)
   B. SPECIAL PURPOSE AND/OR TWIST-LOCK RECEPTACLES SHALL BE AS MANUFACTURED BY HUBBELL. REFER TO DRAWINGS FOR NEMA CONFIGURATION.
   C. DEVICE PLATES SHALL BE SMOOTH THERMOPLASTIC FROM THE SAME MANUFACTURER AS THE WIRING DEVICES AND/OR SWITCHES.
   D. WHITE RECEPTACLES SHALL BE PLACED ON WHITE WALLS AND BLACK RECEPTACLES PLACED ON GREEN WALLS

2. EXECUTION

   A. ALL WIRING DEVICES SHALL BE EQUIPPED WITH AN ADHESIVE P-TOUCH STYLE CIRCUIT IDENTIFICATION LABEL INDICATING THE RESPECTIVE PANELBOARD/POWER SOURCE AND CIRCUIT NUMBER. ALL SPECIAL PURPOSE AND/OR TWIST-LOCK RECEPTACLES SHALL BE EQUIPPED WITH AN ENGRAVED NAMEPLATE.
   B. ALL SPECIAL PURPOSE AND/OR TWIST-LOCK RECEPTACLES SHALL BE EQUIPPED WITH AN ENGRAVED NAMEPLATE.

PANELBOARDS:

1. PRODUCTS:

   A. PANELBOARDS SHALL BE DOOR-IN-DOOR CONSTRUCTION WITH COPPER BUS. BRANCH CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC BOLT-ON STYLE. GENERAL PURPOSE LIGHTING AND APPLIANCE PANELBOARDS SHALL BE SQUARE D TYPE NQOD FOR 208Y/120V APPLICATIONS, AND SQUARE D TYPE NF FOR 480Y/277V APPLICATIONS.
   B. PANELBOARDS SHALL BE AS MANUFACTURED BY SQUARE D, EATON CUTLER-HAMMER, GENERAL ELECTRIC OR SIEMENS.

2. EXECUTION

   A. EACH PANELBOARD SHALL BE PROVIDED WITH A TYPED CIRCUIT DIRECTORY INDICATING THE RESPECTIVE AREA AND/OR LOAD SERVED FOR EACH CIRCUIT. THE CIRCUIT DIRECTORY SHALL BE MOUNTED WITHIN A CLEAR PLASTIC HOLDER BEHIND THE PANELBOARD DOOR. HANDWRITTEN CIRCUIT DIRECTORIES ARE NOT ALLOWED.

TRANSFORMERS:

1. PRODUCTS:

   A. DRY-TYPE TRANSFORMERS (DOE 2016) SHALL BE OF THE ENCLOSED VENTILATED TYPE WITH KVA AND VOLTAGE RATING AS CALLED FOR ON THE DRAWINGS AND WITH 150° CLASS H INSULATION AND MINIMUM OF SIX STANDARD FULL CAPACITY TAPS. SOUND LEVEL SHALL BE LOW AND INSTALLATION SHALL INCLUDE KORFUND OR EQUAL VIBRATION DAMPENING MOUNTS AND FLEXIBLE STEEL CONDUIT FOR PRIMARY AND SECONDARY. (MOUNT TRANSFORMER ON VIBRATION ISOLATORS). LOCATE TRANSFORMER AS NOT TO CAUSE SERVICING OR CLEARANCE DIFFICULTIES OF VIOLATIONS WITH OTHER EQUIPMENT.
   B. COMPARABLE EQUIPMENT AS MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, SIEMENS OR EATON.

2. EXECUTION

   A. EXAMINE CONDITIONS FOR COMPLIANCE WITH ENCLOSURE- AND AMBIENT-TEMPERATURE REQUIREMENTS FOR EACH TRANSFORMER.
   B. VERIFY THAT FIELD MEASUREMENTS ARE AS NEEDED TO MAINTAIN WORKING CLEARANCES REQUIRED BY NFPA 70 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
   C. EXAMINE WALLS, FLOORS, ROOFS, AND CONCRETE BASES FOR SUITABLE MOUNTING CONDITIONS WHERE TRANSFORMERS WILL BE INSTALLED.
   D. VERIFY THAT GROUND CONNECTIONS ARE IN PLACE AND REQUIREMENTS HAVE BEEN MET. MAXIMUM GROUND RESISTANCE SHALL BE 5 OHMS AT LOCATION OF TRANSFORMER.
   E. INSTALL WALL-MOUNTED TRANSFORMERS LEVEL AND PLUMB WITH WALL BRACKETS FABRICATED BY TRANSFORMER MANUFACTURER COORDINATE INSTALLATION OF WALL-MOUNTED AND STRUCTURE-HANGING SUPPORTS WITH ACTUAL TRANSFORMER PROVIDED.

SAFETY DISCONNECT SWITCHES:

1. PRODUCTS

   A. DISCONNECT SWITCHES SHALL BE RATED 600V, 3-POLE HEAVY-DUTY TYPE. PROVIDE NEMA-1 ENCLOSURE FOR DRY/INTERIOR APPLICATIONS, AND NEMA-3R ENCLOSURE FOR WET/EXTERIOR APPLICATIONS. DISCONNECT SWITCHES SHALL BE HORSEPOWER RATED.
   B. SAFETY DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY SQUARE D, EATON CUTLER-HAMMER, GENERAL ELECTRIC, OR SIEMENS. 7. MOTOR STARTERS: A) COMBINATION MAGNETIC MOTOR STARTER / FUSIBLE DISCONNECT SWITCHES SHALL BE NEMA RATED, 600V. REFER TO MOTOR STARTER SCHEDULE FOR ADDITIONAL SPECIFICATION REQUIREMENTS.
   C. COMBINATION STARTERS SHALL BE AS MANUFACTURED BY SQUARE D, EATON CUTLER-HAMMER, GENERAL ELECTRIC, OR SIEMENS.
   D. MANUAL SINGLE-PHASE MOTOR STARTERS SHALL BE EATON CUTLER-HAMMER TYPE MS, OR APPROVED EQUAL BY GENERAL ELECTRIC, SIEMENS OR SQUARE D.
   E. MANUAL THREE-PHASE MOTOR STARTERS SHALL BE EATON CUTLER-HAMMER TYPE B100, OR APPROVED EQUAL BY GENERAL ELECTRIC, SIEMENS OR SQUARE D.

2. EXECUTION

   A. PROVIDE CLASS J, L OR R FUSES TO ACCOMMODATE SPECIFIED LOAD. B) DISCONNECT SWITCHES SHALL BE EQUIPPED WITH AN ENGRAVED PLASTIC NAMEPLATE INDICATING POWER SOURCE AND LOAD INFORMATION.

LIGHT FIXTURES:

1. PRODUCTS

   A. LIGHT FIXTURES SHALL BE PROVIDED AS SPECIFIED ON THE DRAWINGS.

2. EXECUTION

   A. LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE WITH THREADED ROD AND/OR SAFETY JACK CHAIN. SUPPORT FROM OTHER BUILDING SYSTEMS, (E.G. CONDUIT, PIPING, DUCTWORK, ETC.) IS NOT ALLOWED.
   B. LIGHTING FIXTURES SHALL REMAIN COVERED/PROTECTED UPON INSTALLATION TO PREVENT DUST AND DEBRIS FROM ENTERING THE FIXTURE. ALL LIGHTING FIXTURES SHALL BE CLEANED -WIPED FREE OF DUST AND DEBRIS AT PROJECT COMPLETION.

LIGHTING CONTROLS

   A. LIGHTING CONTROLS SHALL BE PROVIDED AS SPECIFIED ON THE DRAWINGS.
   B. CONCEAL CONDUCOTRS AND CABLES IN ACCESSIBLE CEILINGS, WALLS, AND FLOORS WHERE POSSIBLE.

GROUNDING:

   A. A. CONTRACTOR SHALL INSTALL GROUNDING PER N.E.C. ARTICLE 250 EQUIPMENT GROUNDING SHALL USE ONLY APPROVED GROUNDING CLAMPS AND CONNECTORS AS MANUFACTURED BY PENN-UNION, BURNDY, OR O-Z MFG. COMPANY.
   B. GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250 AND THE UTILITY COMPANY REGULATIONS. CONTRACTOR SHALL CONNECT THE GROUNDING ELECTRODE CONDUCTORS TO THE NEUTRAL BAR INSIDE THE MAIN PANEL.
   C. THE EQUIPMENT GROUNDING SYSTEM SHALL CONSIST OF A CONTINUOUS CONDUIT INSTALLATION AND A GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR. THIS GROUNDING CONDUCTOR SHALL BE INSTALLED IN EVERY CONDUIT OR RACEWAY WITH THE FEEDER OR BRANCH CIRCUIT CONDUCTORS. THIS GROUNDING SHALL BE EXTENDED FROM THE HOUSING OF EVERY ELECTRICAL LOAD, THROUGH PANELBOARD STATIC GROUNDING BUSSES, TO THE STATIC GROUNDING BUS IN THE MAIN PANEL. THE GROUNDING BUS SHALL BE BONDED TO THE GROUNDING NEUTRAL BAR INSIDE THE MAIN PANEL.

ON-SITE ASSISTANCE AND OPERATION AND MAINTENANCE INSTRUCTIONS

1. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH OWNER A TIME TO BE ON SITE TO PROVIDE ASSISTANCE TO OWNER TO BECOME FAMILIAR WITH ELECTRICAL EQUIPMENT OPERATION.

2. COLLECT AND COMPILE A COMPLETE BROCHURE OF FIXTURES AND EQUIPMENT FURNISHED AND INSTALLED ON THIS PROJECT. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS, WIRING DIAGRAMS, AND DESCRIPTIVE LITERATURE FURNISHED BY THE MANUFACTURER. INCLUDE AN INSIDE COVER SHEET THAT LISTS THE PROJECT NAME, DATE, OWNER, ARCHITECT, ENGINEER, GENERAL CONTRACTOR, SUB-CONTRACTOR, AND AN INDEX OF CONTENTS. SUBMIT COPIES OF LITERATURE BOUND IN APPROVED BINDERS TO THE ARCHITECT AND OWNER AT THE TERMINATION OF THE WORK. PAPER CLIPS, STAPLES, RUBBER BANDS, AND MAILING ENVELOPES ARE NOT CONSIDERED APPROVED BINDERS.

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NO.	DATE	DESCRIPTION
0	10/08/2025	ISSUE FOR PERMIT
1	11/25/2025	BUILDING COMMENTS

DRAWN BY

CHECKED BY

ARCH. PROJECT NO.:

CDR25024.0 DESIGN ID: D3-51-A9.E3

SHEET NAME

ELECTRICAL SPECIFICATIONS

SHEET NUMBER

E901

DIVISION 22 SPECIFICATIONS

GENERAL

1. IT IS THE RESPONSIBILITY OF CONTRACTOR TO READ ALL SPECIFICATIONS AND CONSULT ALL DRAWINGS WHICH MAY AFFECT THE INSTALLATION AND COORDINATION OF WORK WITH OTHER TRADES. CONTRACTOR SHALL COORDINATE AND MAKE MINOR ADJUSTMENTS IN LOCATION OF EQUIPMENT AND MATERIALS AS NECESSARY FOR COORDINATION.

2. PRIOR TO SUBMITTING BID, VISIT THE SITE OF THE PROPOSED WORK AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

3. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL, AT A MINIMUM, BE IN CONFORMANCE WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES HAVING JURISDICTION. EQUIPMENT FURNISHED AND ASSOCIATED INSTALLATION WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN STRICT COMPLIANCE WITH CURRENT APPLICABLE CODES ADOPTED BY THE LOCAL AHJ INCLUDING ANY AMENDMENTS AND STANDARDS AS SET FORTH BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), UNDERWRITERS LABORATORIES (UL), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AMERICAN SOCIETY OF MECHANICAL ENGINEEERS (ASME), AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS (ASHRAE), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) AND OTHER NATIONAL STANDARDS AND CODES WHERE APPLICABLE. WHERE THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THEIR REFERENCED CODES, STANDARDS, ETC., THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE.

4. ALL WORK SHALL BE PERFORMED BY OR UNDER DIRECT SUPERVISION OF AN INDIVIDUAL HOLDING THE REQUIRED LICENSE FOR THE TRADE OF THE WORK BEING PERFORMED, AS REQUIRED BY LOCAL CODE.

5. SYSTEM LAYOUT IS SCHEMATIC AND EXACT LOCATIONS SHALL BE DETERMINED BY STRUCTURAL CONDITIONS, COORDINATION WITH OTHER TRADES, COORDINATION WITH FINISHES AND OTHER CONDITIONS. STRUCTURAL SUPPORTS SHALL NOT BE CUT OR ALTERED TO ASSURE FIT OF HVAC SYSTEM. TEN FOOT CLEARANCE SHALL BE MAINTAINED BETWEEN OUTSIDE AIR INTAKES AND EXHAUST FANS AND PLUMBING VENT TERMINALS.

6. ALL DIMENSIONS, CLEARANCES AND TOLERANCES SHALL BE VERIFIED PRIOR TO INSTALLATION. ALL ROUGH-IN LOCATIONS SHALL BE COORDINATED WITH THE MANUFACTURER'S SUBMITTAL INFORMATION.

7. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ITS LISTING AND/OR THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

8. ALL PENETRATIONS OF FIRE-RATED WALLS SHALL BE FIRESTOPPED WITH AN APPROVED AND LISTED FIRESTOPPING SYSTEM.

9. UPON COMPLETION OF PROJECT, ALL SYSTEM EQUIPMENT AND MATERIALS SHALL BE IN NEW, CLEAN CONDITION WITH ALL DAMAGE RESTORED TO CONDITION ACCEPTABLE TO THE OWNERS REPRESENTATIVE. ALL EQUIPMENT AND ASSOCIATED COMPONENTS SHALL BE INSPECTED AND THOROUGHLY CLEANED, CLEARED OF DEBRIS, AND READY FOR USE. AT COMPLETION OF JOB, ALL MISCELLANEOUS TOOLS, SCAFFOLDING, SURPLUS MATERIALS, RUBBISH AND DEBRIS SHALL BE REMOVED BY CONTRACTOR.

10. PROVIDE NEW MATERIAL, EQUIPMENT, AND APPARATUS UNDER THIS CONTRACT UNLESS OTHERWISE STATED HEREIN, OF BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE, AND FREE FROM ANY DEFECTS. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT NECESSARILY INTENDED TO DESIGNATE THE REQUIRED TRIM. WRITTEN DESCRIPTIONS OF THE TRIM GOVERN MODEL NUMBERS.

11. THE COMPLETE INSTALLATION SHALL FUNCTION AS DESIGNED AND INTENDED WITH RESPECT TO EFFICIENCY, CAPACITY, NOISE LEVEL, ETC. ABNORMAL NOISE CAUSED BY RATTLING EQUIPMENT, PIPING, DUCTS, AIR DEVICES, AND SQUEAKS IN ROTATING COMPONENTS WILL NOT BE ACCEPTABLE. IN GENERAL, MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL TYPE EQUIPMENT WILL NOT BE ACCEPTED.

12. REPAIR OR REPLACE PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT TO THE SATISFACTION OF AUTHORITIES AND REGULATIONS HAVING JURISDICTION.

COORDINATION

1. COORDINATE WORK WITH THAT OF OTHER TRADES SO THAT THE VARIOUS COMPONENTS OF THE SYSTEMS WILL BE INSTALLED AT THE PROPER TIME, WILL FIT THE AVAILABLE SPACE, AND WILL ALLOW PROPER SERVICE ACCESS TO THOSE ITEMS REQUIRING MAINTENANCE. COMPONENTS WHICH ARE INSTALLED WITHOUT REGARD TO THE ABOVE SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.

2. UNLESS OTHERWISE INDICATED, THE GENERAL CONTRACTOR WILL PROVIDE CHASES AND OPENINGS IN BUILDING CONSTRUCTION REQUIRED FOR INSTALLATION OF THE SYSTEMS SPECIFIED HEREIN. CONTRACTOR SHALL FURNISH THE GENERAL CONTRACTOR WITH INFORMATION WHERE CHASES AND OPENINGS ARE REQUIRED. KEEP INFORMED AS TO THE WORK OF OTHER TRADES ENGAGED IN THE CONSTRUCTION OF THE PROJECT, AND EXECUTE WORK IN A MANNER AS TO NOT INTERFERE WITH OR DELAY THE WORK OF OTHER TRADES.

3. FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALE DIMENSIONS. CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE BUILDING, AS VARIATIONS MAY OCCUR. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ERRORS THAT COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION.

4. PROVIDE MATERIALS WITH TRIM THAT WILL PROPERLY FIT THE TYPES OF CEILING, WALL, OR FLOOR FINISHES ACTUALLY INSTALLED. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT INTENDED TO DESIGNATE THE REQUIRED TRIM.

SHOP DRAWING SUBMITTALS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR OWNER APPROVAL TO THE CONSTRUCTION MANAGER FOR THE FOLLOWING ITEMS:
   A. WATER HEATERS
   B. PUMPS
   C. GREASE INTERCEPTORS
   D. FLOOR DRAINS
   E. FLOOR SINKS
   F. CLEANOUTS
   G. WALL HYDRANTS.

PIPING AND MATERIALS

1. MATERIALS SPECIFIED OR NOTED ON THE DRAWINGS ARE SUBJECT TO THE APPROVAL OF LOCAL CODE AUTHORITIES. VERIFY APPROVAL BEFORE INSTALLING ANY MATERIAL OR JOINING METHOD.

2. DOMESTIC WATER (COLD, HOT, SOFT) PIPING INSTALLED ABOVE THE FLOOR SLAB INSIDE THE BUILDING SHALL BE:
   A. TYPE "L" HARD TEMPER COPPER TUBE WITH WROUGHT COPPER FITTINGS.
   B. CROSS-LINKED POLYETHYLENE (PEX) PIPE: ASTM F876 OR ASTM F877.

3. FITTINGS AND SOLDERED CONNECTIONS MADE UP WITH 95/5 SOLDER. BRAZED MECHANICALLY FORMED TEE CONNECTIONS (T-DRILL) MAY BE USED IN COPPER LINES WHERE APPROVED BY CODE; CONNECTION SHALL BE MADE WITH BRAZED SILVER SOLDER (SILFOS) JOINTS IN CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS.

4. UNDERGROUND DOMESTIC WATER PIPING SHALL BE TYPE "K" HARD TEMPER COPPER TUBING WITH CONVENTIONAL WROUGHT COPPER FITTINGS AND SILVER SOLDER (SILFOS) JOINTS. INSTALL AS FEW UNDERGOUND COPPER PIPING JOINTS AS POSSIBLE. AT BUILDING SERVICE ENTRANCE, NO JOINTS SHALL BE INSTALLED UNDER OR WITHIN 5 FEET OF THE BUILDING. INSTALL DOMESTIC WATER PIPING BELOW GRADE OUTSIDE BUILDING AT ADEQUATE DEPTH TO PREVENT FREEZING.

5. INTERIOR WASTE AND VENT BELOW SLAB: WASTE AND VENT PIPE BELOW SLAB INSIDE BUILDING SHALL BE STANDARD WIEGHT CAST IRON SOIL PIPE WITH BELL AND SPIGGOT FITTINGS WITH NEOPRENE GASKET JOINTS. HUBLESS WASTE AND VENT PIPE IS NOT PERMITTED BELOW BASE SLAB. SOLID WALL PVC DWV PIPE WITH SOCKET FITTINGS AND SOLVENT WELD JOINTS IS ALSO PERMITTED WHERE APPROVED BY CODE. PVC IN A PLENUM CAVITY SHALL BE FIRE WRAPPED OR ENCASED IN 5/8" GYPBOARD.

6. INTERIOR WASTE AND VENT ABOVE SLAB: WASTE AND VENT PIPE ABOVE SLAB INSIDE BUILDING SHALL BE HUBLESS CAST IRON SOIL PIPE AND FITTINGS WITH HUBLESS COUPLINGS. SOLID WALL PVC DWV PIPE WITH SOCKET FITTINGS AND SOLVENT WELD JOINTS IS ALSO PERMITTED WHERE APPROVED BY CODE. PVC IN A PLENUM CAVITY SHALL BE FIRE WRAPPED OR ENCASED IN 5/8" GYPBOARD.

7. INTERIOR STORM DRAIN: INSIDE BUILDING SHALL BE SAME AS SPECIFIED FOR INTERIOR WASTE AND VENT PIPE.

8. INDIRECT AND CONDENSATE DRAIN INSIDE BUILDING: INDIRECT AND CONDENSATE DRAIN PIPE INSTALLED INSIDE THE BUILDING SHALL BE TYPE "M" HARD COPPER WITH WROUGHT COPPER FITTINGS FOR 1" AND SMALLER AND "DWV" COPPER WITH WROUGHT COPPER DRAINAGE.

9. PATTERN FITTINGS FOR 1-1/4 " AND LARGER HARD TEMPER COPPER TUBE AND SOLDERED CONNECTIONS MADE WITH 95/5 SOLDER. INSTALL CLEANOUTS AT ELBOWS GREATER THAN 45 DEGREES.

10. GAS PIPING: GAS PIPING SHALL BE BLACK STEEL, STANDARD WEIGHT, SCHEDULE 40 ASTM A53.
    A. PIPING 2" AND SMALLER SHALL BE WELDED OR THREADED WITH MALLEABLE IRON FITTINGS.
    B. PIPING 2 1/2" AND LARGER SHALL BE WELDED WITH BUTT-WELDED FITTING. FITTINGS SHALL CONFORM TO ASME B16.3, MALLEABLE IRON OR ASTM A 234, FORGED STEEL WELDED TYPE.

11. AIR PIPING: COMPRESSED AIR PIPING SHALL BE TYPE "K" HARD COPPER PIPE IN ACCORDANCE WITH ASTM B 88 WITH WROUGHT COPPER FITTINGS (NIBCO OR APPROVED EQUIVALENT). FITTINGS SHALL BE FURNISHED IN ACCORDANCE WITH MSS SP-73 AND SHALL BE INSTALLED USING BRAZED JOINTS.

PIPING AND EQUIPMENT INSULATION

1. DOMESTIC COLD WATER, HOT WATER, INDIRECT AND CONDENSATE DRAIN PIPE (WITHIN BUILDING): 1" THICK ONE-PIECE FIBERGLASS COVERING WITH FIRE-RESISTANT JACKET WITH SELF-SEALING LAP TO PROVIDE A CONTINUOUS VAPOR BARRIER BY CERTAINTEED, OWENS-CORNING OR ARMSTRONG. FOR PIPING AT HANGERS PROVIDE 8" LONG SECTIONS OF HIGH DENSITY, HIGH TEMPERATURE CALCIUM SILICATE BY JOHNS-MANVILLE, FIBERGLASS BY KNAUF, OR 8" LONG STYROFOAM BILLETS BY DOW. INSULATION SHALL BE CONTINUOUS ALONG THE PIPE SURFACE, EXCEPT AT VALVES, UNIONS, AND WHERE PIPING IS EXPOSED AT FIXTURES.

2. FOR HOT AND COLD WATER PIPING INSTALLED INSIDE MASONRY UNITS OF WALLS, PROVIDE ½" FLEXIBLE UNICELLULAR INSULATION BY ARMACELL.

3. COVER FITTINGS WITH ZESTON, KNAUF, OR EQUAL ONE-PIECE PVC PREMOLDED INSULATING COVERS. FITTING COVERS, JACKETS AND ADHESIVES SHALL NOT EXCEED FLAME SPREAD RATING OF 25 AND SMOKE EVELOPMENT RATING OF 50 PER ASTM E84. AT ALL ELBOWS AND TEES, FILL VOIDS BETWEEN COVERS AND PIPING WITH FIBERGLASS INSULATION AND TAPE JOINTS. INSTALL PIPE INSULATION IN COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS. WHERE PREMOLDED INSULATING FITTINGS ARE NOT APPROVED BY LOCAL AUTHORITIES, MITER INSULATION AT FITTINGS.

ON-SITE ASSISTANCE AND OPERATION AND MAINTENANCE INSTRUCTIONS

1. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH OWNER A TIME TO BE ON SITE TO PROVIDE ASSISTANCE TO OWNER TO BECOME FAMILIAR WITH PLUMBING EQUIPMENT OPERATION.

2. COLLECT AND COMPILE A COMPLETE BROCHURE OF FIXTURES AND EQUIPMENT FURNISHED AND INSTALLED ON THIS PROJECT. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS, WIRING DIAGRAMS, AND DESCRIPTIVE LITERATURE FURNISHED BY THE MANUFACTURER. INCLUDE AN INSIDE COVER SHEET THAT LISTS THE PROJECT NAME, DATE, OWNER, ARCHITECT, ENGINEER, GENERAL CONTRACTOR, SUB-CONTRACTOR, AND AN INDEX OF CONTENTS. SUBMIT COPIES OF LITERATURE BOUND IN APPROVED BINDERS TO THE ARCHITECT AND OWNER AT THE TERMINATION OF THE WORK. PAPER CLIPS, STAPLES, RUBBER BANDS, AND MAILING ENVELOPES ARE NOT CONSIDERED APPROVED BINDERS.

PIPING INSTALLATION

1. GENERAL: CLEAN PIPE THROUGHLY PRIOR TO INSTALLATION. REAM ENDS OF PIPE TO REMOVE BURRS. CUT PIPE ACCURATELY TO MEASUREMENTS TAKEN ON THE JOB. INSTALL WITH ADEQUATE CLEARANCE FOR INSTALLATION OF COVERINGS WHERE REQUIRED. PIPE SHALL NOT BE SPRUNG OR BENT. NEATLY ALIGN PIPE, CONNECT IT SECURELY, AND SUPPORT IT FROM THE BUILDING STRUCTURE WITH HANGERS AS SPECIFIED BELOW. PROVIDE CHROME-PLATED ESCUTCHEONS ON PIPES PASSING THROUGH CEILINGS, FLOORS OR WALLS OF FINISHED SPACES. RUN PIPES FREELY THROUGH FLOOR AND WALL PENETRATIONS USING PIPE SLEEVES. DO NOT GROUT IN PLACE UNLESS REQUIRED FOR STRUCTURAL FIRE INTEGRITY. INSTALL PIPE CONCEALED IN FINISHES SPACES WHEREVER POSSIBLE. USE A DIELECTRIC UNION WHERE FERROUS AND COPPER PIPE CONNECT. DIELECTRIC UNION SHALL HAVE A ZINC-PLATED STEEL BODY, A THREADED NYLON INSERT, AND INSULATING PRESSURE GASKET. NO FERROUS METAL-TO-COPPER CONNECTION MADE WITHOUT INSULATING UNIONS WILL BE ALLOWED.

2. HANGER & SUPPORTS: PIPE HANGERS SHALL BE AS DESCRIBED IN THE SPECIFICATIONS BY B-LINE OR EQUAL BY ANVIL, MICHIGAN, TRUSCON, OR UNISTRUT. CONNECT HANGERS TO THE STRUCTURE WITH SIDE BEAM CONNECTORS AND ALL THREAD HANGER RODS. PROVIDE ENGINEERED SUPPORT STRUTS BETWEEN JOISTS AND OTHER STRUCTURAL MEMBERS AS REQUIRED TO PROVIDE A RIGID HANGING INSTALLATION. DO NOT HANG PIPES FROM OTHER PIPES, CONDUIT OR DUCTWORK. PROVIDE HANGER RODS AND SPACE HANGERS AT INTERVALS AS REQUIRED.

3. SUPPORT SPACING:
   A. COPPER UP TO 1-1/4" I.D.: 6'-0" MAX
   B. COPPER ALL OTHER: 10'-0" MAX
   C. STEEL: 12'-0" MAX.
   D. CAST IRON: 5'-0" MAX, EXCEPT MAY BE 10'-0" MAX WHERE 10'-0" LENGTHS ARE INSTALLED. MIN ONE HANGER AT EACH JOINT.
   E. PEX: 32" MAX

4. SOIL, WASTE AND STORM: GRADE SOIL AND WASTE PIPING TO A UNIFORM SLOPE OF NOT LESS THAN 1/8" PER FOOT FOR PIPING 4" OR LARGER, AND NOT LESS THAN ¼" PER FOOT FOR PIPING 3" OR SMALLER. SLOPE STORM PIPING AT 1/8" PER FOOT. LAY PIPE AT UNIFORM SLOPE, FREE FROM SAGS, WITH HUB END UPSTREAM. SUPPORT PIPE AT EACH JOINT, MAKE CHANGES IN DIRECTION FROM HORIZONTAL TO VERTICAL, AT FIXTURE BRANCHES AND OTHER BRANCH CONNECTIONS WITH SANITARY "TEES" OR SHORT SWEEP "ELLS". MAKE CHANGES IN DIRECTION FROM VERTICAL TO HORIZONTAL OR IN THE HORIZONTAL WITH LONG RADIUS FITTINGS, LONG SWEEPING "ELLS", COMBINATION "Y" FITTINGS, OR 45 DEGREE "ELLS" (1/8 BEND FITTINGS) AND "Y" FITTINGS.

5. DOMESTIC WATER: ARRANGE COLD, HOT AND HOT WATER RECIRCULATION PIPING TO DRAIN AT THE LOWEST POINT IN EACH SYSTEM. INSTALL AT LEAST ONE PIPE UNION ADJACENT TO ALL SHUTOFF VALVES, AT CONNECTION POINT OF EACH PIECE OF EQUIPMENT, AND ELSEWHERE IN THE SYSTEM WHERE REQUIRED TO ALLOW PROPER MAINTENANCE. PROVIDE UNIONS OF THE GROUND JOINT TYPE. MAKE ALLOWANCE FOR EXPANSION AND CONTRACTION WHERE REQUIRED BY THE INSTALLATION. WHERE WATER PIPING OCCURS IN EXTERIOR WALLS, HOLD PIPE AS CLOSE AS POSSIBLE TO THE INTERIOR FACE OF WALL AND INSTALL INSULATION BATT OR OTHER INSULATION (MINIMUM R-13) BETWEEN PIPING AND THE EXTERIOR WALL FACE.

EXTERIOR UTILITY CONNECTIONS

1. TERMINATE DOMESTIC WATER, STORM, AND SEWER LINES AT A POINT APPROXIMATELY FIVE FEET FROM THE BUILDING WALL, OR AS SHOWN ON THE DRAWINGS. MAKE CONNECTION TO THE VARIOUS SERVICES PROVIDED BY OTHERS AND COORDINATE CONNECTION REQUIREMENTS WITH CIVIL ENGINEER. VERIFY THAT INSTALLATION WILL TIE INTO THE VARIOUS SERVICES PROVIDED BY OTHERS AT THE INDICATED INVERT ELEVATION POINT PRIOR TO INSTALLATION. IF THE INSTALLATION WILL NOT TIE INTO THE INDICATED INVERT ELEVATION POINT WHILE MAINTAINING PROPER FALL, NOTIFY ARCHITECT AND CIVIL ENGINEER SO THAT AN ALTERNATIVE MAY BE DETERMINED.

2. PROVIDE SERVICE PIPING AND ACCESSORIES REQUIRED TO COMPLETE UTILITY CONNECTIONS THAT ARE NOT FURNISHED BY THE SERVING UTILITY.

SYSTEM TESTING AND ADJUSTING

1. UPON COMPLETION OF EACH PHASE OF THE INSTALLATION, TEST EACH SYSTEM IN CONFORMANCE WITH LOCAL CODE REQUIREMENTS AND AS NOTED BELOW. FURNISH LABOR AND EQUIPMENT REQUIRED TO TEST PLUMBING WORK INSTALLED UNDER THIS CONTRACT, AND ASSUME COSTS INVOLVED IN MAKING THE TESTS, AND REPAIRING AND/OR REPLACING DAMAGE RESULTING THEREFROM.

2. NOTIFY THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION, THREE (3) WORKING DAYS PRIOR TO MAKING PLUMBING SYSTEM TESTS. LEAVE CONCEALED WORK UNCOVERED UNTIL THE REQUIRED TESTS HAVE BEEN COMPLETED, BUT IF NECESSARY DUE TO CONSTRUCTION PROCEDURE, TESTS ON PORTIONS OF THE WORK MAY BE MADE, AND WHEN SATISFACTORY, THE WORK MAY BE CONCEALED. TEST PIPING BEFORE INSULATION IS INSTALLED, AND BEFORE BACKFILL. PIPES, JOINTS, FLANGES, VALVE STEMS, ETC., SHALL BE LEAK TIGHT. REPAIR OR REPLACE SYSTEM DEFECTS WITH NEW MATERIALS. CAULKING OF DEFECTIVE JOINTS, CRACKS OR HOLES WILL NOT BE PERMITTED. REPEAT TESTS AFTER DEFECTS HAVE BEEN ELIMITATED. MAKE TESTS IN THE PRESENCE OF THE ADMINISTRATIVE AUTHORITY AND/OR THE OWNER'S AUTHORIZED REPRESENTATIVE.

GUARANTEE

1. THE WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL INCLUDE THE FURNISHING, INSTALLATION, AND CONNECTION OF PLUMBING SYSTEMS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS. BY SIGNING THE CONTRACT, THE CONTRACTOR ACKNOWLEDGES THAT HE HAS ACQUAINTED HIMSELF WITH THE SITE AND THE EXISTING CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, AND THE DRAWINGS AND SPECIFICATIONS PERTAINING THERETO, AND HE INDICATES THAT HE WILL COMPLY WITH THE REQUIREMENTS AND INTENT OF PERTINENT DOCUMENTS IN THE PERFORMANCE OF THE WORK.

2. GUARANTEE THAT THE PLUMBING INSTALLED UNDER THIS CONTRACT IS FREE OF DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF JOB ACCEPTANCE BY THE OWNER. THIS SHALL INCLUDE A GUARANTEE OF FREE CIRCULATION OF LIQUIDS THROUGHOUT THE SYSTEM AS INTENDED WITHOUT LEAKS, EXCESSIVE NOISE, OR WATER HAMMER.

3. IF DEFECTS OCCUR DURING THE ONE YEAR GUARANTEE PERIOD, REPAIR OR REPLACE SUCH DEFECTS AT NO EXPENSE TO THE OWNER, AND TO THE SATISFACTION OF THE OWNER, ARCHITECT AND ENGINEER.

PLUMBING LEGEND

SYMBOL	DESCRIPTION
SS	SANITARY WASTE (SS)
V	VENT LINE (V)
	COLD WATER (CW)
	HOT WATER (HW)
	HOT WATER RETURN (HWR)
G	NATURAL GAS (G)
FW	FILTERED WATER
CD	CONDENSATE DRAIN (CD)
RD	ROOF DRAIN LEADER
OD	OVERFLOW DRAIN LEADER
PD	PUMP DRAINAGE LINE (PD)
GW	GREASE WASTE LINE (GW)
	VENT THRU ROOF (VTR)
	POINT OF CONNECTION.
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	GAS COCK
	GATE VALVE (SHUT OFF)
S	EMERGENCY SOLENOID VALVE
	PRESSURE REDUCING VALVE
	UNION (DIELECTRIC)
	FLOOR DRAIN (F.D.)
	FLOOR SINK (F.S.)
	ROOF DRAIN (R.D.)
	OVER FLOW DRAIN
CO FCO	SURFACE / FLOOR CLEANOUT
CO WCO	CLEANOUT / WALL CLEANOUT

*** ALL SYMBOLS ON LEGEND MAY NOT APPLY TO DRAWING(S). ***

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SHEET NAME

PLUMBING SHEET SPECIFICATIONS, SYMBOLS AND NOTES

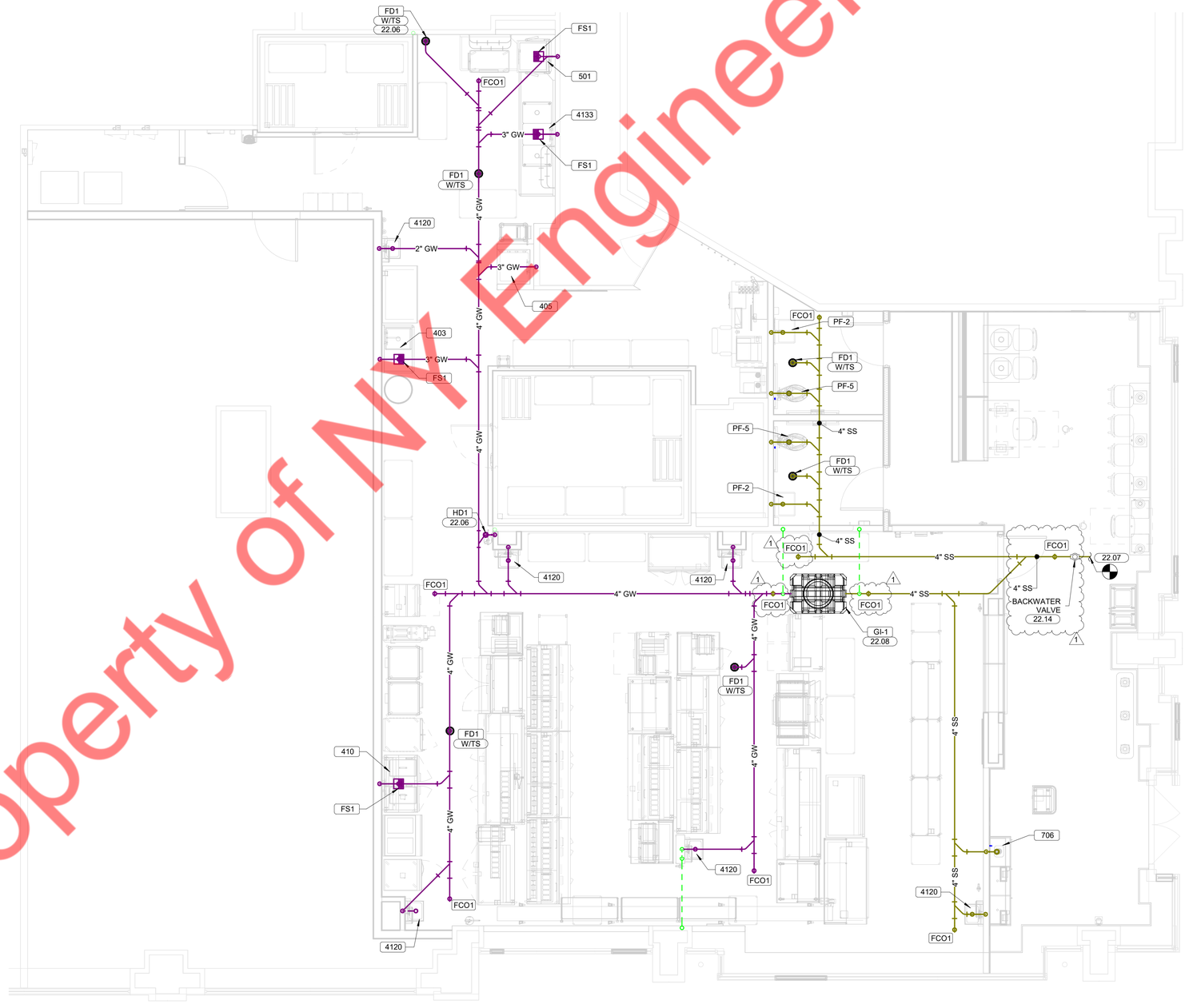
SHEET NUMBER

P001

KEYNOTES	
22.06	CONDENSATE PIPING INSTALLED BY KEC VENDOR. CONDENSATE PIPING LOCATED IN THE FREEZER SHALL BE PROPERLY INSULATED WITH HEAT TRACE, GC TO VERIFY HEAT TAPE IS FUNCTIONAL PRIOR TO BRINGING FREEZERS DOWN TO OPERATING TEMPERATURE. ROUTE CONDENSATE PIPING DOWN WALL AND DRAIN TO HUB DRAIN WITH APPROVED AIR GAP. PROVIDE P-TRAP IN CONDENSATE LINE UPSTREAM OF TERMINATION POINT.
22.07	CONNECT NEW 4" SANITARY LINE TO EXISTING 4" SANITARY WASTE LINE IN THE SPACE. CONTRACTOR TO FIELD VERIFY EXISTING SANITARY SIZE, ROUTING AND INVERT ON SITE.
22.08	NEW SCHIER GB-75 GREASE INTERCEPTOR. INSTALL GREASE INTERCEPTOR UNDERGROUND AND AS PER THE MANUFACTURER'S RECOMMENDATION. CONTRACTOR TO COORDINATE FINAL LOCATION AND SIZE OF GREASE INTERCEPTOR AS PER THE LOCAL HEALTH JURISDICTION AND BASE BID ACCORDINGLY. GC TO SCAN SLAB PRIOR TO INSTALLATION.
22.09	CONTRACTOR TO FIELD VERIFY THE INVERT ELEVATION OF THE BUILDING SANITARY LINE AND THE UPSTREAM CITY SEWER MANHOLE AND PROVIDE A BACKWATER VALVE ON THE BUILDING SANITARY LINE AS REQUIRED.

GENERAL NOTES

1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER 2017 WASHINGTON DC ENERGY CONSERVATION CODE. (IECC 2015)
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
4. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, & SHUT-OFF VALVES AS REQUIRED.
5. ANY ROOF PENETRATION SHALL BE PERFORMED BY LANDLORD'S ROOFERS AT LANDLORD OPTION , A BONDED ROOFER APPROVED IN ADVANCE BY LANDLORD.
6. PROVIDE TRAP PRIMER/ SEAL ON FLOOR DRAIN AS PER LOCAL JURISDICTION.
7. PRIOR TO CUTTING CONCRETE FOR ROUTING OF NEW PLUMBING, CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE SIZE AND LOCATION. ACTUAL ROUTING AND INVERT ELEVATIONS. IF CONFLICT EXISTS NOTIFY ENGINEER OF RECORD.
8. EVAPORATE SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXACT LOCATION.



1 FIRST FLOOR DWV PLAN

1/4" = 1'-0"

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SHEET NAME

DWV PLAN

SHEET NUMBER

P111

KEYNOTES

22.01	PROVIDE ASSE 1070 OR SIMILAR APPROVED TEMPERING VALVE FOR LAVATORIES AND HAND SINK. SET AT TEMPERATURE TO A MAXIMUM 110°F
22.04	CONNECT NEW 1-1/2" CW LINE WITH SHUT OFF VALVE TO EXISTING CW IN THE SPACE . CONTRACTOR TO FIELD VERIFY EXISTING CW LINE SIZE, LOCATION AND PRESSURE.
22.05	WATER PRESSURE TO BUILDING SHALL BE A MINIMUM OF 55 PSI STATIC DOWNSTREAM OF THE METER AND BACKFLOW. CONTRACTOR SHALL CONTACT ENGINEER OF RECORD IF MINIMUM PRESSURE CANNOT BE MAINTAINED.
22.08	BELOW SLAB CONDUIT FOR WATER PIPING TO HAND SINK. 3" DIA SOLID-WALL SCHED 40 PVC USED AS CONDUIT. NO FOAM CORE ALLOWED BELOW SLAB. USE LONG RADIUS SWEEPS. CAP EACH END DURING ROUGH-IN TO ENSURE PIPING INTERIOR REMAINS DRY, WATER-TIGHT, AND CLEAR OF DIRT AND DEBRIS DURING CONSTRUCTION. REFER TO UNDERSLAB PIPING TRANSITION DETAIL.
22.09	PLUMBING CONTRACTOR TO INSTALL WATER FILTER PROVIDED WITH WATER FILL STATION.
22.10	ROUTE WATER HEATER DRAIN TO NEAREST FLOOR DRAIN WITH APPROVED AIR GAP.
22.11	EXTEND AND CONNECT NEW 3" VENT LINE WITH TO EXISTING VENT LINE IN THE SPACE . CONTRACTOR TO FIELD VERIFY EXISTING VENT LINE SIZE AND LOCATION.
22.12	CONTRACTOR TO FIELD VERIFY THE AVAILABILITY OF EXISTING BFP. PROVIDE NEW AS SHOWN ON PLAN IF NOT EXISTING. BASE BID ACCORDINGLY.
22.13	PROVIDE ASSE 1022 BACKFLOW PREVENTOR FOR WATER DISPENSER AND WATER FILL STATION.

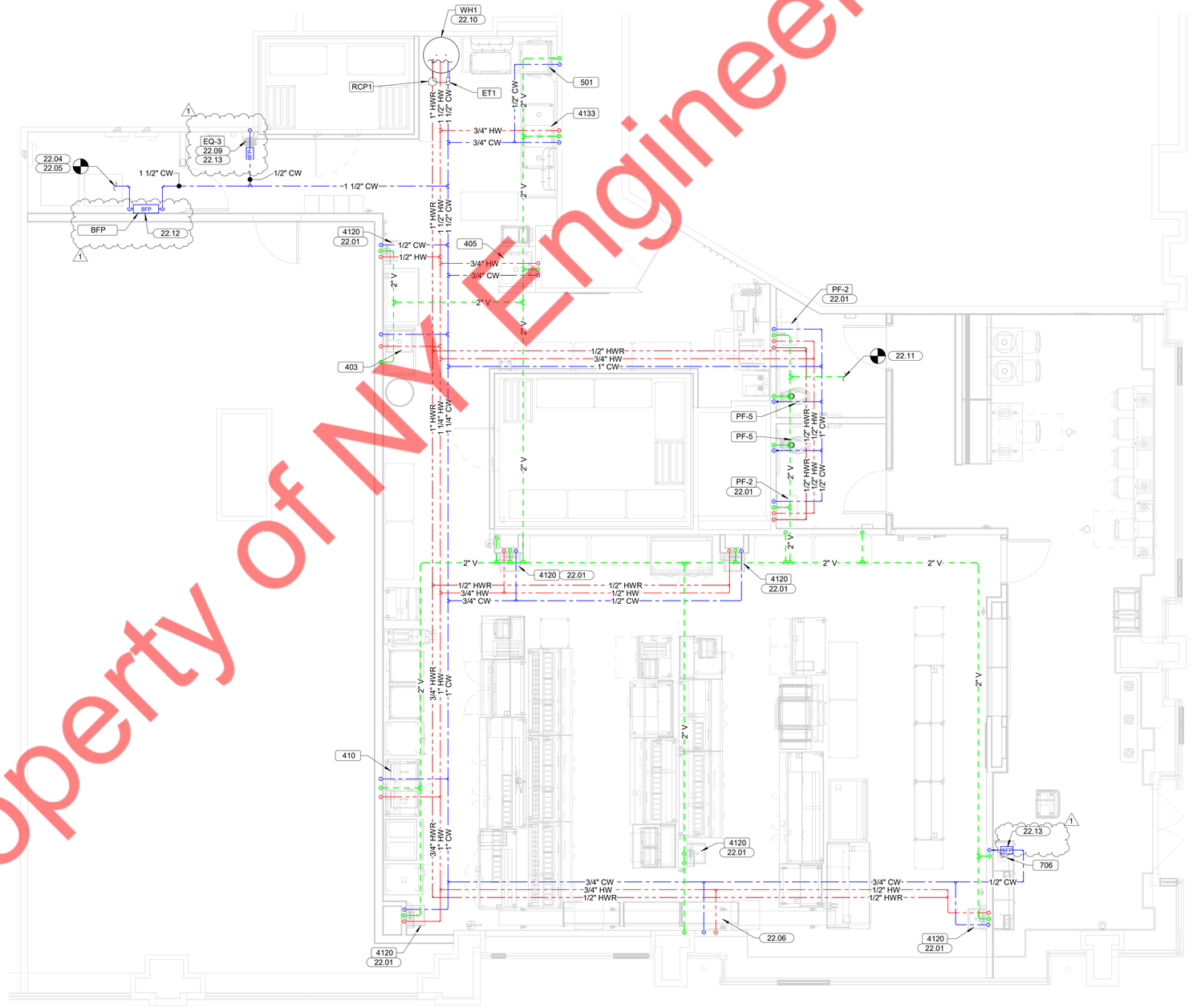
GENERAL NOTES

1. CW/HW PIPING TO BE PROVIDED WITH INSULATION AS PER 2017 WASHINGTON DC ENERGY CONSERVATION CODE. (IECC 2015)
2. PROVIDE BRANCH PRV IF PRESSURE EXCEEDS 80 PSI.
3. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION AS PER STRUCTURAL REQUIREMENT.
4. PROVIDE ACCESS PANELS FOR WATER HAMMER ARRESTOR, & SHUT-OFF VALVES AS REQUIRED.
5. ANY ROOF PENETRATION SHALL BE PERFORMED BY LANDLORD'S ROOFERS AT LANDLORD OPTION , A BONDED ROOFER APPROVED IN ADVANCE BY LANDLORD.
6. PROVIDE TRAP PRIMER/ SEAL ON FLOOR DRAIN AS PER LOCAL JURISDICTION.
7. PROVIDE BACKFLOW PREVENTION DEVICE TO EQUIPMENTS IF ANY AS PER REQUIREMENT.

WATER CALCULATIONS

PLUMBING FIXTURE	QUANTITY	WSFU	WSFU TOTAL
3 COMP SINK	1	4.0	4.0
1 COMP SINK	1	4.0	4.0
HAND SINK	5	0.7	4.2
MOP SINK	1	3.0	3.0
DISHWASHER	1	1.4	1.4
POT FILLER	1	2.0	2.0
WATER FILL STATION	1	0.25	0.25
EMPLOYEE WATER DISPENSER	1	0.25	0.25
WATER CLOSET	2	10.0	20.0
LAVATORY	2	2.0	4.0
TOTAL WSFU, PER TABLE E103.3(2)			43.1
GPM, PER TABLE E103.3(3)			50
PRESSURE LOSS (PSI/100FT)			2.2
MAXIMUM DEVELOPED LENGTH (FT), WITH TYPICAL FITTING LOSSES			250
REQUIRED MINIMUM PRESSURE AT EQUIPMENT (DISHWASHER) (PSI)			45
PRESSURE LOSS FROM TOTAL DEVELOPED LENGTH (PSI)			5.5
PRESSURE LOSS ACROSS METER & TAP (PSI)			5.5
PRESSURE LOSS ACROSS BACKFLOW PREVENTER (PSI)			15.2
REQUIRED MINIMUM PRESSURE, AT MAIN (PSI)			70.1
REQUIRED MINIMUM PRESSURE, DOWNSTREAM OF BACKFLOW PREVENTER (PSI)			55
MINIMUM REQUIRED DISTRIBUTION LINE SIZE (IN)			2
MINIMUM REQUIRED TAP & METER SIZE (IN)			2

NOTES:
1. CONTRACTOR TO FIELD VERIFY BEFORE START OF CONSTRUCTION THAT THE AVAILABLE SERVICE PRESSURE IS EQUAL TO OR GREATER THAN THE REQUIRED MINIMUM SERVICE PRESSURE LISTED ABOVE. CONTACT ENGINEER IF PRESSURE DOES NOT MEET MINIMUM REQUIREMENTS.
2. CONTRACTOR TO VERIFY TAP & WATER METER SIZE IS EQUAL TO OR LARGER THAN SIZE LISTED IN TABLE ABOVE.



1 WATER PLAN
1/4" = 1'-0"

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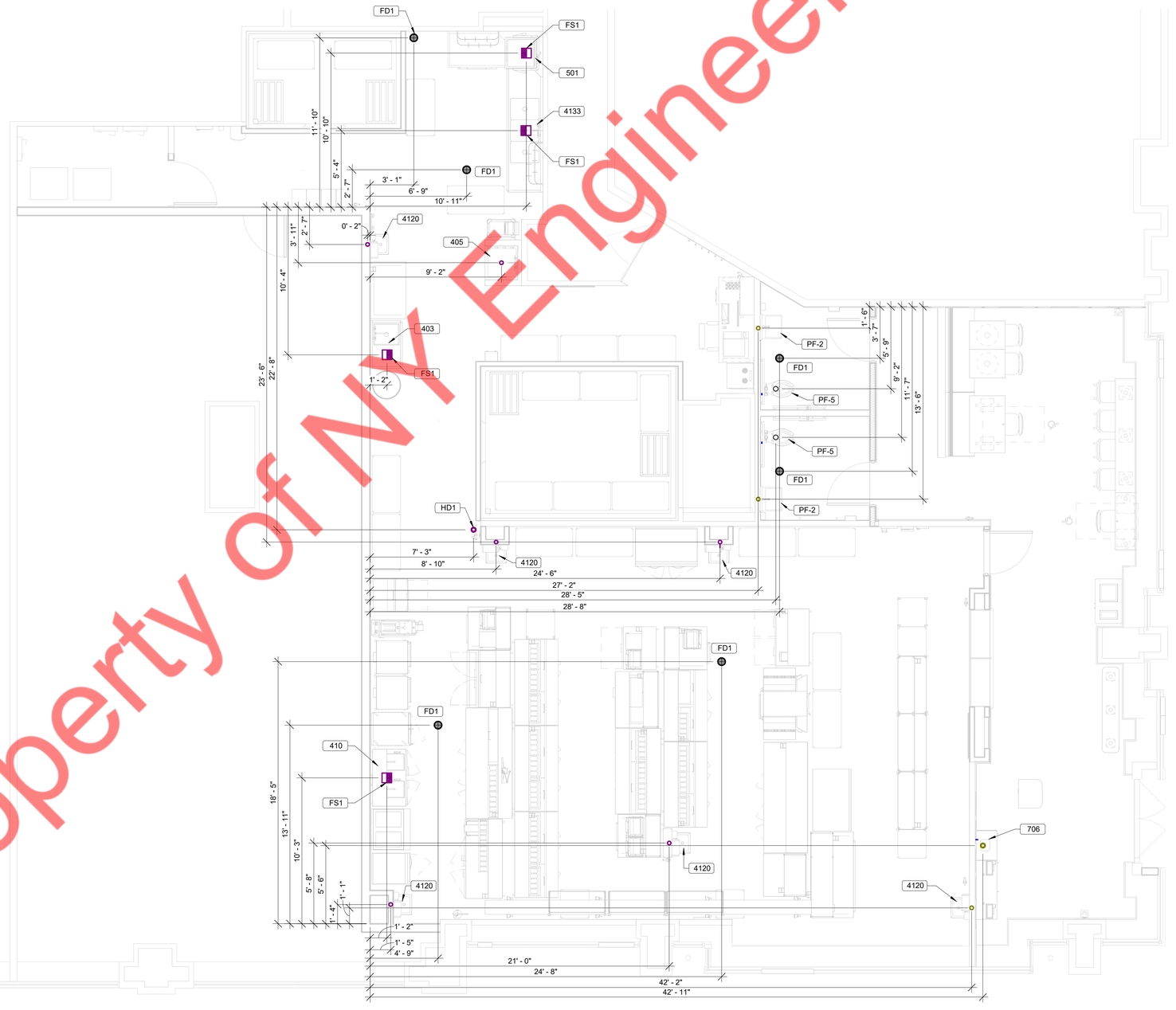
WATER PLAN
SHEET NUMBER
P121

GENERAL NOTES

GC TO SCAN THE SLAB PRIOR TO ANY SLAB PENETRATION. NOTIFY DESIGN AND PM TEAM IMMEDIATELY IF ANY CONFLICTS EXIST.



1 SLAB PENETRATION PLAN

1/4" = 1'-0"

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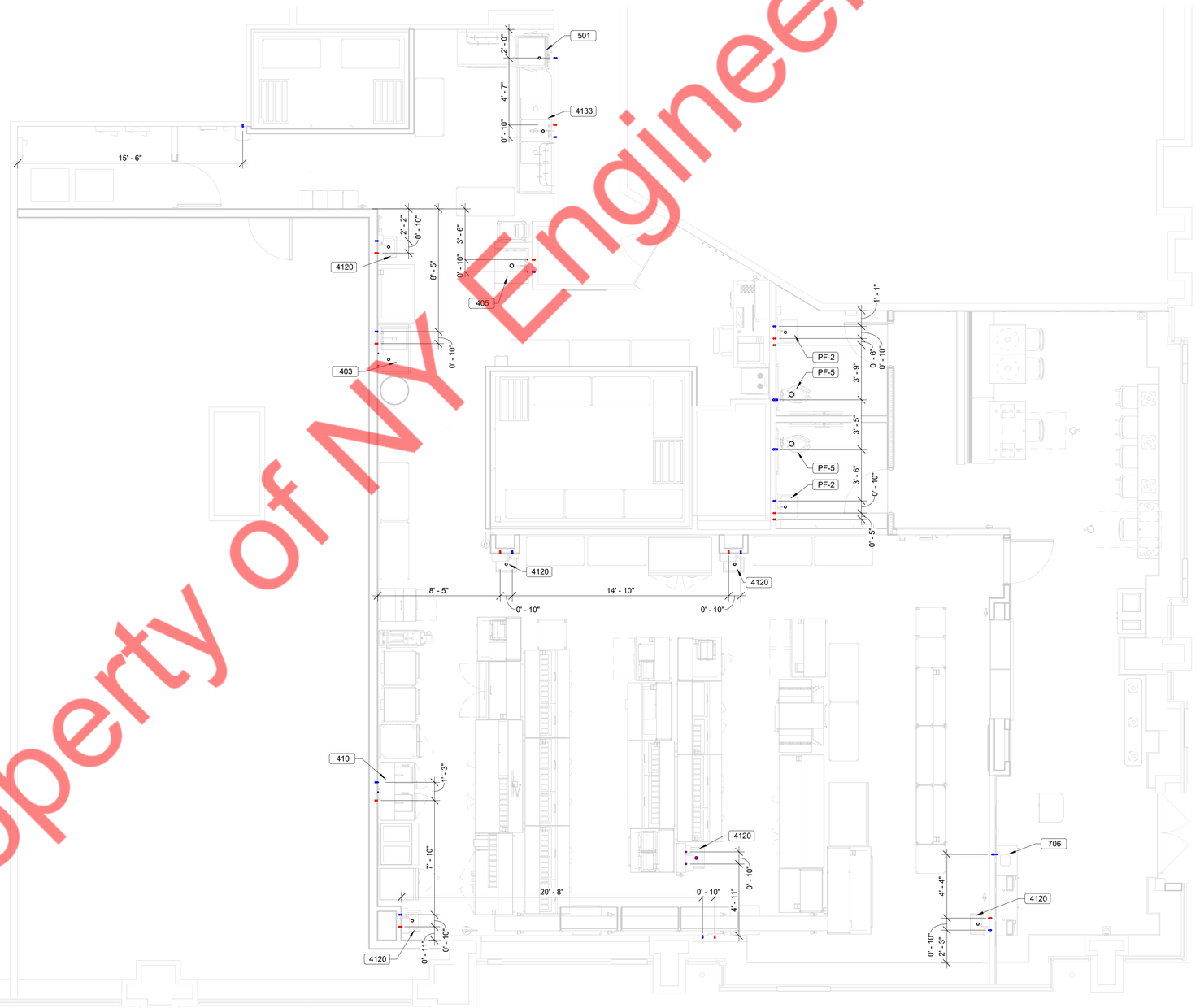
SHEET NAME

SLAB PENETRATION PLAN

SHEET NUMBER

P141



1 ROUGH-IN DIMENSION PLAN

1/4" = 1'-0"

P P E

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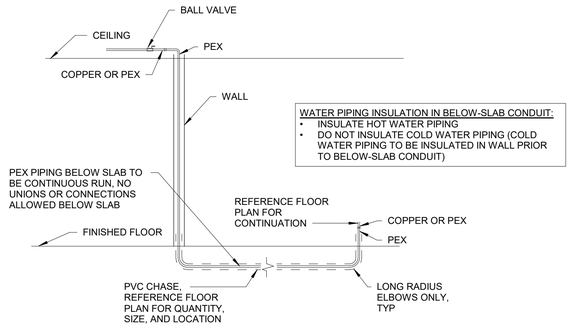
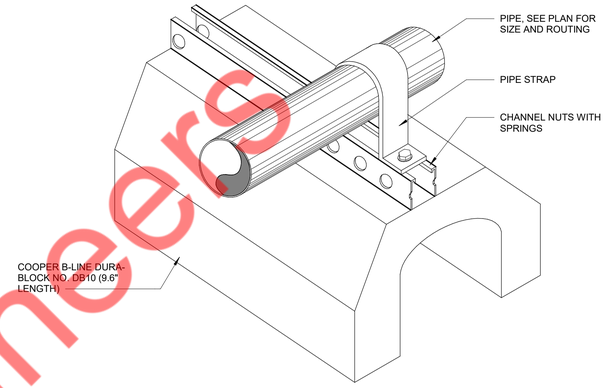
ROUGH-IN DIMENSION PLAN

SHEET NUMBER

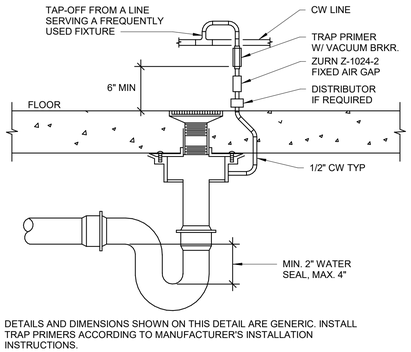
P151



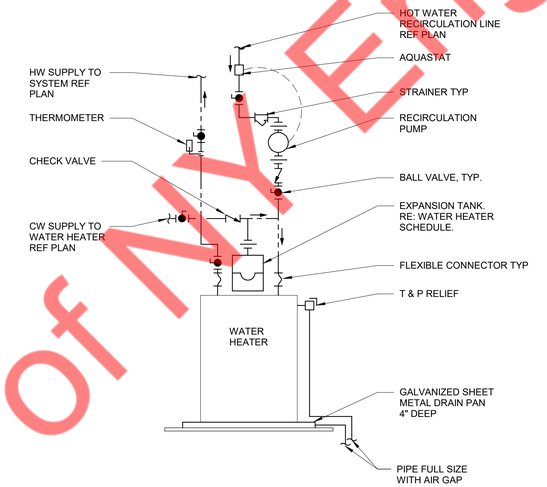
7 UNDERSLAB PIPING TRANSITION
NTS



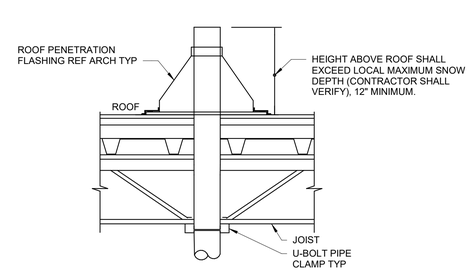
6 SINGLE-PLY ROOF PIPE SUPPORT DETAIL
NTS



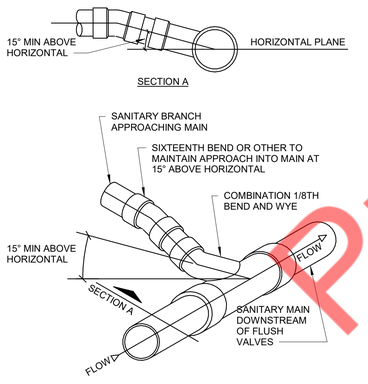
5 TRAP PRIMER DETAIL
NTS



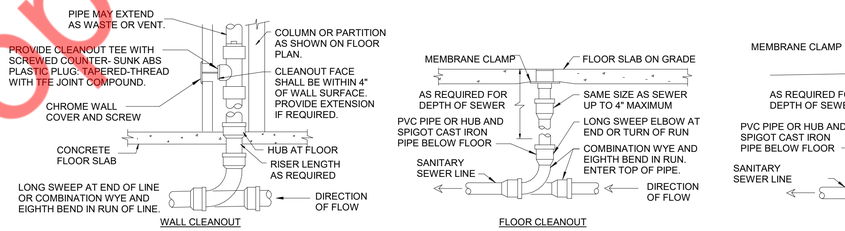
4 WATER HEATER W/ RECIRCULATION PUMP
NTS



3 VENT THRU ROOF (VTR)
NTS



2 DWV BRANCH CONNECTION DOWNSTREAM OF TOILET
NTS



PROVIDE WCO WHERE SHOWN ON PLAN, AND ON SANITARY WASTE BRANCHES NOT SERVED WITH A FLOOR CLEANOUT: LOCATE ABOVE FIXTURE FLOOD RIM WITHIN 4' OF FLOOR. CONSULT CODE FOR OTHER WCO REQUIREMENTS.

LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45 DEGREES, AT 50' INTERVALS ON STRAIGHT RUNS, AND/OR WHERE SHOWN ON PLANS. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS. LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND. CONSULT CODE FOR OTHER FCO REQUIREMENTS.

ROUND SECURED GASKETED NICKEL BRONZE ADJUSTABLE TOP WITH "CO" CAST IN COVER. PROVIDE CLEANOUT TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKER, RECESSED FOR TILE, SCORIATED FOR UNFINISHED FLOORS). PROVIDE GASKETED PLASTIC PLUG IN CAST IRON BODY. USE TEFLON JOINT COMPOUND ON PLUG THREADS. CLEAN THE TOP OF EXPOSED FCO AFTER INSTALLATION.

1 CLEANOUT DETAILS
NTS

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SHEET NAME
PLUMBING DETAILS

SHEET NUMBER
P501

DOMESTIC FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	VOL. PER FLUSH	CONNECTION SIZES					NOTES
					DIRECT WASTE	INDIRECT WASTE	VENT	COLD WATER	HOT WATER	
PF-2	LAVATORY	KOHLER	SOHO K-2084-0	---	2"	---	1-1/2"	1/2"	1/2"	FOH FAUCET: KOHLER K-33590-4N-BL MANUAL SPOUT, SINGLE TEMPERATURE SUPPLY PROVIDE WITH GRID STRAINER, LOOSE KEY STOPS, P-TRAP WITH CLEANOUT, TAIL PIECE AND ESCUTCHEON. VERIFY FINISHES WITH ARCH PLANS. PROVIDE WITH ASSE 1070 APPROVED THERMOSTATIC TEMPERATURE LIMITING DEVICE (TMV). MOUNT AT HANDICAPPED ACCESSIBLE HEIGHT. BOH FAUCET: KOHLER K-33590-4N-CP MANUAL SPOUT, SINGLE TEMPERATURE SUPPLY PROVIDE WITH GRID STRAINER, LOOSE KEY STOPS, P-TRAP WITH CLEANOUT, TAIL PIECE AND ESCUTCHEON. VERIFY FINISHES WITH ARCH PLANS. PROVIDE WITH ASSE 1070 APPROVED THERMOSTATIC TEMPERATURE LIMITING DEVICE (TMV). MOUNT AT HANDICAPPED ACCESSIBLE HEIGHT. 0.5 GPM (1.9 LPM)MAXIMUM FLOW RATE AT 60 PSI (4.14 BAR) 1
PF-5	WATER CLOSET - FLOOR MOUNT - FLUSH VALVE - ADA	KOHLER	HIGHCLIFF ULTRA K-96057-SS-0	1.28 GPF	4"	---	2"	1-1/4"	---	ELONGATED FLOOR MOUNTED WATER CLOSET, WITH KOHLER K-4670-SA-0 WHITE ELONGATED OPEN FRONT SEAT. INSTALL AT ADA COMPLIANT HEIGHT. 1-1/2" TOP SPUD. WASTE ROUGH-IN 12" FROM WALL SURFACE. FLUSHOMETER: KOHLER K-76321-CP PRIMME MANUAL 1.28 GPF.

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING AND OTHER REQUIREMENTS FOR ALL TAS/ADA FIXTURES.
2. INSULATE PIPING BELOW FIXTURES PER TAS/ADA REQUIREMENTS.

KITCHEN EQUIPMENT SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	FAUCET/VALVE SELECTION		CONNECTION SIZES					NOTES
				MANUFACTURER	MODEL	DIRECT WASTE	INDIRECT WASTE	VENT	COLD WATER	HOT WATER	
403	ONE COMPARTMENT SINK	JOHN BOOS	1B184-1D18L-X	KROWNE METAL	14-810L	---	2"	---	1/2"	1/2"	REFER TO KITCHEN EQUIPMENT PLANS (ARCH) FOR MORE INFORMATION.
405	MOP SINK	JOHN BOOS	PBMS2424-6	KROWNE METAL	16-127	3"	---	1-1/2"	3/4"	3/4"	REFER TO KITCHEN EQUIPMENT PLANS (ARCH) FOR MORE INFORMATION.
410	POT FILLER	-	-	KROWNE METAL	20-108L	---	2"	---	1/2"	1/2"	REFER TO KITCHEN EQUIPMENT PLANS (ARCH) FOR MORE INFORMATION.
501	DISHWASHER	CHAMPION	DH6000T-VHR	---	---	---	1-1/2"	---	3/4"	---	REFER TO KITCHEN EQUIPMENT PLANS (ARCH) FOR MORE INFORMATION. PROVIDE WITH DRAIN TEMPERING KIT.
706	WATER FILL STATION	-	-	FISHER	89494	---	3/4"	---	3/8"	---	REFER TO KITCHEN EQUIPMENT PLANS (ARCH) FOR MORE INFORMATION.
4120	HAND SINK	BK RESOURCES	BKHS-W-1410-SS-P-G	JOHN BOOS	INCLUDED	2"	---	1-1/2"	1/2"	1/2"	PROVIDE TMV. REFER TO KITCHEN EQUIPMENT PLANS (ARCH) FOR MORE INFORMATION.
4133	THREE COMPARTMENT SINK	JOHN BOOS	DT3B18244-2D24R	KROWNE METAL	17-109WL	---	2"	---	1/2"	1/2"	REFER TO KITCHEN EQUIPMENT PLANS (ARCH) FOR MORE INFORMATION.
EQ-3	WATER DISPENSER	-	-	-	-	---	---	---	3/8"	---	REFER TO KITCHEN EQUIPMENT PLANS (ARCH) FOR MORE INFORMATION.

FLOOR DRAIN SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL	NOTES
FD1	FLOOR DRAIN	JAY R SMITH	2005B-NB-P050	GENERAL SERVICE FLOOR DRAIN WITH DUCO CAST IRON BODY, SEDIMENT BUCKET, FLASHING CLAMP AND 6" SQUARE ADJUSTABLE NICKEL BRONZE STRAINER WITH VANDAL PROOF SCREWS. PROVIDE WITH TRAP PRIMER CONNECTION. OUTLET SIZE AS INDICATED ON DRAWINGS.
FS1	FLOOR SINK	JAY R SMITH	3140-12	CAST IRON FLANGED SQUARE RECEPTOR WITH SEEPAGE HOLES, ACID RESISTANT COATED INTERIOR, 12"x12"x6" DEEP SUMP, NICKEL BRONZE RIM AND NICKEL BRONZE HALF GRATE. PROVIDE WITH ALUMINUM DOME BOTTOM STRAINER, FLASHING CLAMP AND SECURED GRATE. OUTLET SIZE AS INDICATED ON DRAWINGS.
HD1	HUB DRAIN	---	---	SAME SIZE AND MATERIAL AS SANITARY WASTE PIPING UNLESS NOTED OTHERWISE ON PLANS. COORDINATE WITH MILLWORK AND EXTEND ABOVE SLAB ONLY AS HIGH AS NECESSARY.

NOTES:
1. PROVIDE TRAP PRIMER ON DRAINS WHEN REQUIRED BY AHJ.

GREASE INTERCEPTOR SCHEDULE

MARK	FIXTURE	MANUFACTURER	MODEL	DESCRIPTION
FCO	FLOOR CLEANOUT	MIFAB	C1100	ADJUSTABLE FLOOR CLEANOUT WITH LACQUERED CAST IRON BODY AND ANCHOR FLANGE. PROVIDE WITH NICKEL BRONZE TOP.
GI-1	GREASE INTERCEPTOR 125 GALLON	SCHIER PRODUCTS	GB-75	INSTALL PER MANUFACTURER INSTALLATION INSTRUCTIONS. COORDINATE ALL REQUIRED ACCESSORIES, INCLUDING BUT NOT LIMITED TO RISERS, REMOTE PUMPOUT PORT, ETC. COORDINATE REMOTE PUMPOUT PORT IN EXTERIOR WALL WITH LANDLORD.
TS	TRAP SEAL	2692	JR SMITH	QUAD CLOSE TRAP SEAL, MATCH PIPE SIZE SHOWN ON PLANS AND SCHEDULES.

NOTES:
1. CLEANOUTS ARE TO BE THE SAME SIZE AS THE PIPE THEY SERVE, UP TO 4".

WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	TANK SIZE (GAL.)	RECOVERY (GAL.)	TEMP. RISE	ELECTRICAL HEAT INPUT (KW)	ELECTRICAL DATA			NOTES
							V	PH	HZ	
WH-1	BRAFORD WHITE	CEHD120A30	119	124	100°F	30	480	3	60	1-5

NOTES:
1. NON-SIMULTANEOUS HEATING ELEMENTS.
2. SET OUTLET TEMPERATURE TO 140°F.
3. PROVIDE AMTROL (OR EQUAL) EXPANSION TANK AND DRAIN PAN SIZED PER MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE RECIRCULATION PUMP: TACO 005-SF2.
5. ROUTE T&P TO FLOOR DRAIN. REFER TO PLANS FOR LOCATION.

RECIRCULATION PUMP SCHEDULE

MARK	MANUFACTURER	MODEL	GPM	TOTAL HEAD (FT)	MOTOR HP
RCP-1	GRUNDFOS	UP 15-18	2	10	0.115

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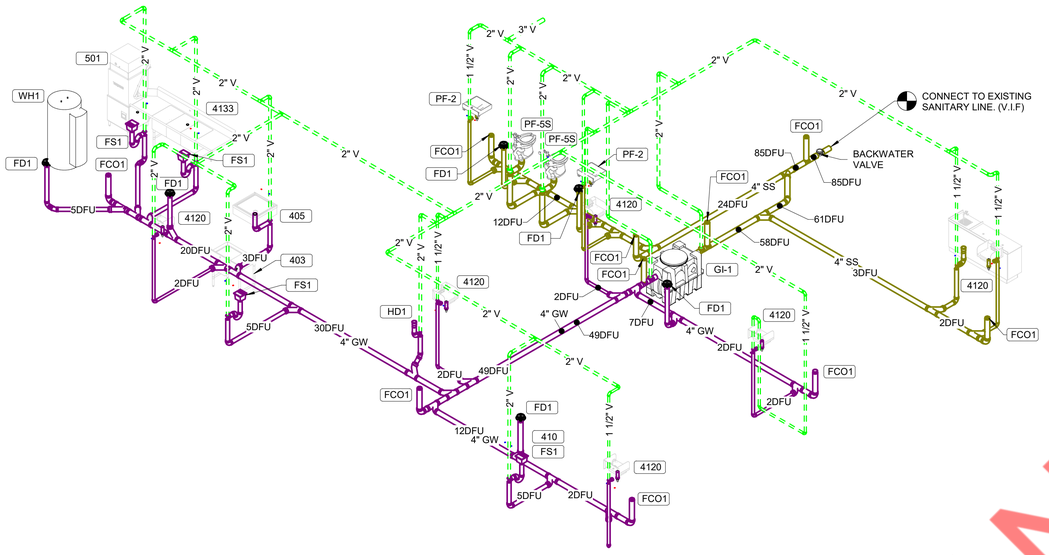
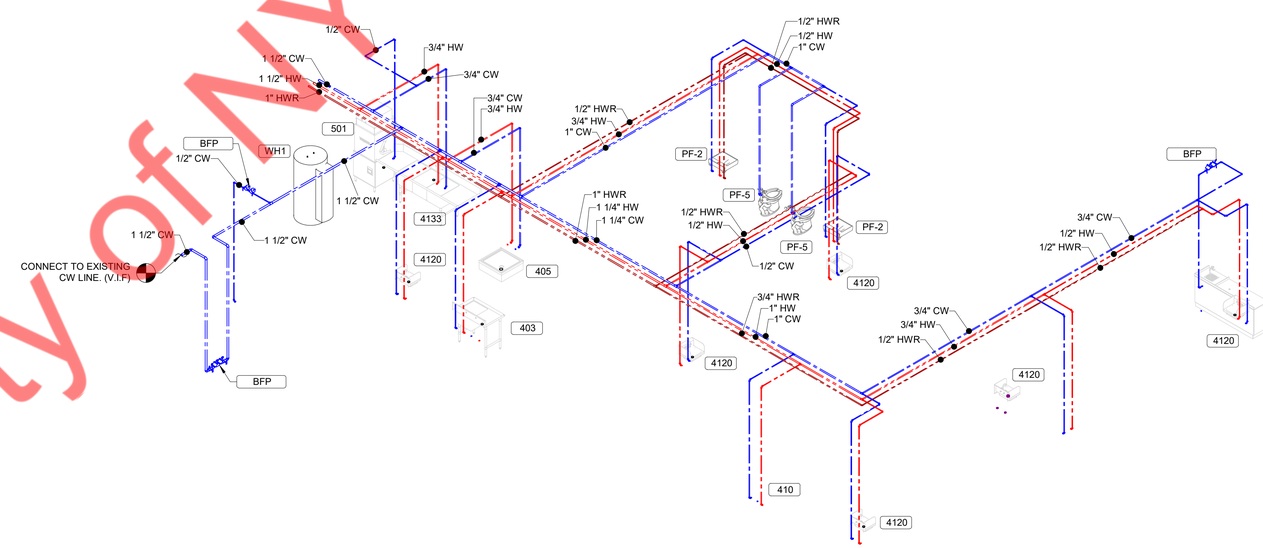
SHEET NUMBER
P601



1 DWV RISER



2 WATER RISER

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SHEET NAME
PLUMBING RISER DIAGRAM

SHEET NUMBER
P701