PLUMBING/MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
 A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED.
 B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
 C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
 D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
 E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
 F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
 G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
2. OPERATION AND MAINTENANCE MANUALS:
 A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
 B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
 C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC.
3. MANUFACTURERS:
 A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. MOTORS:
 A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.
5. TESTING, BALANCING, AND CLEANING:
 A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
 B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
 C. FIRE PROTECTION PIPING SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA.
 D. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
 E. NATURAL GAS PIPING SHALL BE PNEUMATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
 F. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED INDEPENDENT BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE CERTIFIED BY THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
  1) BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION OF PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS.
  2) WITH IN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORT BEARING THE SIGNATURE OF THE TEST AND BALANCE ENGINEER. THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED, ADJUSTED, AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS; ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.
 G. GREASE DUCT SHALL BE TESTED PRIOR TO USE OR CONCEALMENT OF ANY PORTION OF THE GREASE DUCT SYSTEM. DUCTS SHALL BE CONSIDERED TO BE CONCEALED WHEN INSTALLED IN SHAFTS OR COVERED BY DUCT WRAP INSULATION THAT PREVENTS THE DUCTWORK FROM BEING VISUALLY INSPECTED FROM ALL SIDES. THE PERMIT HOLDER SHALL BE RESPONSIBLE TO PROVIDE THE NECESSARY EQUIPMENT AND PERFORM THE GREASE DUCT LEAKAGE TEST PER NFPA 96 AND ALL LOCAL CODES.
 H. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED; IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION, SAMPLES OF WATER IN THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.
6. PLUMBING:
 A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
 B. ALL EXPOSED WASTE PIPE SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.
 C. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.
 D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
 E. CLEANOUTS:
  1) VINYL TILE FLOOR: JR SMITH #4140, OR EQUAL.
  2) QUARRY TILE FLOOR: JR SMITH #4200, OR EQUAL.
  3) CARPETED FLOOR: JR SMITH #4020-Y, OR EQUAL.
  4) UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL.
  5) WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
  6) GRADE: JR SMITH #4256, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER.
 F. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION TANKS.
 G. WATER HEATERS:
  1) EVERY WATER HEATER SHALL HAVE AN APPROVED MEANS INSTALLED ON THE COLD WATER SUPPLY LINE ABOVE THE EQUIPMENT TO PREVENT SIPHONING OF A STORAGE WATER HEATER OR TANK.
  2) BOTTOM FED WATER HEATERS AND TANKS CONNECT TO WATER HEATERS SHALL HAVE A VACCUM RELIEF VALVE INSTALLED. ANSI Z21.22.
  3) STORAGE HEATERS OPERATING ABOVE ATMOSPHERIC PRESSURE SHALL HAVE AN APPROVED PRESSURE RELIEF VALVE AND/OR TEMPERATURE RELIEF VALVE.
 H. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
  1) INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL.
  2) INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
  3) INSTALL ALL GREASE WASTE PIPING AT 1/4" PER FOOT FALL.
 I. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
  1) INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE.
  2) INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE.
7. PIPING:
 A. DOMESTIC COLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND).
  1) TYPE L HARD DRAWN COPPER TUBING, ASTM B-88.
   a) WROUGHT COPPER SOLDERED FITTINGS, ASTM B75 ALLOY C12200. ANSI B16.22. MSS SP-104.
   b) MECHANICAL PRESS COPPER FITTINGS FOR USE IN PLUMBING OR MECHANICAL APPLICATIONS. ASME B16.22, ASME B16.51, or ASME B16.18. MECHANICAL PRESS COPPER FITTINGS SHALL CONFORM TO IAPMO PS-117 OR ASME B16.51.
  2) PEX, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATINGS FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH TR-4/03.
   a) PEX-A AND PEX-B MEETING ANSI/NSF61 AND ANSI/NSF372 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PW-G", "NSF-61-G" OR OTHER NSF-APPROVED MARKING. ASTM F2023 FOR USE WITH CHLORINATED WATER.
   b) PEX MECHANICAL, CRIMP/INSERT OR EXPANSION FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE, INCREASE PEX PIPING SIZE TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER FOR SUPPLY MAINS.
  3) VALVES
   a) TO BE INSTALLED ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE.
   b) TO BE INSTALLED ON THE WATER SUPPLY SIDE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT.
   c) TYPES:
    1. GATE VALVE: JOMAR T/S-301G OR EQUAL. LEAD-FREE NSF 61, ANSI B1.20.1.
    2. GLOBE VALVE: JOMAR TGG OR EQUAL.
    3. BALL VALVE: JOMAR JP100PxP OR EQUAL COMPACT LEAD FREE BRASS BALL VALVE. UL842, CSA 3371-12 & 3371-92, FM, CALIFORNIA CODE AB1953, NSF61 ANNEX G APPROVED.
    4. BALL VALVE: JOMAR T-100NE OR EQUAL. UL842, FM, CSA, NSF 61-8, MSS SP-110
 B. DOMESTIC COLD, AND HOT WATER (UNDERGROUND).
  1) TYPE L HARD DRAWN COPPER TUBING, ASTM B-88.
   a) WROUGHT COPPER SOLDERED FITTINGS, ASTM B75 ALLOY C12200. ANSI B16.22. MSS SP-104.
   b) MECHANICAL PRESS COPPER FITTINGS FOR USE IN PLUMBING OR MECHANICAL APPLICATIONS. ASME B16.22, ASME B16.51, or ASME B16.18. MECHANICAL PRESS COPPER FITTINGS SHALL CONFORM TO IAPMO PS-117 OR ASME B16.51.
  2) PEX, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATINGS FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH TR-4/03.
   a) PEX-A AND PEX-B MEETING ANSI/NSF61 AND ANSI/NSF372 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PW-G", "NSF-61-G" OR OTHER NSF-APPROVED MARKING. ASTM F2023 FOR USE WITH CHLORINATED WATER.
   b) PEX MECHANICAL, CRIMP/INSERT OR EXPANSION FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE, INCREASE PEX PIPING SIZE TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER FOR SUPPLY MAINS.
   c) HDPE, PIGMENTED BLUE THROUGHOUT, CTS SIZES 1"-2" AWWA C901 4710 DR9 PC250 IPS SIZES 2"-3", AWWA C901 4710 DR11 PC200.
 C. DOMESTIC WATER SERVICE, 1"-3"
  1) TYPE K SOFT DRAWN COPPER TUBING, ASTM B-88.
   a) Cast Copper Alloy Fittings for Flared Copper Tube, ASME/ANSI B16.26:
  2) HDPE, PIGMENTED BLUE THROUGHOUT, CTS SIZES 1"-2" AWWA C901 4710 DR9 PC250 IPS SIZES 2"-3", AWWA C901 4710 DR11 PC200
  MATERIAL AND INSTALLATION MUST CONFORM TO WATER DEPARTMENT REQUIREMENTS.
 D. WATER (FIRE) SERVICE, 3" OR LARGER.
  1) DUCTILE IRON PIPE & FITTINGS, AWWA C151, CLASS 50, CEMENT LINING, SEALCOATED, AWWA C104. THRUST BLOCKS IN ACCORDANCE WITH NFPA 24.
  2) HDPE IPS SIZES PIGMENTED BLUE THROUGHOUT, 3" AWWA C901 4710 DR11 PC200 4" AND LARGER AWWA C906 3408/4710 DR13.5 PC160
   a) STIFFENERS MUST BE USED IN THE ENDS OF THE HDPE, APPROVED TRACE WIRE MUST BE USED. # 12 AWG COPPERHEAD REINFORCED TRACE WIRE (BLUE IN COLOR)
   b) MATERIAL AND INSTALLATION MUST CONFORM TO WATER DEPARTMENT REQUIREMENTS.
  3) POLYVINYL CHLORIDE (PVC) PIPE; AWWA C900; CLASS 200; WITH BELL END AND ELASTOMERIC GASKET, WITH PLAIN END FOR CAST-IRON OR DUCTILE-IRON FITTINGS, OR PVC ELASTOMERIC GASKET FITTINGS.
   a) PVC COUPLINGS AND FITTINGS: AWWA C900, WITH ASTM F 477 ELASTOMERIC SEAL GASKETS, ASTM F 477, ELASTOMERIC SEAL.
   b) DUCTILE-IRON AND CAST-IRON FITTINGS: AWWA C110, DUCTILE-IRON OR CAST-IRON, 250-PSI PRESSURE RATING; OR AWWA C153, DUCTILE-IRON COMPACT FITTINGS, 350-PSI PRESSURE RATING; OF DIMENSION TO MATCH PIPE OUTSIDE DIAMETER. AWWA C104, CEMENT MORTAR LINING; GASKETS PER AWWA C111, RUBBER.
  4) THRUST BLOCKS IN ACCORDANCE WITH NFPA 24.

PLUMBING/MECHANICAL SPECIFICATIONS (CONTINUED)

 E. LEAD CONTENT OF WATER SUPPLY PIPE AND FITTINGS:
  1) PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, UTILIZED IN THE WATER SUPPLY SYSTEM SHALL NOT HAVE MORE THAN 8% LEAD CONTENT.
  2) PIPE, PIPE FITTINGS, JOINTS, VALVES, FAUCETS, AND FIXTURE FITINGS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES SHALL COMPLY WITH NSF 372 AND SHALL HAVE A WEIGHTED AVERAGE LEAD CONTENT OF 0.25% OR LESS.
 F. SANITARY SEWER, STORM SEWER, GREASE WASTE AND VENTS.
  (UNDERGROUND, INTERIOR TO THE BUILDING).
  1) ABS PIPE AND FITTINGS: ABS PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS," FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL ABS PIPE: ASTM D 2661, SCHEDULE 40. ABS SOCKET FITTINGS: ASTM D 2661, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS. SOLVENT CEMENT: ASTM D 2235.
  2) PVC PIPE AND FITTINGS: PVC PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS," FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2665, DRAIN, WASTE, AND VENT. PVC SOCKET FITTINGS: ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE. ADHESIVE PRIMER: ASTM F 656. SOLVENT CEMENT: ASTM D 2564.
  3) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF® INTERNATIONAL.
  4) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
 G. SANITARY SEWER, STORM SEWER, GREASE WASTE AND VENTS.
  (ABOVE GROUND, INTERIOR TO THE BUILDING).
  1) ABS PIPE AND FITTINGS: ABS PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS," FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL ABS PIPE: ASTM D 2661, SCHEDULE 40. CELLULAR-CORE ABS PIPE: ASTM F 628, SCHEDULE 40.ABS SOCKET FITTINGS: ASTM D 2661, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS. SOLVENT CEMENT: ASTM D 2235.
  2) PVC PIPE AND FITTINGS: PVC PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS," FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2665, DRAIN, CELLULAR-CORE PVC PIPE: ASTM F 891, SCHEDULE 40. WASTE, AND VENT. PVC SOCKET FITTINGS: ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE. ADHESIVE PRIMER: ASTM F 656. SOLVENT CEMENT: ASTM D 2564.
  3) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF® INTERNATIONAL.
  4) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
 H. SANITARY SEWER, STORM SEWER, GREASE WASTE AND VENTS.
  (UNDERGROUND, EXTERIOR TO THE BUILDING).
  1) REFER TO CIVIL PLANS.
 I. CONDENSATE DRAINS & INDIRECT WASTE (ABOVEGROUND).
  1) DWV, WROUGHT COPPER, ANSI B-16.29 (CONDENSATE INSIDE BUILDING).
  2) POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (CONDENSATE ON ROOF).
  3) POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (INDIRECT WASTE).
  4) DWV, WROUGHT COPPER, ANSI B-16.29 (WATER HEATER T&P, INDIRECT WASTE FROM DISHWASHER/SINKS).
 J. REFRIGERANT.
  1) ASTM B 280, TYPE ACR, HARD-DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COILS, SEAMLESS COPPER TUBING.
  2) WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS. BRAZED JOINTS, AWS A 5.8, CLASSIFICATION BAG-1 (SILVER).
  3) TUBING SHALL BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF PIPE INTERIORS PRIOR TO SHIPPING.
  4) SIZE AND INSTALLATION OF PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 K. NATURAL GAS.
  1) BLACK STEEL PIPE, SCHEDULE 40, ASTM A53.
   a) PIPE 3" AND SMALLER; 150 LB. MALLEABLE IRON, THREADED FITTINGS.
   b) PIPE 4" AND SMALLER; VIEGA MEGAPRESS G FOR WATER AND GAS. CSA LC4, TSSA/ASME B31 FOR USE WITH ASTM A53 SCHEDULE 40 BLACK IRON PIPE.
   c) PIPE 2-1/2" AND LARGER, WELDED.
   d) PLUG VALVE: ROCKWELL NORDSTROM FIGURE NO. 142 OR 143.
   e) BALL VALVE: JOMAR T-100NE. APPROVALS- UL842, FM, CSA, NSF 61-8, MSS SP-110
  2) GAS PIPING LABELING:
   a) ALL ELEVATED PRESSURE GAS PIPING SHALL BE LABELED EVERY 40 FEET WITH SIGNS INDICATING "ELEVATED PRESSURE".
  3) GAS PIPING PAINTING:
   a) ALL BLACK STEEL GAS PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE PRIMED AND PAINTED TO EITHER MATCH ADJACENT EXTERIOR WHERE LOCATED ON OR NEAR EXTERIOR WALL AND PAINTED SAFETY YELLOW WHERE LOCATED ON THE ROOF.
 L. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON, OR ELCEN. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-SP-69.
 M. SLEEVES
  1) PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICIENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION AND TO ACCOMMODATE PIPE INSULATION.
  2) INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL, PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
  3) ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
  4) PROTECTION AGAINST CONTACT: METALLIC PIPING, EXCEPT FOR CAST IRON, DUCTILE IRON AND GALVANIZED STEEL SHALL NOT BE PLACED IN DIRECT CONTACT WITH STEEL FRAMING MEMBERS, CONCRETE, OR CINDER WALLS AND FLOORS OR OTHER MASONRY. METALLIC PIPING SHALL NOT BE PLACED IN DIRECT CONTACT WITH CORROSIVE SOIL. SHEATHING USED TO PREVENT DIRECT CONTACT SHALL HAVE A THICKNESS OF GREATER THAN .008: AND THE SHEATHING SHALL BE MADE OF PLASTIC. ANY PIPE THAT PASSES THROUGH A FOUNDATION WALL OR FOOTING SHALL BE PROVIDED WITH A RELIEVING ARCH, OR A PIPE SLEEVE SHALL BE BUILT INTO THE FOUNDATION WALL. THE SLEEVE SHALL BE TWO SIZES GREATER THAN THE PIPE PASSING THOUGH THE WALL OR FOOTING.
  5) PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.
 N. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.
8. WATER HEATERS
 A. GAS-FIRED, TANKLESS, DOMESTIC-WATER HEATERS
  1) STANDARD: ANSI Z21.10.3/CSA 4.3 FOR GAS-FIRED, INSTANTANEOUS, DOMESTIC-WATER HEATERS FOR INDOOR APPLICATION.
  2) CONSTRUCTION: COPPER PIPING OR TUBING COMPLYING WITH NSF 61 AND NSF 372 BARRIER MATERIAL FOR POTABLE WATER, WITHOUT STORAGE CAPACITY.
   a) PRESSURE RATING: 150 PSIG.
   b) HEAT EXCHANGER: STAINLESS STEEL.
   c) INSULATION: COMPLY WITH ASHRAE/IES
   d) JACKET: METAL, WITH ENAMELED FINISH, OR PLASTIC.
   e) BURNER: FOR USE WITH TANKLESS, DOMESTIC-WATER HEATERS AND NATURAL-GAS FUEL.
   f) AUTOMATIC IGNITION: MANUFACTURER'S PROPRIETARY SYSTEM FOR AUTOMATIC, GAS IGNITION.
   g) TEMPERATURE CONTROL: ADJUSTABLE THERMOSTAT.
  3) SUPPORT: BRACKET FOR WALL MOUNTING.
 B. DOMESTIC-WATER EXPANSION TANKS:
  1) DESCRIPTION: STEEL, PRESSURE-RATED TANK CONSTRUCTED WITH WELDED JOINTS AND FACTORY-INSTALLED, BUTYL-RUBBER DIAPHRAGM. INCLUDE AIR PRECHARGE TO MINIMUM SYSTEM-OPERATING PRESSURE AT TANK.
  2) CONSTRUCTION:
   a) TAPPINGS: FACTORY-FABRICATED STEEL, WELDED TO TANK BEFORE TESTING AND LABELING. INCLUDE ASME B1.20.1 PIPE THREAD.
   b) INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING FINISH INTO AND THROUGH TANK FITTINGS AND OUTLETS.
   c) AIR-CHARGING VALVE: FACTORY INSTALLED.
  3) CAPACITY AND CHARACTERISTICS:
   a) WORKING-PRESSURE RATING: 150 PSIG .
9. FIRE PROTECTION (WET AND DRY PIPE SPRINKLER SYSTEM):
 A. PROVIDE A "WET-PIPE" SPRINKLER SYSTEM WITH AUTOMATIC SPRINKLERS AND CONNECTED TO A SUFFICIENT WATER SUPPLY. PROVIDE A "DRY-PIPE" SPRINKLER SYSTEM (COMPLETE WITH AIR COMPRESSOR AND NITROGEN GENERATOR TO MAINTAIN SYSTEM AIR PRESSURE) FOR THE PATIO AREA AND OTHER AREAS SUBJECT TO FREEZING THAT REQUIRING FIRE PROTECTION PER NFPA 13.
 B. THE SYSTEM DESIGN SHALL BE BASED ON LIGHT HAZARD CLASSIFICATION, NFPA 13 IN CUSTOMER AREAS.
 C. THE SYSTEM DESIGN SHALL BE BASED ON ORDINARY HAZARD GROUP 2 CLASSIFICATION, NFPA 13 IN KITCHEN AREAS.
 D. THE WET PIPE SPRINKLER SYSTEM SHALL CONFORM TO ALL REQUIREMENTS OF THE OWNER'S INSURANCE CARRIER AND LOCAL AUTHORITIES. PROVIDE SYSTEM DRAWINGS WITH A PROFESSIONAL ENGINEERS STAMP ON THE DRAWINGS FOR REVIEW BY THE OWNER'S INSURANCE CARRIER AND LOCAL AUTHORITIES PRIOR TO INSTALLATION OF PIPING.
 E. THE WET PIPE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED, BASED ON A WATER FLOW DATA OBTAINED FROM THE LOCAL WATER OR FIRE DEPARTMENT.
 F. PIPE AND TUBING MATERIALS:
  1) STEEL PIPE, SMALLER THAN 2".
   a) ASTM A 53/A 53M STANDARD, SCHEDULE 40, SEAMLESS, BLACK STEEL PIPE.
   b) ASTM A 135;L ASTM A 795/A 795M; OR ASME B36.10M, WALL THICKNESS GREATER THAN OR EQUAL TO SCHEDULE 30 AND LESS THAN SCHEDULE 40, BLACK STEEL PIPE.
   c) ASTM A 135 OR ASTM 795/A 795M, THREADABLE, WALL THICKNESS LESS THAN SCHEDULE 30 AND GREATER THAN SCHEDULE 10, BLACK-STEEL PIPE.
   d) ASTM A 135 OR ASTM A 795/A 795M SCHEDULE 5 STEEL PIPE.
  2) STEEL PIPE, 2" AND LARGER: ASTM A 795, SCHEDULE 10, SEAMLESS, BLACK STEEL.
 G. FITTINGS:
  1) CAST-IRON THREADED FITTINGS: ANSI B16.4, CLASS 125, STANDARD PATTERN, FOR THREADED JOINTS. THREADS SHALL CONFORM TO ANSI B1.20.1.
  2) MALLEABLE-IRON THREADED FITTINGS: ANSI B16.3, CLASS 150, STANDARD PATTERN, FOR THREADED JOINTS. THREADS SHALL CONFORM TO ANSI B1.20.1.
  3) STEEL FITTINGS: ASTM A 234, SEAMLESS OR WELDED, FOR WELDED JOINTS.
  4) GROOVED MECHANICAL FITTINGS: ASTM A 536, GRADE 65-45-12 DUCTILE IRON; ASTM A 47 GRADE 32510 MALLEABLE IRON; OR ASTM A53, TYPE F, E, OR S; GRADE B FABRICATED STEEL FITTINGS WITH GROOVES OR SHOULDERS DESIGNED TO ACCEPT GROOVED END COUPLINGS, IN ACCORDANCE WITH ITS LISTING.
 H. HANGERS AND SUPPORTS:
  1) HANGERS, ANCHORS, AND SUPPORTS FOR FIRE PROTECTION PIPING AND EQUIPMENT SHALL BE IN ACCORDANCE WITH NFPA 13. HANGERS, ANCHORS, SUPPORTS, AND COMPONENTS SHALL BE LISTED BY UL AND ANY OTHER AGENCIES REQUIRED BY THE LOCAL FIRE AUTHORITIES AND THE OWNER'S INSURANCE CARRIER.
 I. AUTOMATIC SPRINKLERS:
  1) SPRINKLER HEADS: TYPE AS INDICATED OR REQUIRED BY THE APPLICATION. UNLESS OTHERWISE REQUIRED, PROVIDE QUICK RESPONSE HEADS WITH NOMINAL 1/2 INCH DISCHARGE ORIFICE, FOR "LIGHT HAZARD" TEMPERATURE RANGE IN CUSTOMER AREAS.
  2) SPRINKLER HEADS: TYPE AS INDICATED OR REQUIRED BY THE APPLICATION. UNLESS OTHERWISE REQUIRED, PROVIDE HEADS WITH NOMINAL 1/2 INCH DISCHARGE ORIFICE, FOR "ORDINARY" TEMPERATURE RANGE IN KITCHEN AREAS.
  3) SPRINKLER HEADS SHALL BE OF THE FOLLOWING CONSTRUCTION, CONFIGURATIONS, AND FINISH FOR THE AREAS INDICATED:
   a) FINISHED AREAS; SEMI-RECESSED PENDANT, CHROME PLATED, CHROME ESCUTCHEON CUP.
   b) UNFINISHED AREAS; UPRIGHT, ROUGH BRASS.
  4) FURNISH THREE EXTRA SPRINKLER HEADS OF EACH TYPE INCLUDED IN THE PROJECT, AND PROVIDE A SPRINKLER HEAD CABINET AND ANY SPECIAL WRENCHES TO REMOVE OR INSTALL SPRINKLER HEADS.
  5) FURNISH QUICKSTOP TALON SPRINKLER TOOL. QUICKSTOP TALON SHALL STOP 1/2" AND 3/4" HEADS. THE TOOL SHALL FEATURE A FUSIBLE LINK TO RELEASE THE TOOL IF HEATED AND SHALL BE 100% WATER TIGHT UP TO 350 PSI.

PLUMBING/MECHANICAL SPECIFICATIONS (CONTINUED)

 J. ALARM DEVICES:
  1) WATER FLOW INDICATORS: VANE TYPE WATERFLOW DETECTOR, RATED TO 250 PSIG; DESIGNED FOR HORIZONTAL OR VERTICAL INSTALLATION; HAVE 2-SPDT CIRCUIT SWITCHES TO PROVIDE ISOLATED ALARM AND AUXILIARY CONTACTS, 7 AMPERE 125 VOLTS AC AND 0.25 AMPERE 24 VOLTS DC; COMPLETE WITH FACTORY-SET, FIELD-ADJUSTABLE RETARD ELEMENT TO PREVENT FALSE SIGNALS, AND TAMPER-PROOF COVER WHICH SENDS A SIGNAL WHEN COVER IS REMOVED.
  2) SUPERVISORY SWITCHES: SPST, NORMALLY CLOSED CONTACTS, DESIGNED TO SIGNAL VALVE IS IN OTHER THAN FULL OPEN POSITION.
10. INSULATION AND DUCT LINING:
 A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPED RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
 B. PIPE INSULATION - ABOVE GRADE:
  1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 Btu PER in/hr*sqft*F° OR LESS.
  2) FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  3) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP ARMAFLEX OR ARMAFLEX 2000.
  4) FOR NON CIRCULATING SYSTEMS, THE FIRST 8 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND THE HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.
  5) FOR CIRCULATING SYSTEMS, ALL HOT WATER PIPING IN THE CIRCULATION LOOP MUST BE INSULATED AS SPECIFIED BELOW.
  6) INSULATION SCHEDULE:

a) DOMESTIC COLD WATER	1/2"
b) DOMESTIC HOT WATER	1" FOR PIPING UP TO 1-1/4"Ø, & 1-1/2" FOR PIPING 1-1/2"Ø AND LARGER
c) HOT WATER RECIRCULATING	1"
d) CONDENSATE DRAINS INSIDE BUILDING	1/2"
e) REFRIGERANT SUCTION	3/4" FOR PIPING UP TO 1-1/4"Ø, & 1" FOR PIPING 1-1/2"Ø AND LARGER
f) HORIZONTAL STORM PIPE	1/2"
g) ROOF DRAINS	1" INSULATION SHALL BE PROVIDED AT ROOF DRAIN BODY AND A MINIMUM OF 10' OF HORIZONTAL PIPING OR A MINIMUM OF 5' IF COMBINATION OF HORIZONTAL AND VERTICAL STORM PIPING DOWNSTREAM OF ROOF DRAIN BODY.

 C. PIPE INSULATION - BELOW GRADE:
  1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 Btu PER in/hr*sqft*F° OR LESS.
  2) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO KFLEX INSUL-TUBE OR EQUAL RATED FOR UNDERGROUND INSTALLATION ABOVE THE WATER TABLE. COVER PIPING WITH A CLEAN FILL SUCH AS SAND (3"-5" LAYER) TO PROTECT INSULATION FROM COMPACTION.
  3) PRE-INSULATED PIPE SYSTEMS WITH CLOSED CELL PEX-FOAM INSULATION AND COVERED BY A WATERPROOF CORRUGATED HDPE JACKET. UPONOR ECOFLEX OR EQUAL. ASTM F876, F877, CSA B137.5
  4) INSULATION SCHEDULE:
   a) DOMESTIC HOT WATER 1-1/2"
 D. DUCTWORK: ACOUSTICAL INSULATION.
  1) DUCT LINING: 2 LB/CF, THICKNESS AS SCHEDULED, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.
   a) DUCT LINING SCHEDULE:
    (1) RECTANGULAR SUPPLY DUCT 1/2" : THROUGHOUT THE FIRST 10 FEET OF DUCT.
    (2) RETURN AIR DUCT 1/2" : THROUGHOUT THE FIRST 10 FEET OF DUCT.
 E. DUCTWORK: THERMAL INSULATION.
  1) DUCT COVERING: 3/4 LB/CF, FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING, THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
   a) DUCT COVERING SCHEDULE: MINIMUM R-6
    (1) ROUND SUPPLY DUCT 2"
    (2) RECTANGULAR SUPPLY DUCT 2"
    (3) RETURN AIR DUCT 2"
    (4) MAKE-UP AIR DUCT 2"
11. DUCTWORK:
 A. ALL DUCTWORK, UNLESS OTHERWISE INDICATED, SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 653, LOCKFORMING QUALITY, WITH G 90 ZINC COATING IN ACCORDANCE WITH ASTM A 924; AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
 B. WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL IMPERFECTIONS INCLUDING PITTING, SEAM MARKS, ROLLER MARKS, STAINS AND DISCOLORATIONS, AND OTHER IMPERFECTIONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.
 C. DUCTWORK, METAL GAUGES, REINFORCING, ETC. SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2 INCH WATER GAUGE STATIC PRESSURE.
  1) RECTANGULAR DUCT:
   a) ELBOWS, UNLESS INDICATED OTHERWISE SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 DUCT WIDTH OR SQUARE ELBOW WITH DOUBLE WALL STREAMLINE VANES.
   b) RETURN AIR ACOUSTICAL ELBOWS AND SOUND BOOTS SHALL BE A SQUARE ELBOW WITH NO TURNING VANES.
   c) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
  2) ROUND AND OVAL SPIRAL SEAM DUCT:
   a) PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEGREE CHANGE OF DIRECTION PER SECTION. UNLESS SPECIFICALLY DETAILED OTHERWISE, USE 45 DEGREE LATERALS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEGREE BRANCHES ARE INDICATED PROVIDE CONICAL TYPE TEES.
   b) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
   c) AS AN OPTION, PROVIDE FACTORY-FABRICATED DUCT AND FITTINGS, IN LIEU OF SHOP-FABRICATED DUCT AND FITTINGS.
    (1) ELBOWS: ONE PIECE CONSTRUCTION FOR 90 DEGREES AND 45 DEGREE ELBOW 14" AND SMALLER. PROVIDE MULTIPLE GORE CONSTRUCTION FOR LARGER DIAMETERS WITH STANDING SEAM CIRCUMFERENTIAL JOINT.
    (2) DIVIDED FLOW FITTINGS: 90 DEGREE TEES, CONSTRUCTED WITH SADDLE TAP SPOT WELDED AND BONDED TO DUCT FITTING BODY.
   d) ROUND LONGITUDINAL SEAM DUCT. USE FOR RIGID METAL DUCT ON LEAVING SIDE OF DUCT IN CONCEALED LOCATIONS FOR EXTENSION TO FLEX FOR DIFFUSERS, UNLESS OTHERWISE INDICATED.
 D. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEETMETAL SIZES, ALLOWANCE FOR DUCT LINER HAS BEEN MADE WHERE APPLICABLE.
 E. INSTALLATION OF METAL DUCTWORK:
  1) GENERAL: ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE AIR-TIGHT SYSTEMS (MAXIMUM 5% LEAKAGE), WITH NO OBJECTIONABLE NOISE, AND CAPABLE OF PERFORMING INDICATED SERVICE. INSTALL EACH RUN WITH MINIMUM NUMBER OF JOINTS. ALIGN DUCTWORK ACCURATELY WITH INTERNAL SURFACES SMOOTH. SUPPORT DUCTS RIGIDLY WITH SUITABLE STRAPS, BRACES, HANGERS AND ANCHORS IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" LATEST EDITION. DUCT HANGERS SHALL BE OF THE TYPE WHICH WILL HOLD DUCTS TRUE-TO-SHAPE AND TO PREVENT BUCKLING. SUPPORT VERTICAL DUCTS AT EVERY FLOOR.
  2) AUXILIARY STEEL: PROVIDE AUXILIARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT DUCTWORK.
  3) ROUTING: LOCATE DUCTWORK RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY AND AVOID DIAGONAL RUNS WHEREVER POSSIBLE. LOCATE RUNS AS INDICATED BY DIAGRAMS, DETAILS AND NOTATIONS OR, IF NOT OTHERWISE INDICATED, RUN DUCTWORK IN SHORTEST ROUTE WHICH DOES NOT OBSTRUCT USABLE SPACE OR BLOCK ACCESS FOR SERVICING BUILDING AND ITS EQUIPMENT. HOLD DUCTS CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS, AND OTHER STRUCTURAL AND PERMANENT ENCLOSURE ELEMENTS OF BUILDING. WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES, CONCEAL DUCTWORK FROM VIEW, BY LOCATING IN MECHANICAL SHAFTS, HOLLOW WALL CONSTRUCTION OR ABOVE SUSPENDED CEILINGS. DO NOT ENCASE HORIZONTAL RUNS IN SOLID PARTITIONS, EXCEPT AS SPECIFICALLY SHOWN. COORDINATE LAYOUT WITH SUSPENDED CEILING AND LIGHTING LAYOUTS AND SIMILAR FINISHED WORK.
  4) DO NOT ROUTE DUCTWORK THROUGH ELECTRICAL EQUIPMENT SPACES AND ENCLOSURES, UNLESS INDICATED OTHERWISE.
  5) PENETRATIONS:
   a) WHERE DUCTS PASS THROUGH INTERIOR PARTITIONS OR EXTERIOR WALLS, AND ARE EXPOSED TO VIEW, CONCEAL SPACE BETWEEN OPENING AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME GAGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND WALL.
   b) WHERE DUCTS PASS THROUGH FIRE-RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRESTOPPING BETWEEN DUCT AND WALL.
  6) COORDINATION: COORDINATE DUCT INSTALLATIONS WITH INSTALLATION OF ACCESSORIES, DAMPERS, COIL FRAMES, EQUIPMENT, CONTROLS, AND OTHER ASSOCIATED WORK OF THE DUCTWORK SYSTEM.
  7) INSTALLATION: INSTALL METAL DUCTWORK IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", LATEST EDITION.
 F. EQUIPMENT CONNECTIONS:
  1) CONNECT METAL DUCTWORK TO EQUIPMENT AS INDICATED, PROVIDE FLEXIBLE CONNECTION FOR EACH DUCTWORK CONNECTION TO EQUIPMENT MOUNTED ON VIBRATION ISOLATORS, AND/OR EQUIPMENT CONTAINING ROTATING MACHINERY. PROVIDE ACCESS DOORS AS REQUIRED.
 G. SEAL ALL CONCEALED DUCTWORK JOINTS WITH NON-HARDENING, NON-MIGRATING MASTIC SEALANT, AS RECOMMENDED FOR SEALING SEAMS AND JOINTS IN DUCTWORK. OIL BASE CAULKING AND GLAZING COMPOUNDS SHALL NOT BE ACCEPTABLE. DUCTS SHALL BE SEALED TO THE CLASS LEVEL LISTED BELOW.

1) UNCONDITIONED SPACES	CLASS B	CLASS A	CLASS C	CLASS B
2) CONDITIONED SPACES (PLENUM)	CLASS C	CLASS B	CLASS B	CLASS C
	SUPPLY ≤ 2" W.C.	SUPPLY > 2" W.C.	EXHAUST/DRYER	RETURN

 I. ALUMINUM DUCTS WHERE INDICATED: ANSI/ASTM B209; ALUMINUM SHEET, ALLOY 3003-H14. ALUMINUM CONNECTORS AND BAR STOCK: ALLOY 6061-T6 OR OF EQUIVALENT STRENGTH.
12. GREASE HOOD AND EXHAUST DUCT:
 A. HOOD SHALL BE CONSTRUCTED OF 18 GAUGE STEEL OR 20 GAUGE STAINLESS STEEL IN ACCORDANCE WITH NFPA 96 AND LOCAL CODES.
  1) GREASE FILTERS SHALL BE UL LISTED ALUMINUM GREASE EXTRACTORS.
  2) PROVIDE A COMPLETE AUTOMATIC WET CHEMICAL FIRE EXTINGUISHING SYSTEM FOR THE HOOD AND DUCT AS REQUIRED BY NFPA AND LOCAL CODES. ALL COOKING EQUIPMENT UNDER THE HOOD SHALL BE INTERLOCKED WITH THE SYSTEM, TO SHUTDOWN IN AN ALARM CONDITION.
   a) THE GREASE HOOD FIRE SUPPRESSION SYSTEM SHALL BE EQUAL TO AMEREX KP SERIES PRE-ENGINEERED , WET CHEMICAL, STORED-PRESSURE TYPE WITH A FIXED NOZZLE AGENT DISTRIBUTION SYSTEM. THE SYSTEM SHALL BE UL LISTED AND TESTED TO UL STANDARD 300.
   b) THE SYSTEM SHALL UTILIZE AN AGENT EQUAL TO AMEREX KP LIQUID FIRE SUPPRESSANT, A POTASSIUM ACETATE BASED SOLUTION THAT SUPPRESSES COOKING GREASE FIRES, SHALL HAVE A PH OF 9 OR LESS, AND SHALL NOT HARM STAINLESS STEEL SURFACES.
   c) THE SYSTEM SHALL BE PROVIDED WITH A MANUAL "DUAL ACTION" TYPE PULL STATION. PULL STATION SHALL BE LOCATED NOT LESS THAN 10 FEET AND A MAXIMUM OF 20 FEET FROM THE GREASE HOOD AND IN THE PATH OF EGRESS. THE MANUAL ACTUATION SHALL REQUIRE A MAXIMUM FORCE OF 40 POUNDS AND A MAXIMUM MOVEMENT OF 14 INCHES TO ACTUATE THE FIRE SUPPRESSION SYSTEM.
   d) PROVIDE A GAS SHUT OFF VALVE FOR MOUNTING IN THE GAS PIPE THAT WILL SHUT OFF GAS FLOW TO EQUIPMENT UNDER THE HOOD IN AN ALARM CONDITION. PROVIDE AN ELECTRICAL SWITCH WHICH SHALL BE CAPABLE OF DE-ENERGIZING ALL ELECTRICAL DEVICES AND EQUIPMENT UNDER THE HOOD IN AN ALARM CONDITION.

PLUMBING/MECHANICAL SPECIFICATIONS (CONTINUED)

 B. GREASE DUCT SHALL BE CONSTRUCTED OF 16 GAUGE CARBON STEEL OR 18 GAUGE STAINLESS STEEL IN ACCORDANCE WITH NFPA 96 AND LOCAL CODES.
  a) JOINTS, SEAMS AND PENETRATIONS OF GREASE DUCTS SHALL BE MADE WITH A CONTINUOUS LIQUID TIGHT WELD OR BRAZE MADE ON THE EXTERNAL SURFACE OF THE DUCT SYSTEM.
  b) DUCT JOINTS SHALL BE BUTT JOINTS, WELDED FLANGE JOINTS WITH A MAXIMUM FLANGE DEPTH OF 1/2" OR OVERLAPPING DUCT JOINTS OF EITHER THE TELESCOPING OR BELL TYPE. OVERLAPPING JOINTS SHALL BE INSTALLED TO PREVENT LEDGES AND OBSTRUCTIONS FROM COLLECTING GREASE OR INTERFERING WITH GRAVITY DRAINAGE TO THE INTENDED COLLECTION POINT.
  c) DUCT TO HOOD CONNECTIONS SHALL BE MADE WITH LISTED AND LABELED DUCT TO HOOD COLLAR CONNECTIONS THAT ARE INSTALLED PER THE TERMS OF THEIR APPROVAL AND PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS.
  d) DUCT TO EXHAUST FAN CONNECTIONS SHALL BE FLANGED AND GASKETED AT THE BASE OF THE FAN FOR VERTICAL DISCHARGE FANS, OR SHALL BE FLANGED, GASKETED AND BOLTED TO THE INLET OF THE FAN FOR SIDE INLET UTILITY FANS. GASKET SEALING MATERIALS SHALL BE RATED FOR A MINIMUM CONTINUOUS DUTY TEMPERATURE OF 1,500°F.
13. FLEXIBLE DUCT:
 A. ATCO #076 (R-6), OR EQUAL.
 B. FACTORY APPLIED INSULATION AND VAPOR BARRIER.
 C. MAXIMUM LENGTH OF 5'-0".
14. FLUES AND ACCESSORIES:
 A. FLUE FOR GAS FIRED CONDENSING WATER HEATER SHALL BE AS RECOMMENDED BY THE GAS APPLIANCE MANUFACTURER. FLUES SHALL BE SCHEDULE 40, PVC OR CPVC PIPE PER THE MANUFACTURERS INSTALLATION REQUIREMENTS.
 B. PROVIDE MANUFACTURER'S STANDARD ACCESSORY ITEMS INCLUDING BIRD PROOF TOP, STORM COLLAR, ROOF THIMBLE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. ROOF THIMBLES THROUGH THE BUILDING ROOF SHALL BE SUITABLE FOR USE WITH THE ROOF PROVIDED.
15. EXHAUST FANS:
 A. CENTRIFUGAL TYPE FAN WITH CHARACTERISTICS AND CAPACITY AS SCHEDULED, ELECTRICALLY POWERED, SUITABLE FOR MOUNTING ON ROOF CURB, DIRECT OR BELT DRIVEN, HEAVY GAUGE SPUN-ALUMINUM WEATHERPROOF HOUSINGS OF THE HOODED DOME OR UPBLAST TYPE. PROVIDE PERMANENT SPLIT-CAPACITOR TYPE MOTOR FOR DIRECT DRIVEN FANS, AND CAPACITOR-START, INDUCTION-RUN TYPE MOTOR FOR BELT DRIVEN FANS.
 B. CENTRIFUGAL CEILING EXHAUSTERS SHALL BE ELECTRICALLY POWERED CENTRIFUGAL TYPE FAN SUITABLE FOR MOUNTING IN THE CEILING WITH A PERFORATED OFF-WHITE METAL GRILLE WITH A THUMBSCREW ATTACHMENT FOR EASY ACCESS TO FAN HOUSING. UNIT SHALL CONSIST OF A GALVANIZED STEEL HOUSING LINED WITH ACOUSTICAL INSULATION AND SHALL INCLUDE AN INTEGRAL BACKDRAFT DAMPER ON FAN DISCHARGE. MOTOR SHALL BE A PERMANENT SPLIT-CAPACITOR TYPE MOTOR, PERMANENTLY LUBRICATED, WITH THERMAL OVERLOAD PROTECTION. PROVIDE DISCONNECT SWITCH OR OTHER MEANS OF DISCONNECT AT MOTOR IN FAN HOUSING.
16. ROOFTOP UNITS:
 A. UNIT SHALL BE FACTORY-ASSEMBLED AND TESTED, DESIGNED FOR ROOF INSTALLATION, AND SHALL CONSIST OF SCROLL TYPE COMPRESSOR(S), CONDENSERS, EVAPORATOR COILS, THERMAL EXPANSION VALVE, CONDENSATE DRAIN PAN, CONDENSER AND EVAPORATOR FANS, CONDENSER FANS TO BE SEQUENCED. REFRIGERATION CONTROLS, GAS FIRED HEAT EXCHANGER OR ELECTRIC HEATING SECTION, FILTERS, AND DAMPERS. CAPACITIES AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED ON THE DRAWINGS.
 B. COMPRESSOR(S): UNIT SHALL INCLUDE VIBRATION ISOLATORS AND CRANKCASE HEATER. REFRIGERANT CIRCUIT SHALL INCLUDE A FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVES, AND LIQUID LINE SERVICE VALVES.
 C. SAFETY CONTROLS SHALL INCLUDE:
  a) LOW PRESSURE CUTOUT, MANUAL RESET.
  b) HIGH PRESSURE CUTOUT, MANUAL RESET.
  c) COMPRESSOR MOTOR OVERLOAD PROTECTION, MANUAL RESET.
  d) ANTI-RECYCLING TIMING DEVICE.
  e) ADJUSTABLE LOW-AMBIENT LOCKOUT.
  f) OIL PRESSURE SWITCH.
 D. REFRIGERANT COIL: ALUMINUM FINS BONDED TO SEAMLESS COPPER TUBE BY MEANS OF MECHANICAL EXPANSION. AN EQUALIZING TYPE VERTICAL DISTRIBUTOR SHALL ENSURE EACH COIL CIRCUIT RECEIVES THE SAME AMOUNT OF REFRIGERANT.
 E. ECONOMIZER SHALL CONSIST OF RETURN AIR DAMPER, OUTDOOR AIR DAMPER, AND BAROMETRIC RELIEF DAMPER. PROVIDE POWERED EXHAUST FAN WITH MANUFACTURER'S STANDARD CONTROLS FOR UNITS SCHEDULED ON THE DRAWINGS.
 F. GAS HEAT: INDIRECT FIRED, GAS HEAT EXCHANGER, AUTOMATIC SPARK IGNITION, MANUFACTURER'S STANDARD GAS TRAIN WITH REGULATOR (IF REQUIRED), AGA APPROVED. VERIFY GAS SERVICE PRESSURE TO INDIVIDUAL ROOFTOP UNITS.
 G. ROOFTOP UNITS SHALL BE WIRED TO SHUTDOWN ON A SIGNAL FROM THE SMOKE DETECTORS AND SHALL AUTOMATICALLY RESET WHEN THE SMOKE DETECTORS ARE RESET.
17. SMOKE DETECTORS:
 A. SMOKE DETECTORS SHALL BE FACTORY MOUNTED IN THE RETURN SIDE OF ROOF TOP UNITS. UNITS SHALL BE UL LISTED PHOTO-ELECTRIC SMOKE DETECTOR TYPE. PROVIDE WITH POWER BOARD AND SINGLE SENSOR.
 B. SMOKE DETECTOR REMOTE TEST STATION SHALL HAVE A REMOTE ALARM INDICATOR, POWER-ON INDICATOR, TONE-ALERT, TONE-ALERT SILENCE SWITCH, AND TEST/RESET SWITCH.
  1) DEVICES SHALL BE MOUNTED IN APPROVED LOCATION AS INDICATED ON THE FLOOR PLANS OR AS DIRECTED BY LOCAL AUTHORITY HAVING JURISDICTION.
 C. PROVIDE AND INSTALL A PHOTO-ELECTRIC SMOKE DETECTOR IN THE RETURN AIR DUCT FOR EACH HVAC UNIT AS INDICATED ON THE FLOOR PLANS. DETECTORS ARE TO BE PROVIDED WITH A SUB-BASE CONTAINING AUXILIARY RELAY CONTACTS. RELAY CONTACTS SHALL BE WIRED INTO UNIT CONTROL WIRING, SO AS TO SHUT UNIT DOWN IN THE CASE OF SMOKE DETECTION. PROVIDE ALL CONTROL WIRING. ELECTRICAL CONTRACTOR SHALL PROVIDE 120 VOLT POWER TO EACH DETECTOR.
 D. SMOKE DETECTORS SHALL BE INTERLOCKED. IN ALARM CONDITION OF A SINGLE DETECTOR ALL UNITS SHALL SHUT DOWN.
18. FLAMMABLE REFRIGERANTS
 A. EQUIPMENT WITH REFRIGERATION SYSTEMS USING GROUP A2L REFRIGERANTS SHALL MEET ALL REQUIREMENTS OF ASHRAE STD 15 AND THIS SECTION.
 B. LISTING AND INSTALLATION REQUIREMENTS:
 C. LISTED IN ACCORDANCE WITH UL 484 OR UL 60335-2-40/CSA C22.2 NO. 60335-2-40.
 D. THE NAMEPLATE SHALL INCLUDE A SYMBOL INDICATING THAT A FLAMMABLE REFRIGERANT IS USED, AS SPECIFIED BY THE PRODUCT LISTING.
 E. A LABEL INDICATING A FLAMMABLE REFRIGERANT IS USED SHALL BE PLACED ADJACENT TO SERVICE PORTS AND OTHER LOCATIONS WHERE SERVICE INVOLVING COMPONENTS CONTAINING REFRIGERANT IS PERFORMED, AS SPECIFIED BY THE PRODUCT LISTING.
 F. REFRIGERATION SYSTEMS SHALL HAVE AN INTEGRAL REFRIGERANT DETECTION SYSTEM THAT MEETS THE FOLLOWING REQUIREMENTS AS DOCUMENTED IN ASHRAE STD 15:
 G. UTILIZE A SET POINT, NONADJUSTABLE IN THE FIELD, TO GENERATE AN OUTPUT SIGNAL TO INITIATE MITIGATION ACTIONS.
 H. FIELD RECALIBRATION OF REFRIGERANT DETECTION SYSTEM SHALL NOT BE PERMITTED.
 I. BE CAPABLE OF DETECTING THE PRESENCE OF A SPECIFIED REFRIGERANT CORRESPONDING TO THE REFRIGERANT DESIGNATION OF THE REFRIGERANT CONTAINED IN THE REFRIGERATION SYSTEM.
 J. HAVE ACCESS FOR REPLACEMENT OF REFRIGERANT DETECTION SYSTEM COMPONENTS.
 K. HAVE SELF-DIAGNOSTICS TO DETERMINE OPERATIONAL STATUS OF THE SENSING ELEMENT.
 L. ENERGIZE AIR CIRCULATION FANS OF THE EQUIPMENT UPON FAILURE OF A SELF-DIAGNOSTIC CHECK.
 M. GENERATE AN OUTPUT SIGNAL IN NOT MORE THAN 30 SECONDS WHEN EXPOSED TO A REFRIGERANT CONCENTRATION OF 25% LFL (+0%, -1%).
 N. MANUFACTURER'S REFRIGERATION MITIGATION ACTION SHALL BE COMPLETED IN NOT MORE THAN 15 SECONDS AFTER THE INITIATION OF THE OUTPUT SIGNAL OF THE EQUIPMENT'S INTEGRAL REFRIGERANT DETECTION SYSTEM AND SHALL BE MAINTAINED FOR AT LEAST 5 MINUTES AFTER THE OUTPUT SIGNAL HAS RESET.
19. CONTROL WIRING:
 A. ELECTRICAL WIRING AND WIRING CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE TEMPERATURE CONTROL SYSTEM, SHALL BE PROVIDED BY THIS CONTRACTOR, UNLESS SPECIFICALLY SHOWN ON THE ELECTRICAL DRAWINGS OR SPECIFICATIONS.
 B. INSTALL CONTROL WIRING, WITHOUT SPLICES BETWEEN TERMINAL POINTS, COLOR CODED. INSTALL IN NEAT WORKMANLIKE MANNER, SECURELY FASTENED. INSTALL IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE AND THE ELECTRICAL SPECIFICATIONS.
  1) INSTALL CIRCUITS OVER 25 VOLT WITH COLOR CODED NUMBER 12 WIRE.
  2) INSTALL CIRCUITS UNDER 25 VOLT WITH COLOR CODED NUMBER 18 WIRE WITH 0.031 INCH HIGH TEMPERATURE 105 DEGREES F PLASTIC INSULATION ON EACH CONDUCTOR AND PLASTIC SHEATH OVER ALL.
  3) INSTALL ELECTRONIC CIRCUITS WITH COLOR CODED NUMBER 22 WIRE WITH 0.023 INCH POLYETHYLENE INSULATION ON EACH CONDUCTOR WITH PLASTIC JACKETED COPPER SHIELD OVER ALL.
  4) INSTALL LOW VOLTAGE CIRCUITS, LOCATED IN CONCRETE SLABS AND MASONRY WALLS, OR EXPOSED IN OCCUPIED AREAS, IN ELECTRIC CONDUIT.
  5) ALL WIRING IN AREAS USED AS AIR PLENUMS SHALL BE IN ELECTRIC CONDUIT EXCEPT THAT LOW VOLTAGE WIRING MAY BE TEFLON COATED, ALUMINUM SHEATHED CABLE OR OTHER WIRE SPECIFICALLY APPROVED FOR INSTALLATION IN AIR PLENUMS, WHERE ACCEPTABLE BY LOCAL CODES.
  6) ALL WIRING IN AREAS NOT USED FOR AIR MOVEMENT SHALL BE IN ELECTRIC METALLIC TUBING EXCEPT LOW VOLTAGE WIRING MAY BE IN APPROVED SIGNAL CABLE WHERE ACCEPTED BY LOCAL CODES.
 C. THERMOSTATIC CONTROLS TO HAVE A 5°F DEADBAND AND SETPOINT OVERLAP RESTRICTIONS.
  1) TEMPERATURE CONTROLS SETBACK TO BE 55°F (HEAT) AND 85° (COOL), 2-HOUR OCCUPANT OVERRIDE, 10-HOUR BACKUP.

10/09/2025
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER
PE-2016014280
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SH
ASSOCIATES
SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service by the Designer/Engineer and is intended for use on this project only. Pursuant to the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, including the overall form, arrangement and composition of spaces and elements appearing herein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use, or disclosure of information contained herein without prior written consent of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

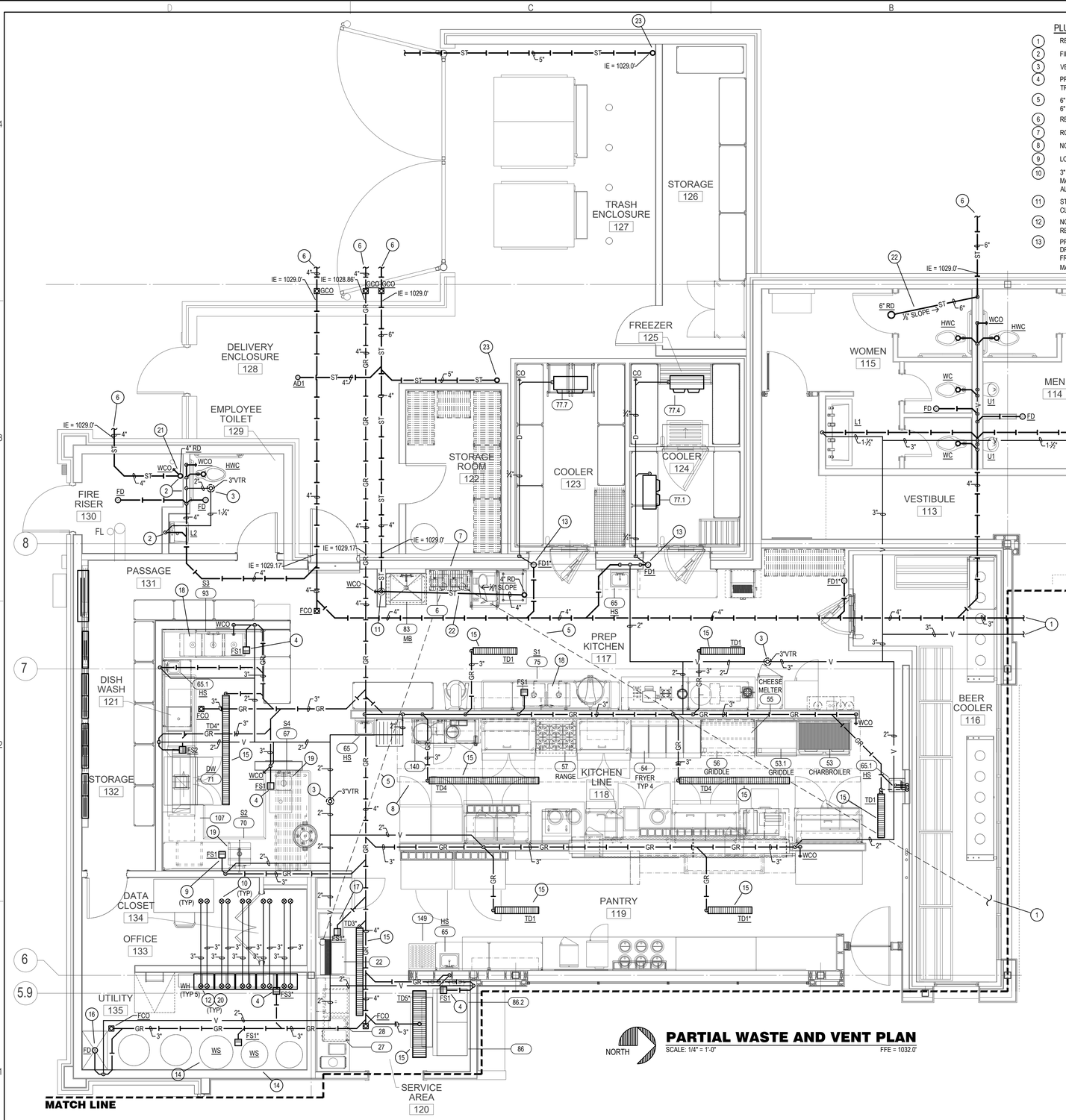
JOB NO.
DRAWN BY: TPF/PH

ISSUE		DATE
	ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

MECHANICAL AND PLUMBING SPECIFICATION

MP000



NORTH

PARTIAL WASTE AND VENT PLAN

SCALE: 1/4" = 1'-0" FFE = 1032.0'

PLUMBING PLAN NOTES: (THIS SHEET)

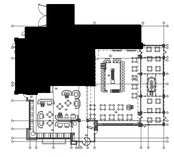
1. REFER TO SHEET P102 PLUMBING WASTE & VENT FLOOR PLAN FOR CONTINUATION.
2. FIRE CAULK PENETRATIONS IN WALL/CEILING TO MAINTAIN FIRE RATING AS REQUIRED.
3. VERIFY MINIMUM 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
4. PROVIDE INDIRECT DRAIN PIPING FROM EQUIPMENT TO FLOOR SINK/FLOOR DRAIN/ TRENCH DRAIN WITH AIR GAP.
5. 6" PVC PIPE UNDERSLAB FOR SODA LINES. PROVIDE LONG SWEEP ELBOWS. STUB UP 6" AFF.
6. REFER TO CIVIL DRAWINGS FOR CONTINUATION. MAINTAIN MIN 30" COVER.
7. ROUTE INDIRECT DRAIN FROM RPZ TO MOP BASIN WITH AIR GAP AS REQUIRED.
8. NO COMBUSTIBLE MATERIALS SHALL TO BE INSTALLED WITHIN 18" OF TYPE 1 HOOD.
9. LOCATE FLOOR SINK SUCH THAT ITS ACCESSIBLE FOR CLEANING & MAINTENANCE.
10. 3" PVC FLUE & 3" PVC COMBUSTION AIR PIPING FOR WATER HEATER THRU ROOF TO MANUFACTURER'S TERMINATION KIT AS REQUIRED. VERIFY 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES. REFER TO SHEET P301 FOR CONTINUATION.
11. STORM PIPING DOWN INSIDE WALL TO BELOW FINISHED FLOOR. PROVIDE CLEAN OUT AT BASE OF RISER.
12. NO PIPING SHALL BE INSTALLED IN SUCH A MANNER THAT PREVENTS THE REMOVAL/REPLACEMENT OF ANY INDIVIDUAL WATER HEATERS.
13. PROVIDE ¾" CONDENSATE DRAIN FOR REFRIG/FREEZER FROM EVAP COIL TO FLOOR DRAIN/SINK. COORDINATE WITH ELECTRICAL CONTRACTOR TO HEAT TRACE LINES IN FREEZER AS REQUIRED. ALL HEAT TRACED CONDENSATE PIPES TO BE OF COPPER MATERIAL. COORDINATE WITH ELEC. CONTRACTOR. MIN. PITCH TO BE ¼"/FT.
14. ROUTE DRAIN FROM WS TO FS1 WITH AIR GAP AS REQUIRED.
15. PROVIDE "REMOVE ME NOT" STRAINER.
16. ROUTE INDIRECT DRAIN FROM RPZ TO FLOOR DRAIN WITH AIR GAP AS REQUIRED.
17. PROVIDE 1" DRAIN FROM EACH ICE MACHINE TO FLOOR SINK WITH AIR GAP AS REQUIRED.
18. ROUTE INDIVIDUAL 1-½" COPPER OR SCHEDULE 80 PVC DRAIN PIPING FROM EACH BOWL OF SINK TO FLOOR SINK WITH AN AIR GAP.
19. PROVIDE INDIRECT DRAIN PIPING FROM SINK TO FLOOR SINK/FLOOR DRAIN WITH AIR GAP AS REQUIRED BY EQUIPMENT MANUFACTURER. REFER TO KEP.
20. SUPPORT WATER HEATER FROM WALL AS REQUIRED BY MANUFACTURER.
21. ROUTE STORM PIPING FROM ROOF TO BELOW FLOOR AS SHOWN. PROVIDE CLEANOUT AT BASE OF PIPE STACK.
22. STORM PIPING DOWN THROUGH ROOF AND ROUTED AS HIGH AS POSSIBLE AT ⅛" SLOPE.
23. DOWNSPOUT FROM GUTTER DOWN TO BELOW GRADE.

PLUMBING SYMBOLS

- SOIL AND WASTE PIPING BELOW GRADE
- SOIL AND WASTE PIPING ABOVE GRADE
- GR GREASE WASTE PIPING BELOW GRADE
- ST STORM PIPING BELOW GRADE
- ST STORM PIPING ABOVE GRADE
- V SANITARY VENT PIPING ABOVE GRADE
- V SANITARY VENT PIPING BELOW GRADE
- CW DOMESTIC COLD WATER PIPING
- CW DOMESTIC COLD WATER PIPING BELOW FLOOR
- HW DOMESTIC HOT WATER PIPING
- HW DOMESTIC HOT WATER PIPING BELOW FLOOR
- HWC DOMESTIC HOT WATER RECIRC PIPING
- SW DOMESTIC SOFT COLD WATER PIPING
- D EQUIPMENT DRAIN LINE
- G GAS PIPING
- F FIRE LINE
- PIPING TURNING DOWN
- PIPING TURNING UP
- TEE TOP CONNECTION
- UNION
- BACKFLOW PREVENTER
- GCO GRADE CLEAN OUT
- FCO FLOOR CLEAN OUT
- WCO WALL CLEAN OUT
- FD FLOOR DRAIN
- VALVE
- SOLENOID VALVE
- CHECK VALVE
- (A) MATCH MARKS ON PLUMBING RISER DIAGRAM
- IE INVERT ELEVATION OF PIPE
- ZL CHECK VALVE

PLUMBING GENERAL NOTES:

1. INSTALL ALL PIPE, ETC. AS HIGH AS POSSIBLE.
2. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES.
4. REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING PIPING, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
5. PROVIDE 1" SCHEDULE 40 PVC CONDENSATE DRAIN PIPE FOR EACH ROOFTOP UNIT LAID DIRECTLY ON ROOF TO NEAREST ROOF DRAIN. PROVIDE WATER TRAP AND CLEAN OUTS AS DETAILED. SECURE PVC PIPE TO DRAIN WITH NYLON STRAP.
6. NO PIPING SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
7. PROVIDE A WATTS #LF007 (OR EQUAL) PRIOR TO CONNECTION OF ALL EQUIPMENT SIMILAR TO COFFEE, TEA BREWERS, ICE MACHINES, ETC. THAT HAVE A DIRECT WATER CONNECTION TO IT.
8. CONTRACTOR TO USE ALL MEANS TO PREVENT CONSTRUCTION DEBRIS FROM ENTERING WASTE OR WATER PIPING. ALL PIPING TO TO THOROUGHLY FLUSHED AFTER COMPLETION OF ALL REQUIRED PIPING INSTALLATION PROCEDURES LOCATED IN THE SPECIFICATIONS.
9. ELECTRICAL BOND GAS PIPING SYSTEM PER 2018 IFGC SECTION 310.



KEY PLAN

SCALE: NTS

10/09/2025

REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24006
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is produced as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Work is Copyright Protected Act of 1990, all drawings, specifications, data and models created by the Engineer are instruments of service and shall remain the property of the Engineer. Any reuse without written consent of the Engineer, constitute the original, copyrighted work of the Designer/Engineer. As reproduction, use or publication by permission is strictly prohibited. Any unauthorized reuse without permission shall be unlawful and prohibited. © 2003 BC Engineers, Inc.

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

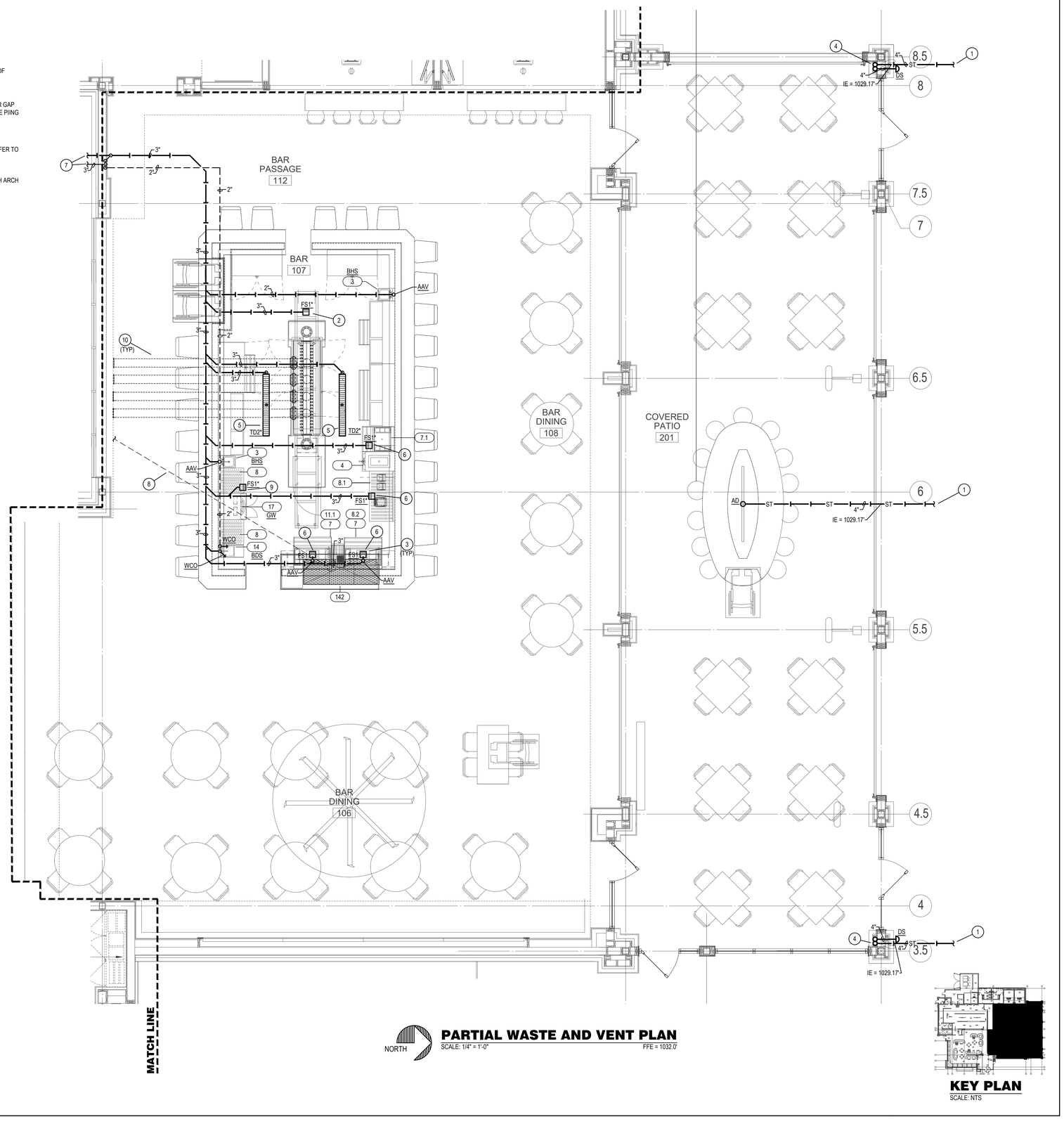
SHEET 24x36

PARTIAL WASTE AND VENT PLAN

P101

PLUMBING PLAN NOTES:

1. REFER TO CIVIL DRAWINGS FOR CONTINUATION. MAINTAIN MIN 30" COVER.
2. PROVIDE INDIRECT DRAIN FROM BEER DRAIN TROUGHS TO FLOOR SINK.
3. LOCATE FLOOR SINK SUCH THAT ITS ACCESSIBLE FOR CLEANING & MAINTENANCE.
4. STORM PIPING DOWN INSIDE WALL TO BELOW FINISHED FLOOR. PROVIDE CLEAN OUT AT BASE OF RISER. REFER TO SHEET P301.
5. PROVIDE "REMOVE ME NOT" STRAINER.
6. PROVIDE INDIRECT DRAIN PIPING FROM BAR EQUIPMENT TO FLOOR SINK/FLOOR DRAIN WITH AIR GAP AS REQUIRED BY EQUIPMENT MANUFACTURER. REFER TO KEP. ALL EXPOSED DRAIN AND WASTE PIING IN BAR AREA TO BE BLACK SCHEDULE 80 (ABS) PIPING.
7. REFER TO SHEET P101 FOR CONTINUATION.
8. 6" PVC PIPE UNDERSLAB FOR SODA LINES. PROVIDE LONG SWEEP ELBOWS. STUB UP 6" AFF. REFER TO ARCH SHEET A301 FOR MORE INFORMATION.
9. PROVIDE INDIRECT DRAIN FROM GLASSWASHER TO FLOOR SINK WITH AIR GAP.
10. 8" PVC PIPE UNDERFLOOR FOR BEER LINES. PROVIDE LONG SWEEP ELBOWS. COORDINATE WITH ARCH DRAWINGS FOR EXACT LOCATIONS.



PARTIAL WASTE AND VENT PLAN

SCALE: 1/4" = 1'-0" FFE = 1032.0'

NORTH

KEY PLAN

SCALE: NTS

10/09/2025

STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is produced as an instrument of service and is the property of the Engineer and shall not be used in whole or part for any purpose not specifically authorized in writing by the Engineer. Any unauthorized use, including but not limited to the Architectural Work Copyright Protection Act of 1990, all drawings, specifications, details and other documents, including those in electronic form, prepared by the Engineer and its consultants and agents, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, electronic or mechanical, without the prior written consent of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

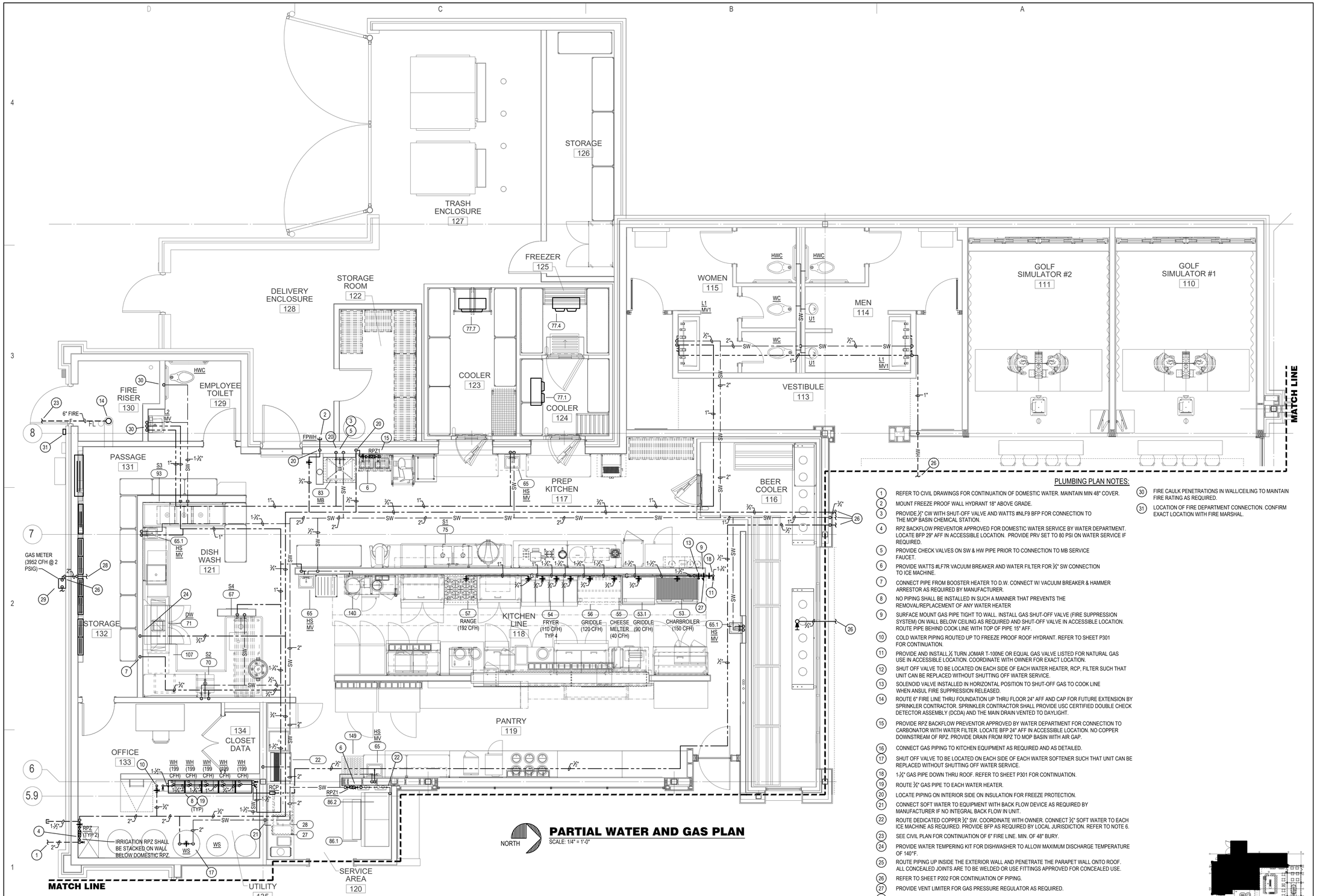
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24X36

PARTIAL WASTE AND VENT PLAN

P102



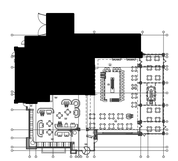
PARTIAL WATER AND GAS PLAN

NORTH

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

PLUMBING PLAN NOTES:

1. REFER TO CIVIL DRAWINGS FOR CONTINUATION OF DOMESTIC WATER. MAINTAIN MIN 48" COVER.
2. MOUNT FREEZE PROOF WALL HYDRANT 18" ABOVE GRADE.
3. PROVIDE ¾" CW WITH SHUT-OFF VALVE AND WATTS #NLF9 BFP FOR CONNECTION TO THE MOP BASIN CHEMICAL STATION.
4. RPZ BACKFLOW PREVENTOR APPROVED FOR DOMESTIC WATER SERVICE BY WATER DEPARTMENT. LOCATE BFP 29" AFF IN ACCESSIBLE LOCATION. PROVIDE PRV SET TO 80 PSI ON WATER SERVICE IF REQUIRED.
5. PROVIDE CHECK VALVES ON SW & HW PIPE PRIOR TO CONNECTION TO MB SERVICE FAUCET.
6. PROVIDE WATTS #LF7R VACUUM BREAKER AND WATER FILTER FOR ¾" SW CONNECTION TO ICE MACHINE.
7. CONNECT PIPE FROM BOOSTER HEATER TO D.W. CONNECT W/ VACUUM BREAKER & HAMMER ARRESTOR AS REQUIRED BY MANUFACTURER.
8. NO PIPING SHALL BE INSTALLED IN SUCH A MANNER THAT PREVENTS THE REMOVAL/REPLACEMENT OF ANY WATER HEATER
9. SURFACE MOUNT GAS PIPE TIGHT TO WALL. INSTALL GAS SHUT-OFF VALVE (FIRE SUPPRESSION SYSTEM) ON WALL BELOW CEILING AS REQUIRED AND SHUT-OFF VALVE IN ACCESSIBLE LOCATION. ROUTE PIPE BEHIND COOK LINE WITH TOP OF PIPE 15" AFF.
10. COLD WATER PIPING ROUTED UP TO FREEZE PROOF ROOF HYDRANT. REFER TO SHEET P301 FOR CONTINUATION.
11. PROVIDE AND INSTALL ½ TURN JOMAR T-100NE OR EQUAL GAS VALVE LISTED FOR NATURAL GAS USE IN ACCESSIBLE LOCATION. COORDINATE WITH OWNER FOR EXACT LOCATION.
12. SHUT OFF VALVE TO BE LOCATED ON EACH SIDE OF EACH WATER HEATER, RCP, FILTER SUCH THAT UNIT CAN BE REPLACED WITHOUT SHUTTING OFF WATER SERVICE.
13. SOLENOID VALVE INSTALLED IN HORIZONTAL POSITION TO SHUT-OFF GAS TO COOK LINE WHEN ANSUL FIRE SUPPRESSION RELEASED.
14. ROUTE 6" FIRE LINE THRU FOUNDATION UP THRU FLOOR 24" AFF AND CAP FOR FUTURE EXTENSION BY SPRINKLER CONTRACTOR. SPRINKLER CONTRACTOR SHALL PROVIDE USC CERTIFIED DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) AND THE MAIN DRAIN VENTED TO DAYLIGHT.
15. PROVIDE RPZ BACKFLOW PREVENTOR APPROVED BY WATER DEPARTMENT FOR CONNECTION TO CARBONATOR WITH WATER FILTER. LOCATE BFP 24" AFF IN ACCESSIBLE LOCATION. NO COPPER DOWNSTREAM OF RPZ. PROVIDE DRAIN FROM RPZ TO MOP BASIN WITH AIR GAP.
16. CONNECT GAS PIPING TO KITCHEN EQUIPMENT AS REQUIRED AND AS DETAILED.
17. SHUT OFF VALVE TO BE LOCATED ON EACH SIDE OF EACH WATER SOFTENER SUCH THAT UNIT CAN BE REPLACED WITHOUT SHUTTING OFF WATER SERVICE.
18. 1-¼" GAS PIPE DOWN THRU ROOF. REFER TO SHEET P301 FOR CONTINUATION.
19. ROUTE ¾" GAS PIPE TO EACH WATER HEATER.
20. LOCATE PIPING ON INTERIOR SIDE ON INSULATION FOR FREEZE PROTECTION.
21. CONNECT SOFT WATER TO EQUIPMENT WITH BACK FLOW DEVICE AS REQUIRED BY MANUFACTURER IF NO INTEGRAL BACK FLOW IN UNIT.
22. ROUTE DEDICATED COPPER ¾" SW. COORDINATE WITH OWNER. CONNECT ¾" SOFT WATER TO EACH ICE MACHINE AS REQUIRED. PROVIDE BFP AS REQUIRED BY LOCAL JURISDICTION. REFER TO NOTE 6.
23. SEE CIVIL PLAN FOR CONTINUATION OF 6" FIRE LINE. MIN. OF 48" BURY.
24. PROVIDE WATER TEMPERING KIT FOR DISHWASHER TO ALLOW MAXIMUM DISCHARGE TEMPERATURE OF 140°F.
25. ROUTE PIPING UP INSIDE THE EXTERIOR WALL AND PENETRATE THE PARAPET WALL ONTO ROOF. ALL CONCEALED JOINTS ARE TO BE WELDED OR USE FITTINGS APPROVED FOR CONCEALED USE.
26. REFER TO SHEET P202 FOR CONTINUATION OF PIPING.
27. PROVIDE VENT LIMITER FOR GAS PRESSURE REGULATOR AS REQUIRED.
28. REFER TO SHEET P301 FOR CONTINUATION OF PIPING.
29. COORDINATE WITH GAS COMPANY AS REQUIRED FOR INSTALLATION OF GAS METER WITH A CAPACITY OF 3952 CFH @ 2 psi WITH SHUT-OFF VALVE. LOCATED NEAR PROPERTY LINE ON NORTH SIDE OF PROPERTY. VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING. GAS PIPING SIZES BASED ON 191 FT ESTIMATE LONGEST LENGTH OF PIPE. OBTAIN APPROVAL FROM GAS COMPANY FOR ELEVATED PRESSURE BEFORE INSTALLING ANY GAS PIPING.
30. FIRE CAULK PENETRATIONS IN WALL/CEILING TO MAINTAIN FIRE RATING AS REQUIRED.
31. LOCATION OF FIRE DEPARTMENT CONNECTION. CONFIRM EXACT LOCATION WITH FIRE MARSHAL.



KEY PLAN

SCALE: NTS

10/09/2025

REGISTERED STATE OF MISSOURI THOMAS P. FRIEZE NUMBER PE-2016014280 PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, data and reports prepared by the Engineer are protected by federal copyright laws and other laws. All such items, contents constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, electronic or mechanical, without the written permission of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

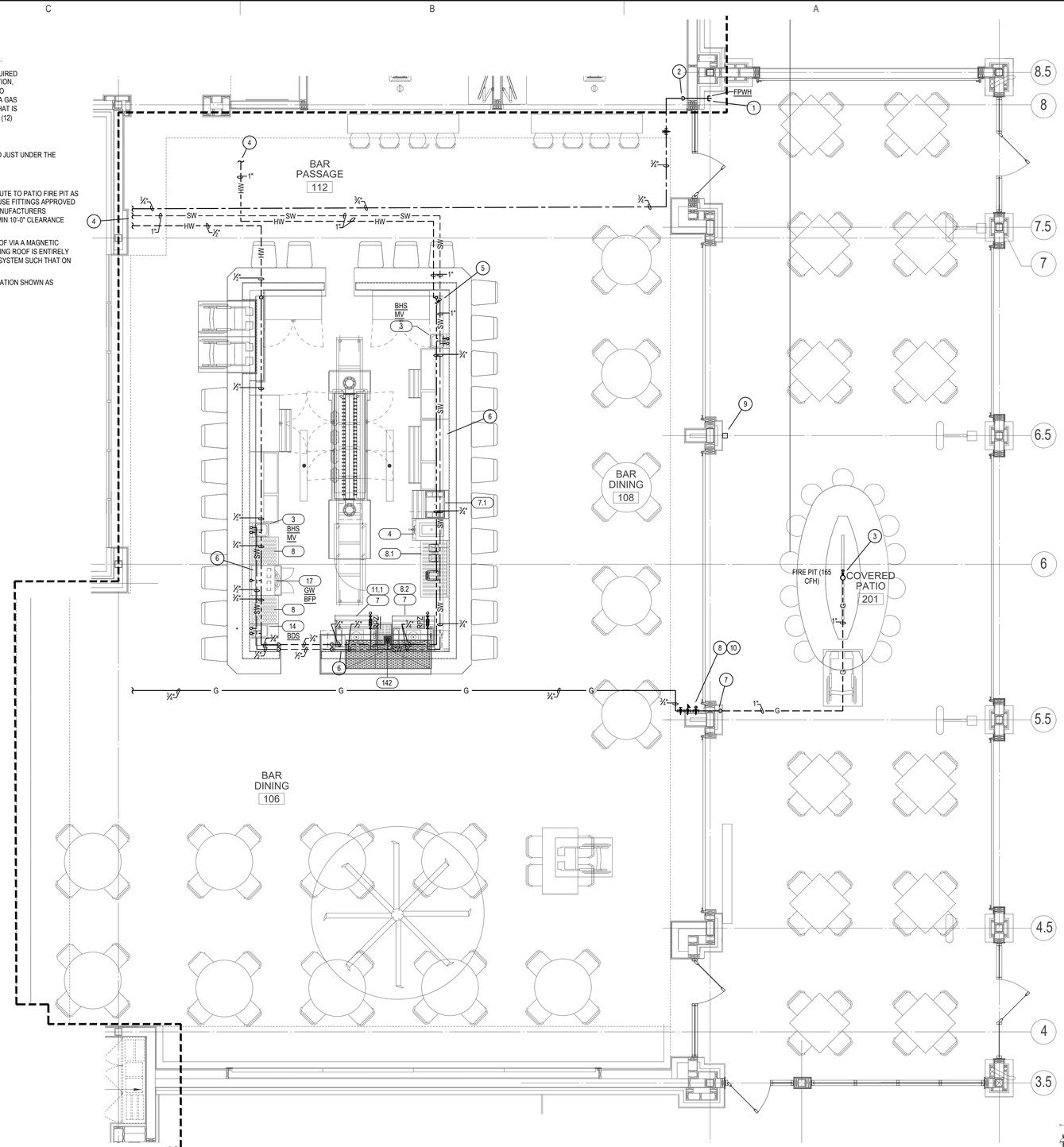
SHEET 24x36

PARTIAL WATER AND GAS PLAN

P201

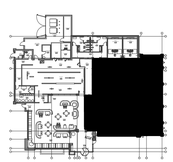
PLUMBING PLAN NOTES:

1. MOUNT FREEZE PROOF WALL HYDRANT 18" ABOVE GRADE.
2. LOCATE PIPING ON INTERIOR SIDE ON INSULATION FOR FREEZE PROTECTION.
3. ROUTE ¾" GAS PIPING UP FROM UNDERGROUND INTO FIRE PIT BASE AS REQUIRED BY MANUFACTURER. ALL CONCEALED JOINTS TO BE OF WELDED CONSTRUCTION, OR USE FITTINGS APPROVED FOR CONCEALED USE. CONNECT GAS PIPING TO FIRE PIT PER THE MANUFACTURERS REQUIREMENTS. ALL FIREPLACES WITH A GAS LOG LIGHTER MUST HAVE AN APPROVED GAS SHUT-OFF VALVE INSTALLED THAT IS ACCESSIBLE BY A REMOVABLE PLATE OR DOOR NOT LESS THAN (12) INCH BY (12) INCH.
4. REFER TO SHEET P201 FOR CONTINUATION OF PIPING.
5. ROUTE HOT AND SOFTENED COLD WATER PIPING UP FROM BELOW FLOOR TO JUST UNDER THE BAR TOP. PROVIDE SHUT OFF VALVES TO ISOLATE THE BAR PIPING.
6. ROUTE WATER PIPING CONCEALED UNDER BAR AS REQUIRED.
7. ROUTE ¾" GAS PIPE DOWN WALL TO TRACEPIPE PS-II BELOW GRADE AND ROUTE TO PATIO FIRE PIT AS REQUIRED. ALL CONCEALED JOINTS TO BE OF WELDED CONSTRUCTION, OR USE FITTINGS APPROVED FOR CONCEALED USE. INSTALL SAFETY PIPE GAS TRAIN VALVES PER THE MANUFACTURERS REQUIREMENTS. ROUTE VENT UP THROUGH ROOF AS REQUIRED. MAINTAIN MIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
8. GAS SHUT OFF SOLENOID VALVE SHALL BE INTERLOCKED WITH ROLLING ROOF VIA A MAGNETIC SWITCH, SUCH THAT GAS SOLENOID VALVE SHALL BE CLOSED UNLESS ROLLING ROOF IS ENTIRELY OPEN. GAS SOLENOID SHALL ALSO BE INTERLOCKED WITH CO DETECTIONS SYSTEM SUCH THAT ON LOW ALARM, SHUT-OFF VALVE CLOSES.
9. INSTALL EMERGENCY SHUT-OFF VALVE FOR FIRE PITS AND CONTROL IN LOCATION SHOWN AS REQUIRED.
10. PROVIDE VENT LIMITER FOR GAS PRESSURE REGULATOR AS REQUIRED.



PARTIAL WATER AND GAS PLAN
SCALE: 1/4" = 1'-0"

NORTH



KEY PLAN
SCALE: NTS

10/09/2025
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, details and electronic files prepared by the Engineer are protected by federal copyright laws. All such drawings, specifications and electronic files, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, in whole or part, is prohibited unless prior written permission is obtained and proper credit is given to the Engineer. Unauthorized use of and/or modification of these documents without the prior written consent of BC Engineers, Inc. automatically invalidates any warranty and/or representation contained in these documents, and will subject the user to claims, demands, damages, costs, liabilities, losses and expenses including but not limited to attorney's fees and costs. Any such use or reuse, or modification without written verification or adaptation by BC Engineers, Inc. will be at user's sole risk and without liability or legal exposure to BC Engineers, Inc. User shall indemnify and hold harmless BC Engineers, Inc. from all claims, damages, losses and expenses including attorney's fees arising out of or resulting therefrom. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

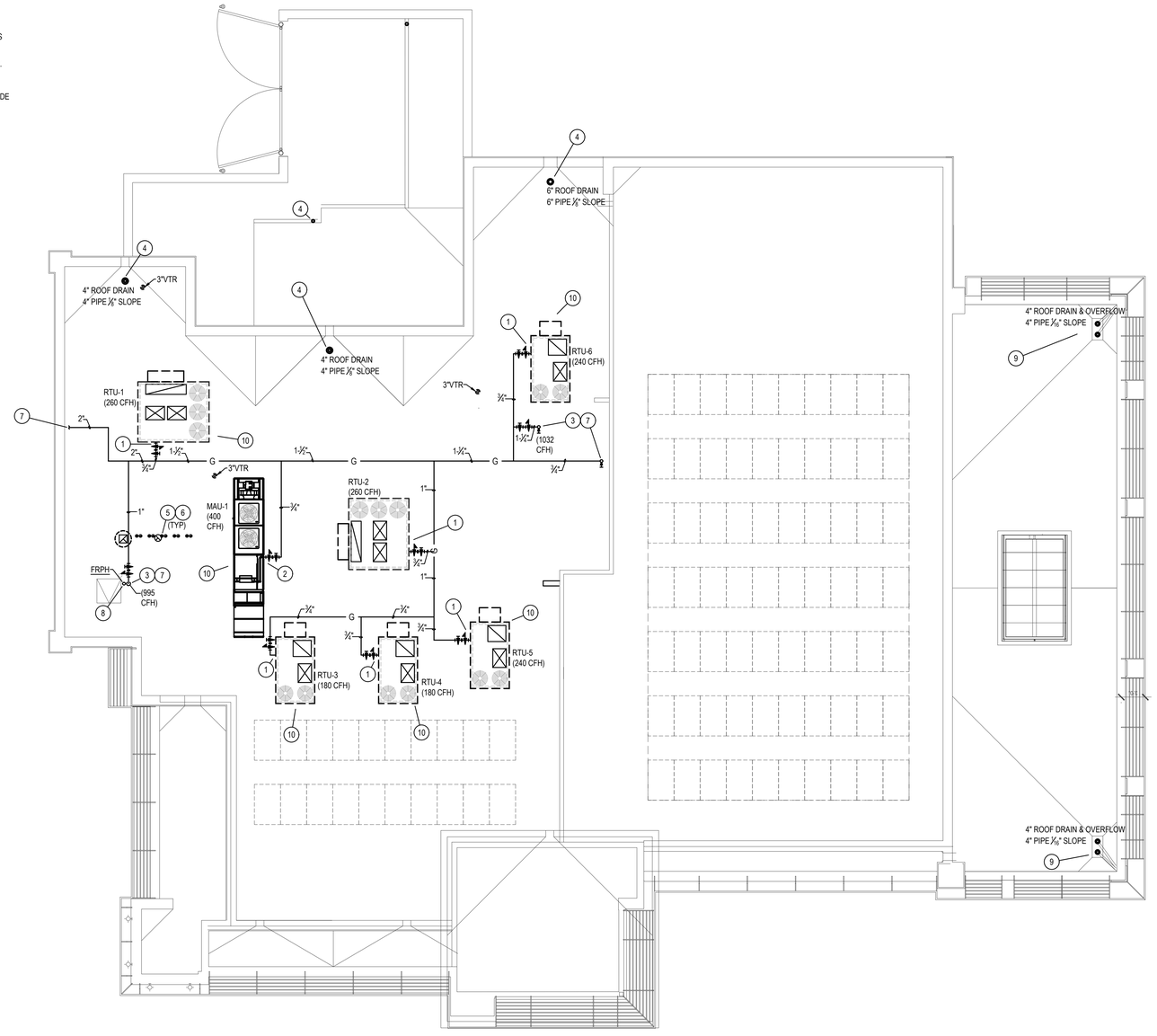
SHEET 24x36

PARTIAL WATER AND GAS PLAN

P202

PLUMBING PLAN NOTES:

1. CONNECT ¾" GAS PIPING TO ROOF TOP UNITS AFTER REGULATOR AS DETAILED AND AS REQUIRED BY THE MANUFACTURER.
2. CONNECT 1" GAS PIPING TO MAU AFTER REGULATOR AS DETAILED AND AS REQUIRED BY THE MANUFACTURER.
3. GAS PIPING DOWN THROUGH ROOF. SEAL PENETRATION WEATHER TIGHT.
4. REFER TO P101 FOR CONTINUATION OF STORM DRAIN.
5. 3" PVC FLUE AND COMBUSTION AIR INTAKE PIPES THROUGH ROOF. PROVIDE MANUFACTURER'S RECOMMENDED VENT TERMINATION. SEAL PENETRATION WEATHER TIGHT.
6. MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR INTAKES.
7. REFER TO SHEET P201 FOR CONTINUATION.
8. COLD WATER PIPING UP THROUGH ROOF. SEAL PENETRATION WEATHER TIGHT.
9. REFER TO SHEET P102 FOR CONTINUATION.
10. CONNECT CONDENSATE TO RTU/MAU AS REQUIRED AND AS DETAILED.



PLUMBING ROOF PLAN
SCALE: 1/8" = 1'-0"

10/09/2025
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer or under his supervision. This drawing is provided as an instrument of service and shall remain the property of the Engineer whether the project for which it is intended is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, data and electronic files prepared by the Engineer are protected by copyright and other intellectual property laws. The owner, or owner's representative, is granted a limited, non-exclusive, non-transferable license to use the drawings, specifications, data and electronic files prepared by the Engineer, for purposes of constructing, using, and maintaining the project, provided that the owner adheres to all terms and conditions of this agreement. The owner shall not use the drawings, specifications, data and electronic files prepared by the Engineer for any other project without the prior written agreement of the Engineer. Any unauthorized use, sharing, modification, or reproduction of these documents, in whole or in part, is strictly prohibited and may result in legal action. By accessing or using these documents, you acknowledge and agree to these terms. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

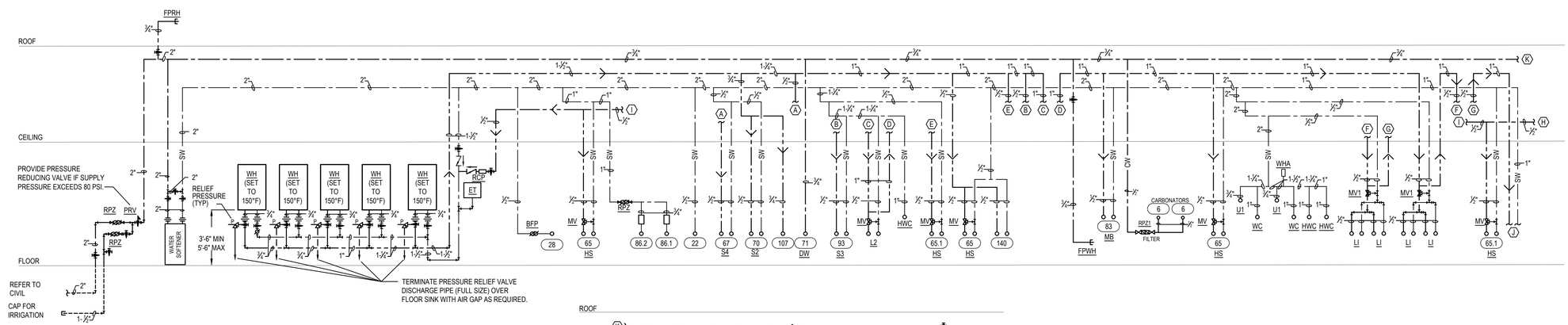
JOB NO.	
DRAWN BY:	TPF/PH

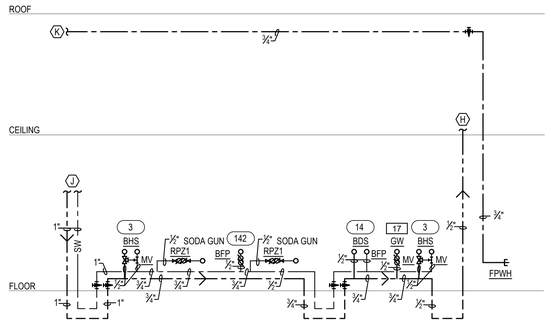
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

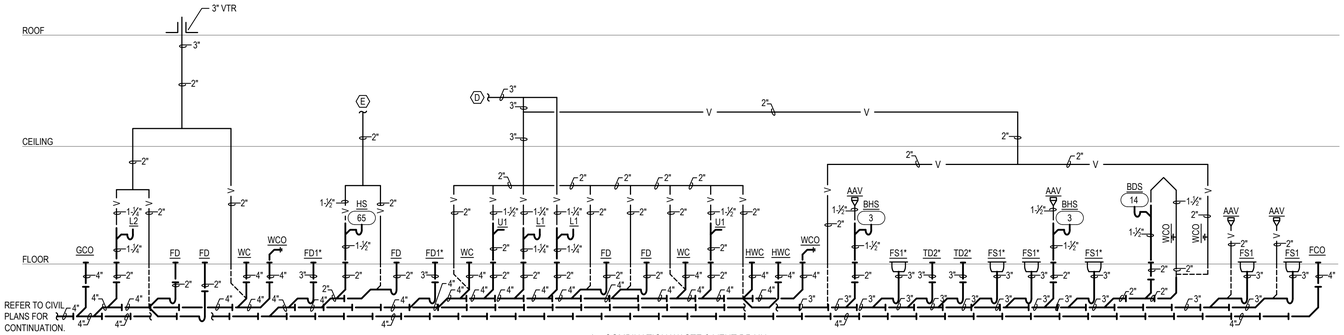
PLUMBING ROOF PLAN

P301



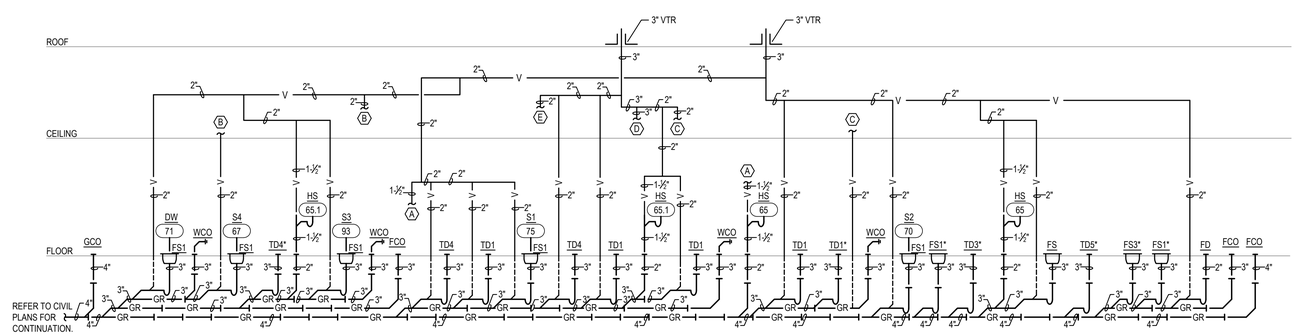


HOT & COLD WATER



* = COMBINATION WASTE & VENT DRAIN

WASTE & VENT



* = COMBINATION WASTE & VENT DRAIN

GREASE WASTE & VENT

PLUMBING RISER DIAGRAMS

SCALE: NONE

10/09/2025

STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as instruments of service for the project noted hereon. Any reuse of these documents without written verification or adaptation by the Engineer for the specific purpose intended will be at user's sole risk and without liability or legal exposure to the Engineer. Unauthorized reuse of these documents shall be construed as a violation of the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in these documents, including but not limited to the architectural design of the project herein, constitute the original, copyrighted work of the Design/Engineer. Any reproduction, use or publication by any method, in whole or in part, is prohibited. Title to these documents remains with the Design/Engineer whether the project is executed or not. © 2020 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)260-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

PLUMBING RISER DIAGRAMS

P401

PLUMBING FIXTURE SCHEDULE:

REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL NOTES ON COLORS AND SIZES.

TD1 TRENCH DRAIN: ABT, INC, POLYDRAIN-SHALLOW, PRECAST POLYMER CONCRETE TRENCH DRAIN. 1.0 M LENGTH, 164 MM WIDE, "REMOVE ME NOT" STRAINER, BOTTOM OUTLET AT THE END, (2) END CAPS, #2454.19 STAINLESS STEEL HEEL PROOF PERFORATED GRATE. (NO EXCEPTIONS)

TD2 TRENCH DRAIN: ABT, INC, POLYDRAIN-SHALLOW, PRECAST POLYMER CONCRETE TRENCH DRAIN. 1.5 M LENGTH, 164 MM WIDE, "REMOVE ME NOT" STRAINER, BOTTOM OUTLET AT THE END, (2) END CAPS, #2454.19 STAINLESS STEEL HEEL PROOF PERFORATED GRATE. (NO EXCEPTIONS)

TD3 TRENCH DRAIN: ABT, INC, POLYDRAIN-SHALLOW, PRECAST POLYMER CONCRETE TRENCH DRAIN. 2.0 M LENGTH, 164 MM WIDE, "REMOVE ME NOT" STRAINER, BOTTOM OUTLET AT THE END, (2) END CAPS, #2454.19 STAINLESS STEEL HEEL PROOF PERFORATED GRATE. (NO EXCEPTIONS)

TD4 TRENCH DRAIN: ABT, INC, POLYDRAIN-SHALLOW, PRECAST POLYMER CONCRETE TRENCH DRAIN. 2.5 M LENGTH, 164 MM WIDE, "REMOVE ME NOT" STRAINER, BOTTOM OUTLET AT THE END, (2) END CAPS, #2454.19 STAINLESS STEEL HEEL PROOF PERFORATED GRATE. (NO EXCEPTIONS)

TD5 TRENCH DRAIN: ZURN #ZS-895-SBG-L, LIGHT DUTY .75% PRE-SLOPED FIBERGLASS TRENCH DRAIN, 60" LENGTH, 12" WIDE, "REMOVE ME NOT" STRAINER, BOTTOM OUTLET AT THE END, (2) END CAPS, MEDIUM DUTY STAINLESS STEEL SLOTTED BAR GRATE. (NO EXCEPTIONS)

HS HAND SINK: PROVIDED BY KITCHEN EQUIPMENT SUPPLIER. PROVIDE GRID DRAIN WITH 1-1/2" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS. (NO EXCEPTIONS)

GI GREASE INTERCEPTOR: RELIABLE CONCRETE PRODUCTS, 1500 GALLON CONCRETE PRECAST GREASE INTERCEPTOR AND ASSOCIATED PIPING PER CODE REQUIREMENTS AND AS DETAILED.

ALT GI ALTERNATE GREASE INTERCEPTOR: SCHIER PRODUCTS #GB-1000, 1,000 GAL/200 GPM POLYETHYLENE GREASE INTERCEPTOR. COVERS SHALL BE WATER/GAS TIGHT AND HAVE 16,000 LBS LOAD CAPACITY. CERTIFIED TO ASME A112.14.3, CSA B481.1 AND IAPMO/ANSI Z1001-2021. ASSOCIATED PIPING PER CODE REQUIREMENTS AND AS DETAILED. VERIFY WITH LOCAL AHJ PRIOR TO ORDERING.

MV MIXING VALVE: WATTS #LFUSG-B, THERMOSTATIC MIXING VALVE, AND ANGLE CHECKSTOPS FOR 110°F WATER DISTRIBUTION. ASSE 1070

MV1 MIXING VALVE: WATTS, #LFMMV THERMOSTATIC CONTROLLED MIXING VALVE-LEAD FREE BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), SOLID WAX HYDRAULIC PRINCIPLE THERMOSTAT,INTEGRAL FILTER WASHERS AND CHECK VALVES ON HOT AND COLD INLETS.(SET TO 110°F) ASSE #1017,#1069,#1070

WH HOT WATER HEATER: NORITZ, #NCC1991-DV, GAS FIRED, INSTANTANEOUS HEATER, 199 MBTUH INPUT, 3.7 GPM AT 100 DEGREES F RISE. SET TO 140°F. (5) WATER HEATERS REQUIRED.

PROVIDE EACH WATER HEATER WITH REMOTE CONTROLLER, PROVIDE ONE SYSTEM CONTROLLER, CONDENSATE DRAIN ON EXHAUST FLUE, PRESSURE RELIEF ON HOT DISCHARGE PIPE FROM WATER HEATER PER MANUFACTURERS REQUIREMENTS. WATER HEATERS SET TO 150°F. CONFIRM INSTALLATION WITH LATEST INSTALLATION SCHEMATICS. PROVIDE AND INSTALL MANUFACTURER'S ISOLATION VALVE WITH FLUSH OUT PORT FOR EACH UNIT ON INLET AND OUTLET OF HEATER.

ANY CONCERNS OR QUESTIONS IN REGARDS TO THE INSTALLATION ON ANY ASPECT OF THE WATER HEATING SYSTEM, CONTACT EITHER THE LOCAL NORITZ DISTRIBUTOR OR THE ENGINEER IMMEDIATELY.

ET HOT WATER EXPANSION TANK: AMTROL, #ST-12, 4.4 GALLON EXPANSION TANK WITH DIAPHRAGM.

RCP HOT WATER RECIRCULATING PUMP: BELL & GOSSETT, #SERIES NBF-10, 3 GPM @ 7 FT. HEAD, 1/12 HP, 120 VOLT, WITH HONEYWELL #L6006C1018 AQUASTAT & TACO #265-3 7-DAY DIGITAL TIMER, 135°-140°F, ½"Ø PIPE.

WS WATER SOFTENER: PROVIDED & SET BY OWNER. (ALL PIPING BY P.C.) PROVIDE VALVING AS REQUIRED FOR CONNECTION. REFER TO RISER DIAGRAM.

RD ROOF DRAIN: ZURN, #Z-100-C-EA-R, CAST IRON BODY, FLASHING CLAMP, GRAVEL STOP, UNDERDECK CLAMP, SUMP RECEIVER, AND CAST IRON DOME.

HWC WATER CLOSET (HANDICAPPED): TOTO, #CT705ELN, VITREOUS CHINA, FLOOR MOUNTED, FLOOR OUTLET, 17-1/2" HIGH ELONGATED BOWL, SIPHON-JET ACTION, #TET1LN-32 FLUSH VALVE, 1.28 GAL/FLUSH, #SC534 WHITE OPEN FRONT ELONGATED SEAT WITH CHECK HINGE. HANDLE ON WIDE SIDE OF FIXTURE.

WC WATER CLOSET: TOTO, #CT705EN, VITREOUS CHINA, FLOOR MOUNTED, FLOOR OUTLET, ELONGATED BOWL, SIPHON-JET ACTION, #TET1LN-32 FLUSH VALVE, 1.28 GAL/FLUSH, #SC534 WHITE OPEN FRONT ELONGATED SEAT WITH CHECK HINGE.

L1 HANDICAP LAVATORY, WALL HUNG: PROVIDED BY OWNER, SLOAN AER-DEC INTEGRATED SINK SYSTEM, AD 8X000 WITH SLOAN DECK MOUNTED HAND DRYER EHD-510, SLOAN AUTOMATED SENSOR FAUCET EFX SERIES 0.5 GPM. PROVIDE 1-1/2" TAILPIECE, P-TRAP WITH CLEANOUT, CHROME PLATED LOOSE KEY ANGLE STOPS AND RISERS. INSTALL PER THE MANUFACTURERS REQUIREMENTS.

L2 HANDICAP LAVATORY, WALL HUNG: TOTO #LT307, 20"x 18", VITREOUS CHINA, FRONT OVERFLOW, DELTA #501 FAUCET WITH SINGLE METAL LEVER FAUCET, 0.5 GPM, OFFSET GRID ELBOW DRAIN AND 1-1/4" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT (MOUNTED PARALLEL WITH WALL), CHROME PLATED LOOSE KEY ANGLE STOPS AND RISERS, FLOOR MOUNTED CONCEALED ARM LAVATORY SUPPORT, INSULATE EXPOSED DRAIN, WATER SUPPLIES, AND VALVES WITH PROWRAP SEAMLESS MOLDED CLOSED CELL VINYL INSULATION.

U1 URINAL, WALL HUNG: TOTO, #UT104E, LOW CONSUMPTION, 0.5 GAL/FLUSH, VITREOUS CHINA, WASH OUT ACTION, WALL HUNG URINAL WITH 3/4" TOP SPUD, TOTO #TEU1LN12 ECO POWER FLUSH VALVE, FLOOR MOUNTED FIXTURE SUPPORT. SET RIM HEIGHT PER ARCHITECTURAL DRAWINGS. (NO EXCEPTIONS)

MB MOP BASIN: ZURN, #Z-415-P, CAST IRON FLOOR DRAIN WITH ADJUSTABLE TOP AND 6" NIKALOY STRAINER. STERN WILLIAMS #T-10-VB FAUCET, VACUUM BREAKER, INTEGRAL STOPS, SPRING CHECK VALVES, WALL BRACE & PAIL HOOK, WALL BRACKET WITH 30" HOSE. (NO EXCEPTIONS ON FAUCET)

FPWH FREEZEPROOF WALL HYDRANT: ZURN #Z-1300, 3/4" SIZE, NICKEL-BRONZE FACE, KEY OPERATED, INTEGRAL VACUUM BREAKER.

FD FLOOR DRAIN: ZURN, #Z-415-P, CAST IRON FLOOR DRAIN WITH ADJUSTABLE TOP AND 6" NIKALOY STRAINER. PROVIDE WITH TRAP SEAL DEVICE.

FD1 FLOOR DRAIN: ZURN, #Z-415-5I, CAST IRON FLOOR DRAIN WITH RECESSED 6" NIKALOY STRAINER. PROVIDE WITH TRAP SEAL DEVICE.

FS1 FLOOR SINK: ZURN #Z-1910-K, CAST IRON RECEPTOR, A.R.E. INTERIOR, 8"x8" NICKEL BRONZE STRAINER, SEDIMENT BUCKET, 3" OUTLET. ½ OPEN GRATE.

FS2 FLOOR SINK: ZURN #Z-1901-K, CAST IRON RECEPTOR, A.R.E. INTERIOR, 12"x12" NICKEL BRONZE STRAINER, SEDIMENT BUCKET, 3" OUTLET. ½ OPEN GRATE.

FS3 FLOOR SINK: SIOUX CHIEF SQUAREMAX #861-3PN2, PVC FLOOR SINK, 12"x12" NICKEL BRONZE STRAINER, SEDIMENT BUCKET, 3" OUTLET. ½ OPEN GRATE.

RPZ REDUCED ZONE PRESSURE BACKFLOW PREVENTOR: WATTS #LF009, BRONZE BODY CONSTRUCTION, TWO, IN-LINE INDEPENDENT CHECK VALVES, REPLACEABLE CHECK SEATS WITH AN INTERMEDIATE RELIEF VALVE, AND BALL VALVE TEST COCKS. ASSE 1013, USC CERTIFIED

RPZ1 REDUCED ZONE PRESSURE BACKFLOW PREVENTOR: WATTS #LF909, TWO IN-LINE INDEPENDENT CHECK VALVES, REPLACEABLE CHECK SEATS WITH AN INTERMEDIATE RELIEF VALVE, AND BALL VALVE TEST COCKS. ASSE 1013, USC CERTIFIED

AD AREA DRAIN: JAY R SMITH, #2110 FLOOR DRAIN WITH CAST IRON GRATE, FREE STANDING SEDIMENT BUCKET.

AD1 AREA DRAIN: JAY R SMITH, #2142 FLOOR DRAIN WITH HEAVY DUTY TRACTOR GRATE, FREE STANDING SEDIMENT BUCKET.

AAV AIR ADMITTANCE VALVE : STUDOR MINI VENT, 1-1/2" AND 2" PIPE SIZES, ANSI/ASSE 1051, ANSI/ASSE 1050, NSF 14, WARNOCK HERSEY APPROVED. INSTALL PER THE MANUFACTURERS REQUIREMENTS.

FPRH FREEZEPROOF ROOF HYDRANT: MURDOCK M-3903 FREEZE RESISTANT SANITARY ROOF HYDRANT. NON-FREEZE SANITARY (SELF-CONTAINED) ROOF HYDRANT WITH GALVANIZED CASING; ADJUSTABLE FLOW WHEEL LOCK HANDLE; SEALED STAINLESS STEEL CANISTER, VENTURI AND ROOF MOUNT ASSEMBLY; 0.75 INCH NPT FEMALE INLET

S1 3-COMPARTMENT SINK: PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR. PROVIDE (3) 1-1/2" ROTARY OPERATED DRAINS WITH TAILPIECES, CHROME PLATED ANGLE STOPS AND RISERS.

S2 PRE RINSE SINK: PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR. PROVIDE 1-½" ROTARY OPERATED DRAIN WITH TAILPIECE, WASTE PIPING, CHROME PLATED ANGLE STOPS AND RISERS.

S3 PREP SINK: PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR. PROVIDE 1-½" TAILPIECE, WASTE PIPING, CHROME PLATED ANGLE STOPS AND RISERS.

S4 SOILED DISH SINK: PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR. PROVIDE 1-½" ROTARY OPERATED DRAIN WITH TAILPIECE, WASTE PIPING, CHROME PLATED ANGLE STOPS AND RISERS.

BHS BAR HAND SINK: PROVIDED BY KITCHEN EQUIPMENT SUPPLIER. PROVIDE GRID DRAIN WITH 1-1/2" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.

BDS BAR DUMP SINK: PROVIDED BY KITCHEN EQUIPMENT SUPPLIER. PROVIDE GRID DRAIN WITH 1-1/2" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.

GW GLASS WASHER: GLASS WASHER, PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR. CONNECT HOT WATER, SHUT-OFF VALVE AND DRAIN PIPING PER MANUFACTURERS REQUIREMENTS.

GR GLASS RINSER: GLASS RINSER, PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR. CONNECT HOT WATER, SHUT-OFF VALVE AND DRAIN PIPING PER MANUFACTURERS REQUIREMENTS.

DW DISHWASHER: HIGH TEMPERATURE DISHWASHER, PROVIDED BY KITCHEN EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR. CONNECT HOT WATER, SHUT-OFF VALVE AND DRAIN PIPING PER MANUFACTURERS REQUIREMENTS.

WHA WATER HAMMER ARRESTOR: JR SMITH 'HYDROTROL' #5000 LEAD-FREE WATER HAMMER ARRESTOR, SIZED AS PER MANUFACTURER'S RECOMMENDATIONS.

BFP DOUBLE CHECK BACKFLOW PREVENTOR: WATTS #LF007, LEAD FREE BRONZE BODY CONSTRUCTION, TWO IN-LINE INDEPENDENT CHECK VALVES, REPLACEABLE CHECK SEATS AND BALL VALVE TEST COCKS. ASSE 1015, USC CERTIFIED

GREASE INTERCEPTOR SIZING

GREASE INTERCEPTOR SIZING: IPC

EQUIPMENT	QTY.	DFU (EA.)	DFU (TOTAL)	EQUIVALENT GPM
FLOOR SINK 3"	9	3	27	13.5
FLOOR DRAIN	3	2	6	3
TRENCH DRAIN 3"	10	3	30	15
HAND SINK	5	2	10	5
SINK	5	3	15	7.5
MOP BASIN	1	3	3	1.5
TOTALS-			91	45.5

*PER 2018 IPC SECTION 709.3 DRAINAGE FIXTURE UNIT VALUES FOR CONTINUOUS OR SEMI-CONTINUOUS FLOW INTO A DRAINAGE SYSTEM SHALL BE COMPUTED ON THE BASIS THAT 1 GPM OF FLOW IS EQUAL TO 2 FIXTURE UNITS.

*PER THE 2018 IPC SECTION 1003.3.6 THE REQUIRED CAPACITY OF GRAVITY GREASE INTERCEPTORS SHALL BE DETERMINED BY THE PEAK FLOW IN GPM MULTIPLIED BY 30 MINUTES RETENTION TIME.

45.5 GPM PEAK FLOW * 30 MIN = 1,365 GALLONS MINIMUM VOLUME PRECAST INTERCEPTOR

45.5 GPM PEAK FLOW = MINIMUM 50 GPM HYDROMECHANICAL REQUIRED.

PIPE HANGER SCHEDULE

PIPE MATERIAL	MAXIMUM HANGER SPACING	HANGER ROD DIAMETER
ABS (All sizes)	4'	3/8"
PVC (All Sizes)	4'	3/8"
CPVC, 1 inch and smaller	3'	1/2"
CPVC, 1-1/4 inches and larger	4'	1/2"
Cast Iron (All Sizes)	5'	5/8"
Cast Iron (All Sizes) with 10 foot length of pipe	10'	5/8"
Copper Tube, 1-1/4 inches and smaller	6'	1/2"
Copper Tube, 1-1/2 inches and larger	10'	1/2"
Steel, 3 inches and smaller	12'	1/2"
Steel, 4 inches and larger	12'	5/8"
Pex, 1" and below without support channel	32"	3/8"
Pex, 1-1/4" and above without support channel	48"	3/8"
Pex ¾" and below with support channel	6'	3/8"
Pex 1" and above with support channel	8'	3/8"

PLUMBING FIXTURE BRANCH PIPING SCHEDULE

FIXTURE	WASTE	VENT	CW	HW
WATER CLOSET (FLUSH VALVE)	4"	2"	1"	- -
URINAL	2"	1-1/2"	3/4"	- -
LAVATORY	1-1/4"	1-1/4"	1/2"	1/2"
SINK	1-1/2"	1-1/2"	1/2"	1/2"
FLOOR DRAIN	2"	2"	- -	- -
FLOOR SINK	3"	2"	- -	- -
MOP BASIN	2"	2"	1/2"	1/2"
COLD FREEZE PROOF WALL HYDRANT	- -	- -	3/4"	- -
FREEZE PROOF ROOF HYDRANT	- -	- -	3/4"	- -

NOTE: INDIVIDUAL VENTS FOR FIXTURES ON PLANS AND RISER DIAGRAMS HAVE BEEN INCREASED WHERE HORIZONTAL VENT LENGTH IS IN EXCESS OF THE MAXIMUM DISTANCE INDICATED BY THE CODE.

FOODSERVICE PLUMBING SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	HW SIZE	HW AFF	CW SIZE	CW AFF	DW SIZE	DW AFF	GAS SIZE	GAS AFF	GAS MBTU
3	2	SPACE SAVER HAND SINK	1/2"	14"	1/2"	14"	1 1/2"	16"			
4	1	FROZEN DRINK MACHINE			1/2"	14"					
6	2	CARBONATORS- BY OTHERS			1/2"	72"					
7	2	UNDERBAR ICE CHEST- 36"									
7.1	1	UNDERBAR ICE CHEST- 24"									
8	2	UNDERBAR DRAINBOARD- 24"									
8.1	1	UNDERBAR DRAINBOARD- 48"									
8.2	1	UNDERBAR DRAINBOARD- 12"									
11.1	1	DRAIN PAN, 24" X 64"									
14	1	DUMP SINK	1/2"	14"	1/2"	14"					
17	1	UNDERCOUNTER GLASSWASHER	1/2"	14"							
22	1	SODA/ICE DISPENSER- BY OTHERS, 32" WIDE			1/2"	24"					
27	1	COFFEE BREWER - BY OTHERS			3/8"	48"					
28	1	ICED TEA BREWER- BY OTHERS			1/2"	48"					
53	1	CHARBROILER, GAS- 48"							3/4"	24"	150.0
53.1	1	GRIDDLES, 36"							3/4"	24"	90.0
54	4	FRYER W/ CASTERS & GAS HOSES							3/4"	24"	110.0
55	1	CHEESMELTER, GAS- 48"							3/4"	24"	40.0
56	1	GRIDDLE, GAS- 48"							3/4"	24"	120.0
57	1	6 BURNER COUNTERTOP RANGE							3/4"	24"	192.0
65	3	HAND SINK	1/2"	14"	1/2"	14"	1 1/2"	16"			
65.1	2	SPACE SAVER HAND SINK									
67	1	SOILED DISHTABLE W/ PRE-RINSE SINK	1/2"	14"	1/2"	14"					
70	1	PRE-RINSE FAUCET ASSEMBLY	1/2"	14"	1/2"	14"					
71	1	CONVEYOR DISHWASHER	3/4"	60"							
75	1	2-COMPARTMENT SINK	1/2"	14"	1/2"	14"					
77.1	1	COOLER EVAPORATOR									
77.4	1	FREEZER EVAPORATOR									
77.7	1	COOLER EVAPORATOR									
83	1	MOP SINK- BY GC	1/2"	36"	1/2"	36"	2"				
86	2	ICE MACHINE									
86.2	2	WATER FILTER			1/2"	80"					
93	1	3 COMPARTMENT SINK W/ DRAINBOARDS	1/2"	14"	1/2"	14"					
96.1	2	BEER COOLER EVAPORATORS									
107	1	ELECTRIC BOOSTER HEATER	3/4"	24"							
140	1	TILT KETTLE	1/2"	24"	1/2"	24"					
142	1	BAR GLASS RINSER			1/2"	24"					

PLUMBING DRAINAGE CALCULATIONS

FIXTURE	QUANTITY	FU	TOTAL FU
WATER CLOSETS	5	4	20
URINAL	2	4	8
LAVATORIES	5	1	5
SINKS	13	2	26
FLOOR DRAIN	6	2	12
FLOOR SINK	13	2	26
TRENCH DRAIN	12	2	24
DISHWASHER	1	3	3
MOP SINK	1	2	2
TOTAL			126 FU

VENT MAINS - 4"
WASTE MAIN - 4"

PLUMBING FIXTURE WATER COUNT

FIXTURE	QUANTITY	CW FU	CW TOTAL FU	HW FU	HW TOTAL FU	COMBINED FU	COMBINED TOTAL FU
WATER CLOSETS	5	10	50	0	0	5	50
URINAL	2	5	10	0	0	5	10
LAVATORIES	5	1.5	7.5	1.5	7.5	2	10
SINKS	13	2.25	29.25	2.25	29.25	3	39
GLASS WASHER	1	0	0	3	3	3	3
GLASS RINSER	1	3	3	0	0	3	3
DISHWASHER	1	3	3	3	3	4	4
MOP SINK	1	2.25	2.25	2.25	2.25	3	3
SODA SYSTEM	1	2	2	0	0	3	3
COFFEE/TEA BREWER	2	2	4	0	0	2	4
ICE MACHINE	2	3	6	0	0	3	6
FREEZE PROOF WALL HYDRANT	3	3	9	0	0	3	9
SODA GUN	2	2	4	0	0	2	4
FREEZE PROOF ROOF HYDRANT	1	3	3	0	0	3	3
			131 FU		45 FU		151 FU

COLD WATER MAIN - 2"
HOT WATER MAIN - 1-½"

GAS LOAD CALCULATION

EQUIPMENT TYPE	QUANTITY	BTU/HR	BTU/HR	EQUIPMENT OPERATING PRESSURE
ROOF TOP UNIT	2	260,000	520,000	7" WC
ROOF TOP UNIT	2	240,000	480,000	7" WC
ROOF TOP UNIT	2	180,000	360,000	7" WC
MAKE-UP AIR UNIT	1	400,000	400,000	8" WC- 14" WC
FIRE PIT	1	165,000	165,000	6"-7" WC
WATER HEATER	5	199,000	995,000	4"- 14" WC
CHARBROILER	1	150,000	150,000	7" WC- 10" WC
GRIDDLE	1	90,000	90,000	7" WC- 10" WC
RANGE	1	192,000	192,000	5" WC- 10" WC
FRYER	4	110,000	440,000	7" WC- 10" WC
GRIDDLE	1	120,000	120,000	5" WC- 10" WC
CHEESE MELTER	1	40,000	40,000	5" WC- 10" WC
TOTAL			3,952,000	REQUIRED GAS PRESSURE - 2 PSIG

10/09/2025
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5726 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

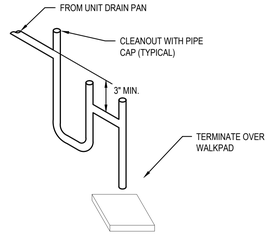
This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as to the Architectural Work Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in this drawing, constitute the original, copyrighted work of the Designed Engineer. Any reproduction, sale or publication of this drawing without the written permission of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

JOB NO.	
DRAWN BY:	TPF/PH
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

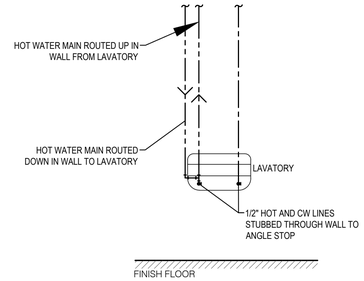
SHEET 24x36

PLUMBING DETAILS AND SCHEDULES

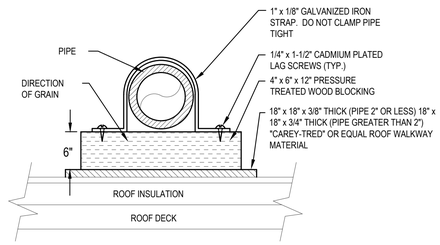
P501



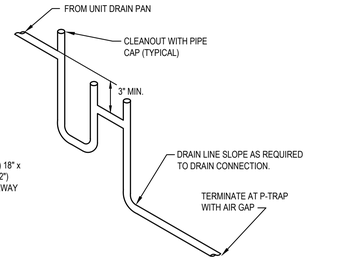
CONDENSATE DRAIN DETAIL
SCALE: NONE



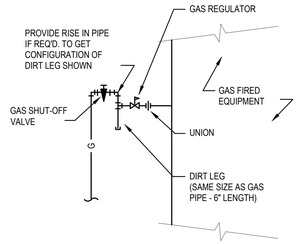
LAVATORY HOT WATER DETAIL
SCALE: NONE



ROOF PIPE SUPPORT DETAIL

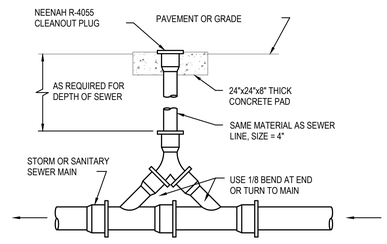


CONDENSATE DRAIN DETAIL
SCALE: NONE



GAS PRESSURE REGULATORS FOR ROOFTOP UNITS (RTU) AND MAKE-UP AIR UNITS (MAU) SHALL BE SENSUS #143-80-2, 2 PSI INLET / 7" WC OUTLET PRESSURE WITH THE ORIFICE & SPRING SIZE AS RECOMMENDED BY THE MANUFACTURER.

GAS CONNECTION DETAIL
SCALE: NONE



GRADE CLEANOUT DETAIL
SCALE: NONE

10/09/2025
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
THOMAS P. FRIEZE
NUMBER PE-2016014280

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SH ASSOCIATES
SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer or under his supervision. This drawing is the property of the Engineer and may not be used in whole or in part without the written permission of the Engineer. It is the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, and arrangements and plans indicated or represented by this drawing (where, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication of these documents without the written permission of the Designer/Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

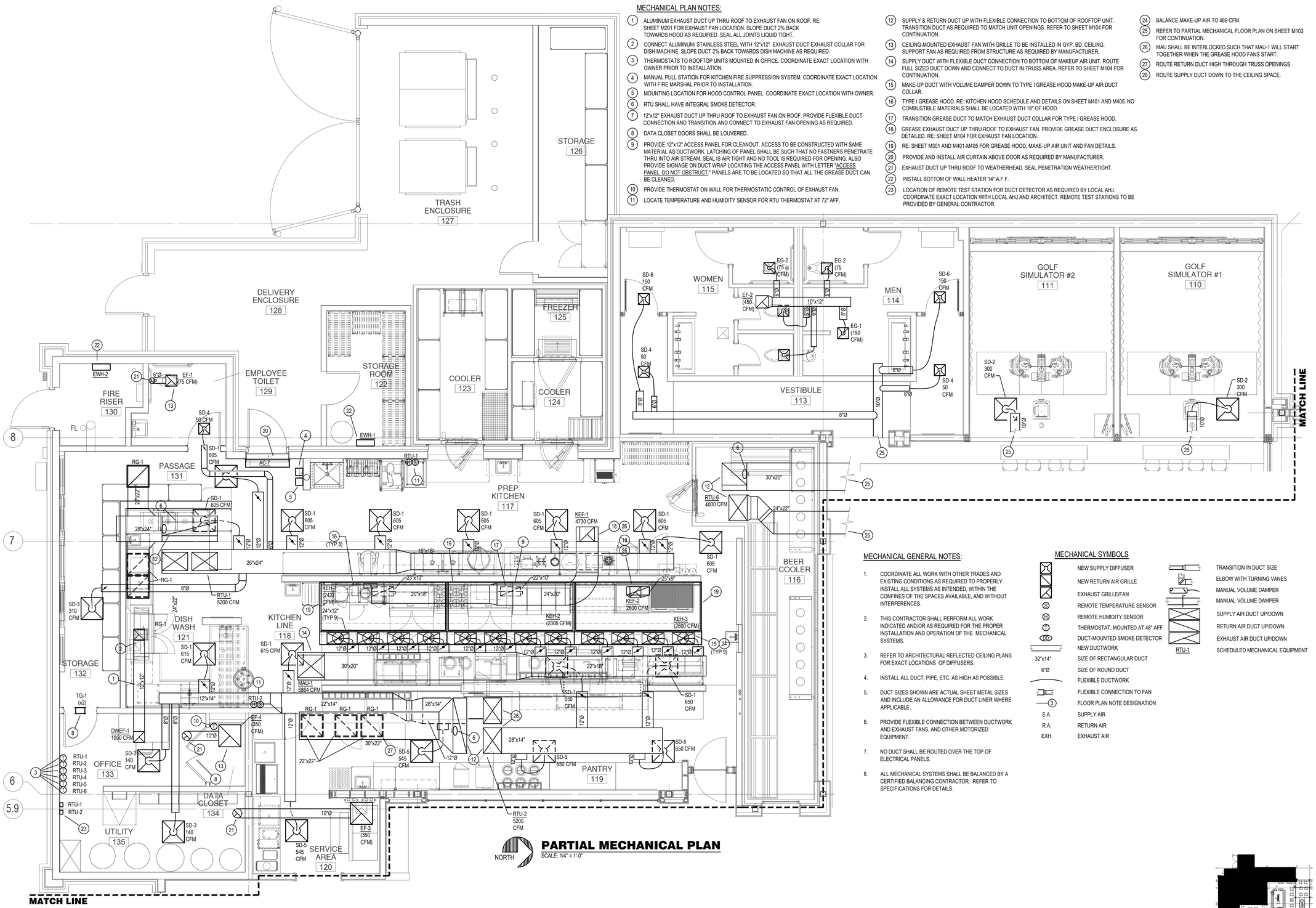
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-09-2025

SHEET 24x36

PLUMBING DETAILS

P502



PARTIAL MECHANICAL PLAN

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

MECHANICAL PLAN NOTES:

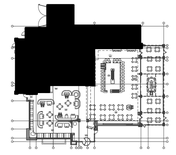
1. ALUMINUM EXHAUST DUCT UP THRU ROOF TO EXHAUST FAN ON ROOF. RE: SHEET M201 FOR EXHAUST FAN LOCATION. SLOPE DUCT 2% BACK TOWARDS HOOD AS REQUIRED. SEAL ALL JOINTS LIQUID TIGHT.
2. CONNECT ALUMINUM/ STAINLESS STEEL WITH 12"x12". EXHAUST DUCT EXHAUST COLLAR FOR DISH MACHINE. SLOPE DUCT 2% BACK TOWARDS DISH MACHINE AS REQUIRED.
3. THERMOSTATS TO ROOFTOP UNITS MOUNTED IN OFFICE. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION.
4. MANUAL PULL STATION FOR KITCHEN FIRE SUPPRESSION SYSTEM. COORDINATE EXACT LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION.
5. MOUNTING LOCATION FOR HOOD CONTROL PANEL. COORDINATE EXACT LOCATION WITH OWNER.
6. RTU SHALL HAVE INTEGRAL SMOKE DETECTOR.
7. 12"x12" EXHAUST DUCT UP THRU ROOF TO EXHAUST FAN ON ROOF. PROVIDE FLEXIBLE DUCT CONNECTION AND TRANSITION AND CONNECT TO EXHAUST FAN OPENING AS REQUIRED.
8. DATA CLOSET DOORS SHALL BE LOUVERED.
9. PROVIDE 12"x12" ACCESS PANEL FOR CLEANOUT. ACCESS TO BE CONSTRUCTED WITH SAME MATERIAL AS DUCTWORK. LATCHING OF PANEL SHALL BE SUCH THAT NO FASTNERS PENETRATE THRU INTO AIR STREAM, SEAL IS AIR TIGHT AND NO TOOL IS REQUIRED FOR OPENING. ALSO PROVIDE SIGNAGE ON DUCT WRAP LOCATING THE ACCESS PANEL WITH LETTER "ACCESS PANEL. DO NOT OBSTRUCT." PANELS ARE TO BE LOCATED SO THAT ALL THE GREASE DUCT CAN BE CLEANED.
10. PROVIDE THERMOSTAT ON WALL FOR THERMOSTATIC CONTROL OF EXHAUST FAN.
11. LOCATE TEMPERATURE AND HUMIDITY SENSOR FOR RTU THERMOSTAT AT 72" AFF.
12. SUPPLY & RETURN DUCT UP WITH FLEXIBLE CONNECTION TO BOTTOM OF ROOFTOP UNIT. TRANSITION DUCT AS REQUIRED TO MATCH UNIT OPENINGS. REFER TO SHEET M104 FOR CONTINUATION.
13. CEILING-MOUNTED EXHAUST FAN WITH GRILLE TO BE INSTALLED IN GYP. BD. CEILING. SUPPORT FAN AS REQUIRED FROM STRUCTURE AS REQUIRED BY MANUFACTURER.
14. SUPPLY DUCT WITH FLEXIBLE DUCT CONNECTION TO BOTTOM OF MAKEUP AIR UNIT. ROUTE FULL SIZED DUCT DOWN AND CONNECT TO DUCT IN TRUSS AREA. REFER TO SHEET M104 FOR CONTINUATION.
15. MAKE-UP DUCT WITH VOLUME DAMPER DOWN TO TYPE I GREASE HOOD MAKE-UP AIR DUCT COLLAR.
16. TYPE I GREASE HOOD. RE: KITCHEN HOOD SCHEDULE AND DETAILS ON SHEET M401 AND M405. NO COMBUSTIBLE MATERIALS SHALL BE LOCATED WITH 18" OF HOOD.
17. TRANSITION GREASE DUCT TO MATCH EXHAUST DUCT COLLAR FOR TYPE I GREASE HOOD.
18. GREASE EXHAUST DUCT UP THRU ROOF TO EXHAUST FAN. PROVIDE GREASE DUCT ENCLOSURE AS DETAILED. RE: SHEET M104 FOR EXHAUST FAN LOCATION.
19. RE: SHEET M301 AND M401-M405 FOR GREASE HOOD, MAKE-UP AIR UNIT AND FAN DETAILS.
20. PROVIDE AND INSTALL AIR CURTAIN ABOVE DOOR AS REQUIRED BY MANUFACTURER.
21. EXHAUST DUCT UP THRU ROOF TO WEATHERHEAD. SEAL PENETRATION WEATHERTIGHT.
22. INSTALL BOTTOM OF WALL HEATER 14" A.F.F.
23. LOCATION OF REMOTE TEST STATION FOR DUCT DETECTOR AS REQUIRED BY LOCAL AHJ. COORDINATE EXACT LOCATION WITH LOCAL AHJ AND ARCHITECT. REMOTE TEST STATIONS TO BE PROVIDED BY GENERAL CONTRACTOR.
24. BALANCE MAKE-UP AIR TO 489 CFM.
25. REFER TO PARTIAL MECHANICAL FLOOR PLAN ON SHEET M103 FOR CONTINUATION.
26. MAU SHALL BE INTERLOCKED SUCH THAT MAU-1 WILL START TOGETHER WHEN THE GREASE HOOD FANS START.
27. ROUTE RETURN DUCT HIGH THROUGH TRUSS OPENINGS.
28. ROUTE SUPPLY DUCT DOWN TO THE CEILING SPACE.

MECHANICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEMS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DIFFUSERS.
4. INSTALL ALL DUCT, PIPE, ETC. AS HIGH AS POSSIBLE.
5. DUCT SIZES SHOWN ARE ACTUAL SHEET METAL SIZES AND INCLUDE AN ALLOWANCE FOR DUCT LINER WHERE APPLICABLE.
6. PROVIDE FLEXIBLE CONNECTION BETWEEN DUCTWORK AND EXHAUST FANS, AND OTHER MOTORIZED EQUIPMENT.
7. NO DUCT SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
8. ALL MECHANICAL SYSTEMS SHALL BE BALANCED BY A CERTIFIED BALANCING CONTRACTOR. REFER TO SPECIFICATIONS FOR DETAILS.

MECHANICAL SYMBOLS

- NEW SUPPLY DIFFUSER
- NEW RETURN AIR GRILLE
- EXHAUST GRILLE/FAN
- (S) REMOTE TEMPERATURE SENSOR
- (H) REMOTE HUMIDITY SENSOR
- (T) THERMOSTAT, MOUNTED AT 48" AFF
- (SD) DUCT-MOUNTED SMOKE DETECTOR
- NEW DUCTWORK
- 32"x14" SIZE OF RECTANGULAR DUCT
- 6"Ø SIZE OF ROUND DUCT
- FLEXIBLE DUCTWORK
- FLEXIBLE CONNECTION TO FAN
- (3) FLOOR PLAN NOTE DESIGNATION
- S.A. SUPPLY AIR
- R.A. RETURN AIR
- EXH. EXHAUST AIR
- TRANSITION IN DUCT SIZE
- ELBOW WITH TURNING VANES
- MANUAL VOLUME DAMPER
- MANUAL VOLUME DAMPER
- SUPPLY AIR DUCT UP/DOWN
- RETURN AIR DUCT UP/DOWN
- EXHAUST AIR DUCT UP/DOWN
- RTU-1 SCHEDULED MECHANICAL EQUIPMENT



KEY PLAN

SCALE: NTS

10/09/2025
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SH ASSOCIATES
SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772
BC PROJECT #: 24606
MISSOURI PE COA #2009003629

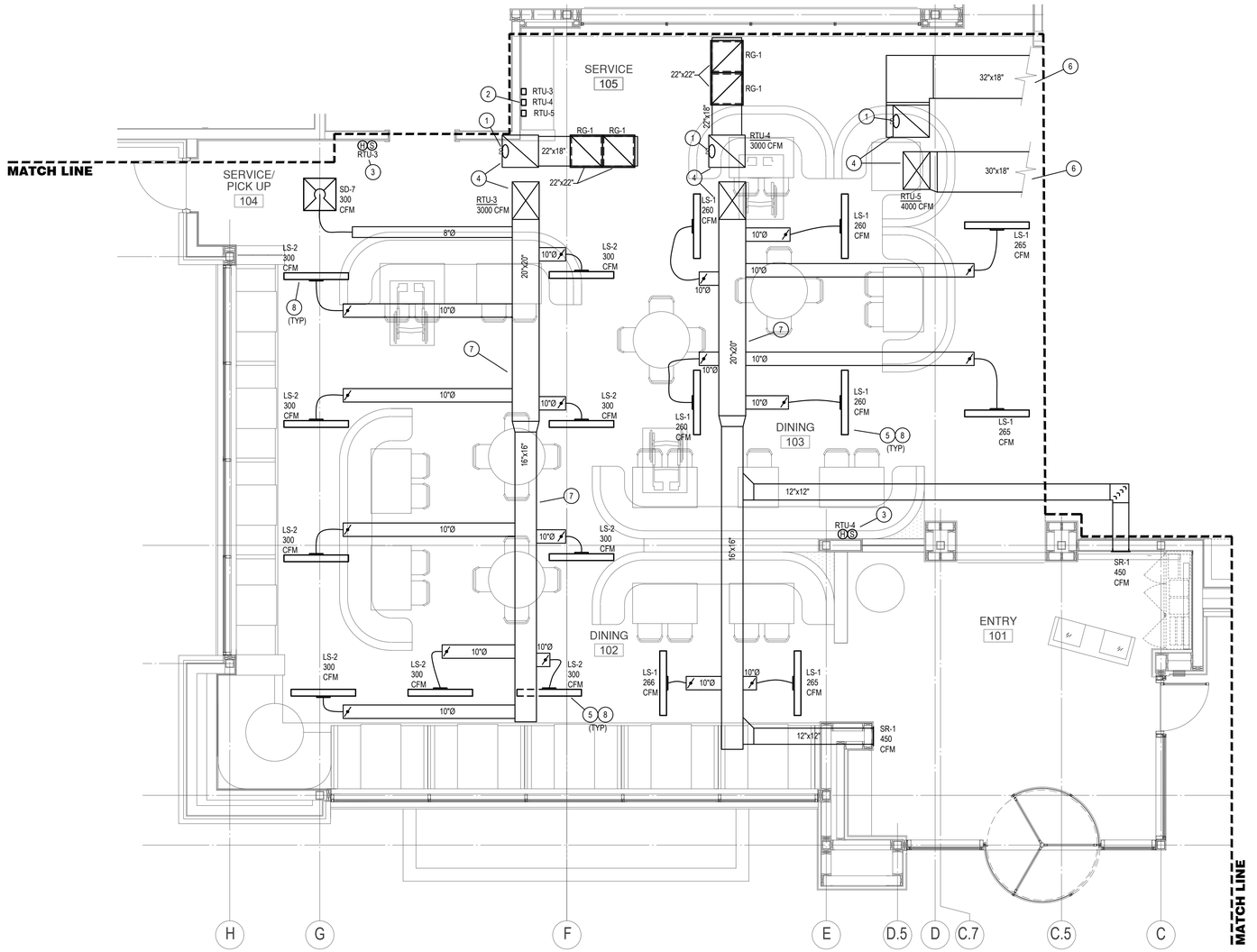
This drawing has been prepared by the Engineer, or under his supervision. This drawing is produced as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing on this drawing are the property of the Engineer and the use of any of the aforementioned herein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, in whole or part, without the written permission of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

JOB NO.	
DRAWN BY:	TPF/PH
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24X36

PARTIAL MECHANICAL PLAN

M101



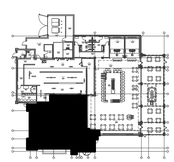
NORTH

PARTIAL MECHANICAL PLAN

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

MECHANICAL PLAN NOTES:

1. RTU TO HAVE INTEGRAL SMOKE DETECTOR.
2. LOCATION OF REMOTE TEST STATION FOR DUCT DETECTOR AS REQUIRED BY LOCAL AHJ. COORDINATE EXACT LOCATION WITH LOCAL AHJ AND ARCHITECT. REMOTE TEST STATIONS TO BE PROVIDED BY GENERAL CONTRACTOR.
3. LOCATE TEMPERATURE AND HUMIDITY SENSORS FOR RTU THERMOSTAT AT 72" AFF.
4. SUPPLY & RETURN DUCT UP WITH FLEXIBLE CONNECTION TO BOTTOM OF ROOFTOP UNIT. TRANSITION DUCT AS REQUIRED TO MATCH UNIT OPENINGS. REFER TO SHEET M104 FOR CONTINUATION.
5. CONTROL CABLE FOR RADIAL DAMPER SHALL BE ROUTED THROUGH THE DUCTWORK TO THE INSIDE OF THE LINEAR DIFFUSER. CABLE SHALL BE LOCATED SUCH THAT IT IS IN AN ACCESSIBLE LOCATION FOR FUTURE USE.
6. REFER TO PARTIAL MECHANICAL FLOOR PLAN ON SHEET M103 FOR CONTINUATION.
7. ROUTE DUCTWORK BETWEEN ROOF TRUSSES. REFER TO ARCH FOR DUCT ROUTING DETAILS.
8. INSTALL SUPPY REGISTERS AS HIGH AS POSSIBLE. COORDINATE WITH ARCHITECT.



KEY PLAN

SCALE: NTS

10/09/2025

REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer or under his supervision. This drawing is protected as an architectural work subject to the protection afforded under Section 102 of the Copyright Act of 1990, as amended, and in the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in this drawing, including but not limited to architectural design, floor plan and elevation layout, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, in whole or part, without the written permission of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.		
DRAWN BY: TPF/PH		
ISSUE		DATE
	ISSUE FOR PERMIT REVIEW	10-08-2025

SHEET 24x36

PARTIAL MECHANICAL PLAN

M102

MECHANICAL PLAN NOTES:

1. PROVIDE AND INSTALL AIR CURTAIN ABOVE DOOR AS REQUIRED BY MANUFACTURER.
2. CONTRACTOR TO SUBMIT SKETCH OF EXACT DUCT ROUTING COORDINATING DUCT LAYOUT TO BE ROUTED BETWEEN WOOD TRUSSES.
3. LOCATE TEMPERATURE AND HUMIDITY SENSORS FOR RTU THERMOSTAT AT 72" AFF.
4. REFER TO PARTIAL MECHANICAL FLOOR PLAN ON SHEET M101 FOR CONTINUATION.
5. REFER TO PARTIAL MECHANICAL FLOOR PLAN ON SHEET M102 FOR CONTINUATION.
6. ROUTE DUCTWORK BETWEEN ROOF TRUSSES. REFER TO ARCH FOR DUCT ROUTING DETAILS.
7. ROUTE DUCTWORK THROUGH ROOF TRUSSES. REFER TO ARCH FOR DUCT ROUTING DETAILS.
8. MOUNT RETURN GRILLE IN FACE OF SOFFIT.
9. ROUTE DUCTWORK UP INTO SOFFIT.
10. LOCATION OF REMOTE TEST STATION FOR DUCT DETECTOR AS REQUIRED BY LOCAL AHJ. COORDINATE EXACT LOCATION WITH LOCAL AHJ AND ARCHITECT. REMOTE TEST STATIONS TO BE PROVIDED BY GENERAL CONTRACTOR.
11. MOUNT CO SENSOR GS-1 AT 4'-6" AFF.
12. CONTROL CABLE FOR RADIAL DAMPER SHALL BE ROUTED THROUGH THE DUCTWORK TO THE INSIDE OF THE LINEAR DIFFUSER. CABLE SHALL BE LOCATED SUCH THAT IT IS IN AN ACCESSIBLE LOCATION FOR FUTURE USE.

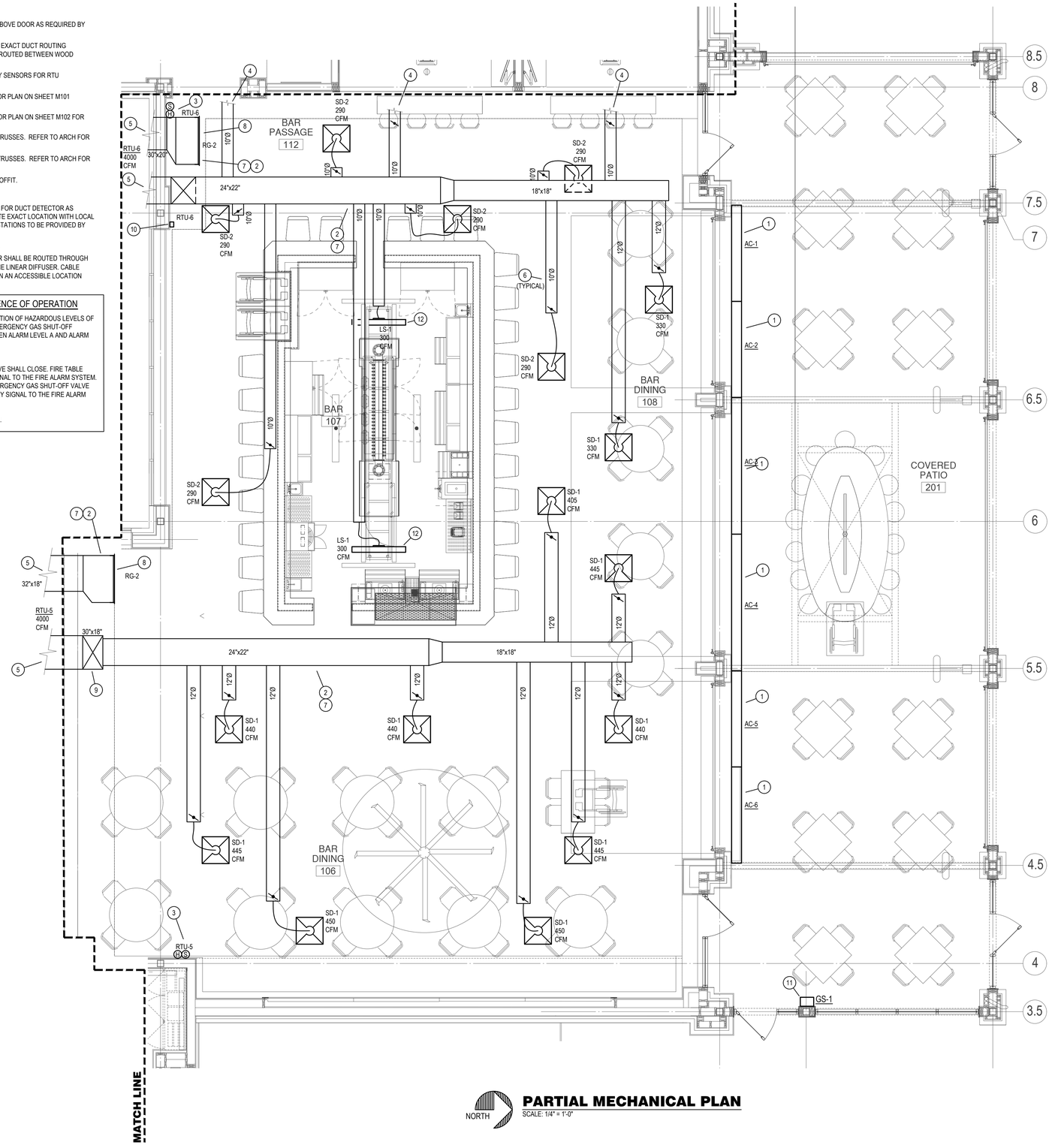
PATIO VENTILATION & GAS DETECTION SYSTEM SEQUENCE OF OPERATION

THE GAS SENSORS SHALL BE ASSOCIATED WITH THE FIRE TABLE. UPON DETECTION OF HAZARDOUS LEVELS OF CARBON MONOXIDE (CO), THE CO GAS SENSING SYSTEM SHALL CLOSE THE EMERGENCY GAS SHUT-OFF SOLENOID AND ALARM SHALL SOUND. A 5 MINUTE DELAY SHALL BE SET BETWEEN ALARM LEVEL A AND ALARM LEVEL B.

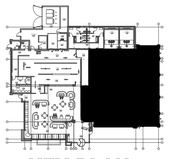
GAS DETECTION SYSTEM SETPOINTS:

1. ALARM LEVEL A, 35 PPM CO - EMERGENCY GAS SHUT-OFF SOLENOID VALVE SHALL CLOSE. FIRE TABLE SHALL SHUT DOWN. ACTIVATE HORN STROBE AND SEND SUPERVIORY SIGNAL TO THE FIRE ALARM SYSTEM.
2. ALARM LEVEL B, 100 PPM CO - FIRE TABLE REMAINS SHUT DOWN AND EMERGENCY GAS SHUT-OFF VALVE SHALL REMAIN CLOSED. ACTIVATE HORN STROBE AND SEND SUPERVISORY SIGNAL TO THE FIRE ALARM SYSTEM.

THERE SHALL BE A 5 MIN DELAY BETWEEN LEVEL A ALARM AND LEVEL B ALARM.



PARTIAL MECHANICAL PLAN
SCALE: 1/4" = 1'-0"



KEY PLAN
SCALE: NTS

10/09/2025
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SH ASSOCIATES
SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer or under his supervision. This drawing is produced as an instrument of service and is the property of the Engineer and shall not be used in whole or in part in violation of the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in these documents, whether in printed or electronic format, and including the forms, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication without the express written permission of the Designer/Engineer is strictly prohibited. © 2003 BC Engineers, Inc.

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

PARTIAL MECHANICAL PLAN

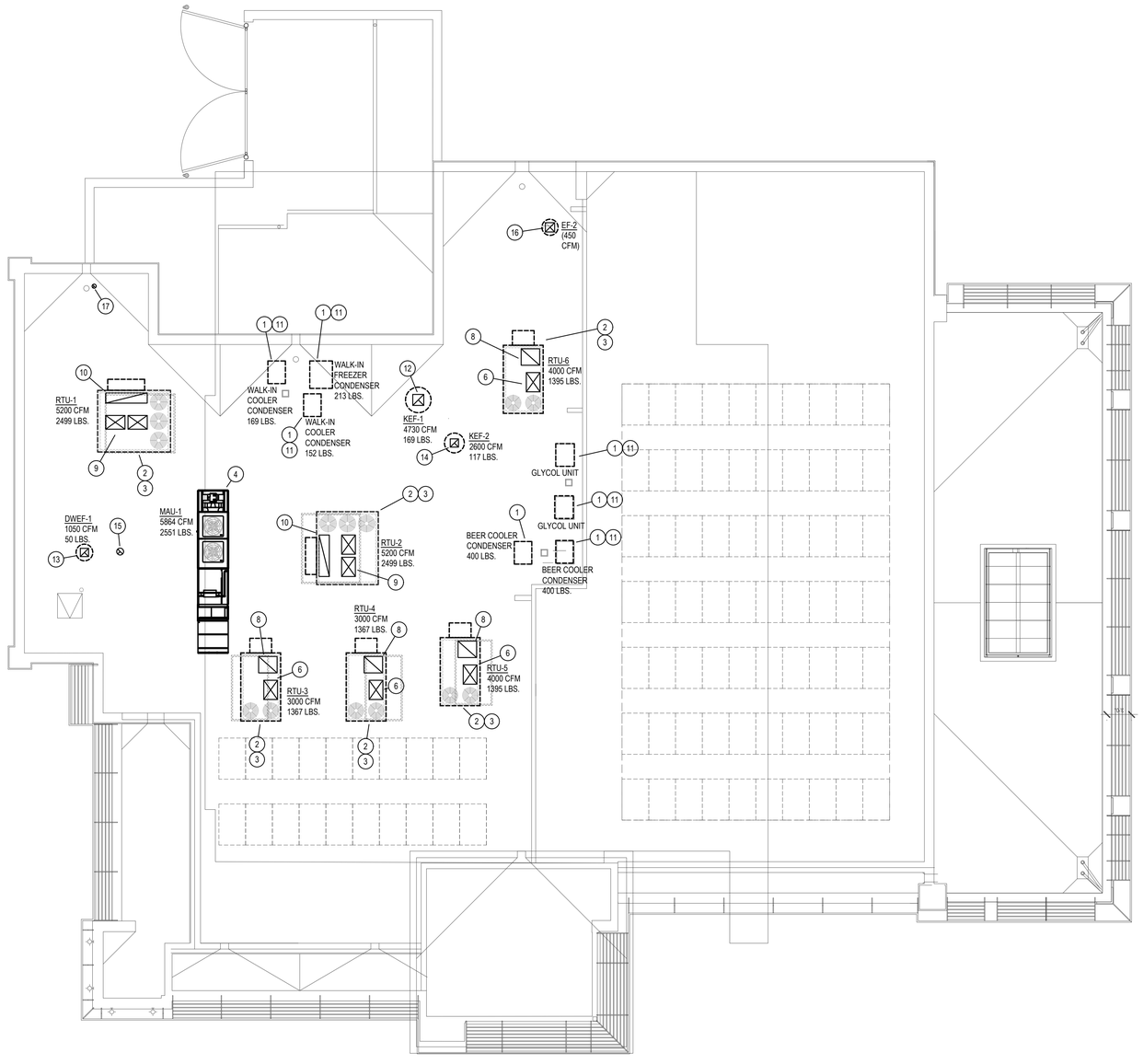
M103

INSTALLATION NOTES

1. CONTRACTOR SHALL MAINTAIN AND MEET A MINIMUM OF 10'-0" CLEARANCE BETWEEN ALL OUTDOOR AIR INTAKES & EXHAUST/ FLUES.
2. REFER TO ARCHITECTURAL ROOF PLAN (A104) FOR COORDINATION, DIMENSIONS, AND EXACT LOCATIONS OF ROOFTOP EQUIPMENT.

MECHANICAL PLAN NOTES:

1. ALL REFRIGERATION EQUIPMENT COILS TO BE POSITIONED SUCH THAT COILS ARE FACING AWAY FROM GREASE EXHAUST FANS.
2. GENERAL CONTRACTOR TO PROVIDE WALL-MOUNTED TEST/RESET PANELS FOR DUCT DETECTORS. THE DUCT DETECTORS SHALL NOT BE SUPERVISED BY THE FIRE ALARM CONTROL PANEL. REFER TO NOTE 10 ON SHEET M101 AND NOTE 24 ON SHEET M102 FOR INSTALLATION LOCATIONS.
3. SMOKE DETECTOR TO BE LOCATED IN RTU BY MANUFACTURER.
4. 28"X24" MAKE UP AIR DUCT DOWN THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION.
5. 28"X20" SUPPLY AIR DUCT DOWN THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION.
6. 28"X20" SUPPLY AIR DUCT DOWN THROUGH ROOF. SEE SHEET M102 FOR CONTINUATION.
7. 27"X24" RETURN AIR DUCT DOWN THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION.
8. 27"X24" RETURN AIR DUCT DOWN THROUGH ROOF. SEE SHEET M102 FOR CONTINUATION.
9. TWO (2) 28"X20" SUPPLY AIR DUCT DOWN THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION.
10. 60"X15" RETURN AIR DUCT DOWN THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION.
11. CONNECT REFRIGERATION PIPING TO EVAP. PER MANUFACTURER'S REQUIREMENTS.
12. 16"X16" GREASE EXHAUST DUCT DOWN THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION.
13. 12"X12"ALUMINUM EXHAUST DUCT DOWN THROUGH ROOF. SEE SHEET M102 FOR CONTINUATION.
14. 12"X12" GREASE EXHAUST DUCT DOWN THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION.
15. 10" EXHAUST DUCT UP THRU ROOF TO WEATHERHEAD AS REQUIRED. SEAL PENETRATION WEATHERTIGHT. REFER TO SHEET M101 FOR CONTINUATION.
16. 13"X13" EXHAUST DUCT DOWN THROUGH ROOF. SEE SHEET M101 FOR CONTINUATION.
17. 6" EXHAUST DUCT UP THRU ROOF TO WEATHERHEAD AS REQUIRED. SEAL PENETRATION WEATHERTIGHT. REFER TO SHEET M101 FOR CONTINUATION.



NORTH

MECHANICAL ROOF PLAN

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

10/09/2025

STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

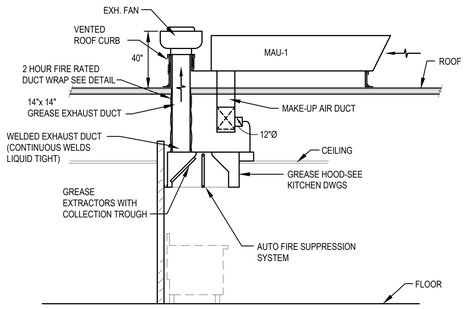
This drawing has been prepared by the Engineer or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. Pursuant to the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, including but not limited to architectural designs, floor plans, and elevations bearing the Engineer's name, constitute the original, copyrighted work of the Designed Engineer. Any reproduction, use or publication by any method, in whole or in part, without the prior written consent of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

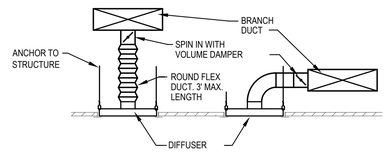
MECHANICAL ROOF PLAN

M201



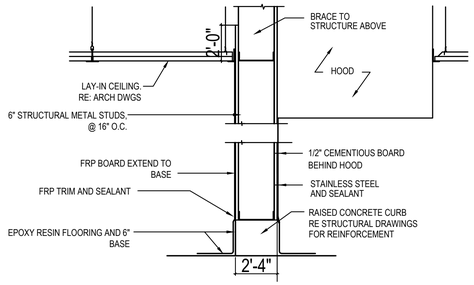
GREASE HOOD DETAIL

SCALE: NONE



DIFFUSER DETAIL

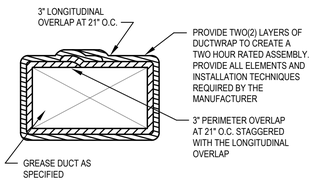
SCALE: NONE



PROVIDE CEMENTIOUS BOARD BEHIND KITCHEN HOOD & 18" ALL SIDES OF HOOD) METAL STUDS ARE TO BE USED AT WALL WHERE HOODS ARE INSTALLED.

HOOD WALL MATERIAL DETAIL

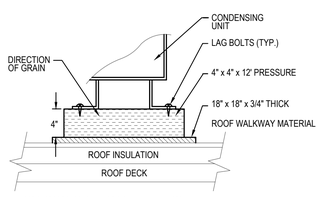
SCALE: NONE



DUCTWRAP - 3M FIRE BARRIER 15A OR EQUAL. GREASE DUCT FIRE PROTECTION SYSTEM, UL-1978 AND ASTM E 2336 APPROVED, 0 CLEARANCE TO COMBUSTIBLES.

GREASE DUCT ENCLOSURE DETAIL

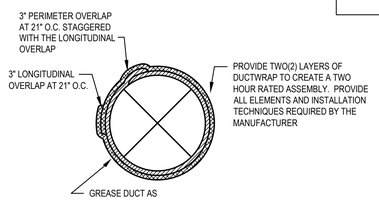
SCALE: NONE



SET SUPPORT BLOCKS IN MASTIC ON WALKWAY MATERIAL.

CONDENSING UNIT SUPPORT DETAIL

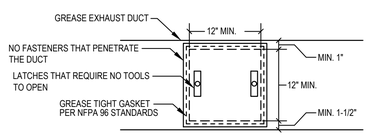
SCALE: NONE



DUCTWRAP - 3M FIRE BARRIER 615+ OR EQUAL. GREASE DUCT FIRE PROTECTION SYSTEM, UL-1978 AND ASTM E 2336 APPROVED, 0 CLEARANCE TO COMBUSTIBLES.

GREASE DUCT ENCLOSURE DETAIL

SCALE: NONE



CLEANOUT OPENINGS SHALL BE EQUIPPED WITH TIGHT FITTING DOORS CONSTRUCTED OF STEEL HAVING A THICKNESS NOT LESS THAN THAT REQUIRED FOR THE DUCT. LISTED AND LABELED ACCESS DOOR ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH THE TERMS OF THE LISTING.

GREASE DUCT CLEANOUT DETAIL

SCALE: NONE

ELECTRIC WALL HEATER SCHEDULE

MARK	MFGR	MODEL NO.	BTUH	ELECTRICAL		REMARKS
				VOLT/Ø/HZ	WATTS	
EWH-1	RAYWALL	AFA110D	3413	120/1/60	1 KW	-
EWH-2	RAYWALL	AFA110D	3413	120/1/60	1 KW	-

NOTES:
1. UNITS SHALL BE SURFACE MOUNTED.
2. PROVIDE INTEGRAL DISCONNECT & INTEGRAL THERMOSTAT FOR EACH UNIT.

LINEAR DIFFUSER SCHEDULE

MARK	MFGR	MODEL	# SLOTS	SLOT WIDTH	LENGTH	FINISH	INLET	REMARKS
LS-1	TITUS	TBDI-80	3	1"	48"	"	10"	1,2,3
LS-2	TITUS	TBDI-80	3	1-1/2"	48"	"	10"	1,2,3

NOTES:
1. PROVIDE WITH INSULATED PLENUM FOR CONNECTION OF DUCTS.
2. VERIFY COLOR REQUIREMENTS WITH ARCHITECT OR IF DIFFUSERS ARE TO BE FIELD PAINTED.
3. PROVIDE MAT ROTO-TWIST RT-150 SERIES III CABLE OPERATED DAMPER.

OUTDOOR AIR CALCULATIONS

UNIT	Area (sqft)	OCCUPANCY CLASSIFICATION	Occupant Density #/1000 sqft	People outdoor airflow rate in breathing zone, (Rp) cfm/person	Area outdoor airflow rate in breathing zone, (Ra) cfm/sqft	Exhaust airflow rate cfm/sqft	Breathing zone outdoor airflow (Vbz)	Zone air distribution effectiveness (Ez)	Zone outdoor airflow (cfm)
RTU-1, RTU-2 AND MAU-1	1287	Kitchens (cooking)	20	7.5	0.12	0.7	347	0.8	434
	89	Office spaces	5	5	0.06		8	0.8	9
	717	Corridors	0	0	0.06		43	0.8	54
	57	Toilet rooms public	0	0	0	5/70	0	0.8	0
	594	Storage rooms	0	0	0.12		71	0.8	89
								Total	587
RTU-3 AND RTU-4	1293	Dining rooms	70	7.5	0.18		912	0.8	1139
	343	Main entry lobbies	10	5	0.06		38	0.8	47
	814	Corridors	0	0	0.06		49	0.8	61
								Total	1248
RTU-5 and RTU-6	634	Bars, cocktail lounges	100	7.5	0.18		590	0.8	737
	1091	Dining rooms	70	7.5	0.18		769	0.8	961
	1207	Corridors	0	0	0.06		72	0.8	91
	546	Toilet rooms public	0	0	0	5/70	0	0.8	0
	497	Game arcades	20	7.5	0.18		164	0.8	205
								Total	1994

ROOFTOP UNIT SCHEDULE

MARK	MFGR.	MODEL NO.	NOM. TONS	EVAP. CFM	EXT. STATIC P. IN. WG. (NOTE 2)	COOLING				HOT GAS REHEAT	HEATING (GAS)			ELECTRICAL				UNIT CONTROLS	BLOWER DRIVE TYPE	ECONOMIZER + BAROMETRIC RELIEF		MINIMUM OUTDOOR AIR (CFM)	SEER /EER	TOTAL WEIGHT (LBS)	NOTES
						COOLING STAGES	TOTAL BTUH	SENS. BTUH	AMB.	EVAP. EAT DB/WB		BTUH INPUT	BTUH OUTPUT	HEATING STAGES	VOLT/Ø/HZ	BLOWER MOTOR	POWER EXHAUST	MCA (AMPS)	MOCP (AMPS)			TYPE	CONTROLLER				
RTU-1	LENNOX	LGT156H5M	13	5,200	1.10	3	144,000	110,880	105	80/67	YES	260,000	211,000	4	208/3/60	3 HP	NO	66	80	DIGITAL	CAV	HIGH PERFORMANCE	ENTHALPY	350	- /12.0	2,499	1,2,3,4,5,6,7,8,9
RTU-2	LENNOX	LGT156H5M	13	5,200	1.10	3	144,000	110,880	105	80/67	YES	260,000	211,000	4	208/3/60	3 HP	NO	66	80	DIGITAL	CAV	HIGH PERFORMANCE	ENTHALPY	350	- /12.0	2,499	1,2,3,4,5,6,7,8,9
RTU-3	LENNOX	LGT092H5E	7.5	3,000	1.15	3	88,100	64,313	105	80/67	YES	180,000	146,000	2	208/3/60	3.75 HP	NO	40	50	DIGITAL	CAV	HIGH PERFORMANCE	ENTHALPY	625	- /12.3	1,367	1,2,3,4,5,6,7,8,9
RTU-4	LENNOX	LGT092H5E	7.5	3,000	1.18	3	88,100	64,313	105	80/67	YES	180,000	146,000	2	208/3/60	3.75 HP	NO	40	50	DIGITAL	CAV	HIGH PERFORMANCE	ENTHALPY	625	- /12.3	1,367	1,2,3,4,5,6,7,8,9
RTU-5	LENNOX	LGT120H5E	10	4,000	0.75	3	117,300	86,802	105	80/67	YES	240,000	194,000	2	208/3/60	3.75 HP	NO	48	60	DIGITAL	CAV	HIGH PERFORMANCE	ENTHALPY	1,000	- /12.1	1,395	1,2,3,4,5,6,7,8,9
RTU-6	LENNOX	LGT120H5E	10	4,000	0.75	3	117,300	86,802	105	80/67	YES	240,000	194,000	2	208/3/60	3.75 HP	NO	48	60	DIGITAL	CAV	HIGH PERFORMANCE	ENTHALPY	1,000	- /12.1	1,395	1,2,3,4,5,6,7,8,9

NOTES:
1. PROVIDE HINGED ACCESS DOORS, INTEGRAL RETURN AIR SMOKE DETECTORS, SCROLL COMPRESSORS WITH CRANKCASE HEATER, HIGH PRESSURE SWITCHES, FREEZESTAT, HAIL GUARDS. STANDARD COOLING DOWN TO 30°F. OUTDOOR AIR DAMPER TO FULLY CLOSE W/ FAN SHUTDOWN FOR ALL UNITS.
2. EXTERNAL STATIC PRESSURE LISTED REPRESENTS STATIC PRESSURE REQUIRED FOR DUCTWORK AND DIFFUSERS OUTSIDE THE HVAC UNIT COMPLETELY INDEPENDENT OF ANY PRESSURE DROP THROUGH THE HVAC EQUIPMENT INCLUDING BUT NOT LIMITED TO FILTERS, COILS AND ECONOMIZERS. THE FAN AND MOTOR SHALL BE SIZED APPROPRIATELY TO MEET THIS DEFINITION OF EXTERNAL STATIC PRESSURE.
3. PROVIDE COMMERCIAL 7-DAY PROGRAMMABLE HEAT/COOL/AUTO CHANGEOVER TOUCHSCREEN THERMOSTAT WITH OPTIMUM START CONTROLS, ECONOMIZER OUTPUT FAULT DETECTION INPUT, AND BUILT IN HUMIDITY SENSOR FOR EACH UNIT. ECONOMIZER/OUTDOOR AIR DAMPER IS TO CLOSE DURING UNOCCUPIED HOURS.
4. PROVIDE 18" HIGH (AT LOWEST POINT) PRE-FABRICATED INSULATED ROOF CURB WITH SLOPE TO MATCH SLOPE OF ROOF FOR EACH UNIT.
5. PROVIDE NEW 2" MERV 8 FILTERS UPON COMPLETION OF CONSTRUCTION.
6. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCP'S OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR.
7. UNIT WEIGHT INCLUDES WEIGHT FOR ROOF CURB.
8. REFRIGERATION DETECTION SYSTEM (RDS)
   FUNCTION: REFRIGERANT DETECTION SYSTEM (RDS) IS INSTALLED IN THIS EQUIPMENT TO DETECT ANY A2L LEAKAGE IN THE COIL AND TAKE ACTION TO MITIGATE ANY RISK OF IGNITION/FIRE.

   OPERATION: WHEN THERE IS A LEAK DETECTED, THE RDS SHALL SEND SIGNALS FOR THE UNIT TO MITIGATE LEAK AS REQUIRED BY MANUFACTURER TO :
   A. TURN OFF THE THERMAL STATS.
   B. TURN ON THE BLOWER FOR AIR CIRCULATION.
   C. SWITCH OFF HEATER.
9. 54TH BAR & GRILLE HAS A NATIONAL HVAC AGREEMENT WITH LENNOX NATIONAL ACCOUNTS. THE HVAC EQUIPMENT SHALL BE PURCHASED BY 54TH OR KRM, DIRECTLY FROM LENNOX NATIONAL ACCOUNTS - NO EXCEPTIONS. THE HVAC MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND ACCEPTING THE EQUIPMENT, VERIFYING PROPER QUANTITIES, PROVIDING TEMPORARY STORAGE, LABOR, 1ST YEAR LABOR WARRANTY. FOR PRICE QUOTES, PROJECT SUBMITTALS, AND QUESTIONS REGARDING TECHNICAL SPECIFICATIONS CONTACT LENNOX NATIONAL ACCOUNTS, PLEASE CONTACT Scott Taylor 913-905-2957 scott.taylor@lennoxind.com

AIR BALANCE SCHEDULE

SUPPLY AIR UNIT	OUTSIDE AIRFLOW (CFM)	RETURN AIRFLOW (CFM)	SUPPLY AIRFLOW (CFM)	OA/SA %	EXHAUST AIR UNIT	EXHAUST AIRFLOW (CFM)	REMARKS
RTU-1	350	4,850	5,200	7.8%	KEF-1	4,730	
RTU-2	350	4,850	5,200	7.8%	KEF-2	2,600	
RTU-3	625	2,375	3,000	20.8%	DWEF-3	1,050	
RTU-4	625	2,375	3,000	20.8%	EF-1 (EMPLOYEE RESTROOM)	75	
RTU-5	1,000	3,000	4,000	25.0%	EF-2 (MEN'S/WOMEN'S RESTROOM)	450	
RTU-6	1,000	3,000	4,000	25.0%	EF-3 (ICE MACHINE)	350	
MUA-1	5,864	0	5,864	100.0%	EF-4 (DATA CLOSET)	350	
TOTAL	9,814	20,450	30,264	32.4%	TOTAL	9,605	
					RESULTING BUILDING PRESSURIZATION	209	CFM

AIR CURTAIN

MARK	MFGR	MODEL NO.	LENGTH	CFM	ELECTRICAL		COLOR	NOTES
					VOLT/Ø/HZ	AMP		
AC-1	MARS	LPV84-2U-0B	84"	2,100	120/1/60	4.8	BLACK	1
AC-2	MARS	LPV284-2U-0B	84"	2,100	120/1/60	4.8	BLACK	1
AC-3	MARS	LPV2120-1U-0B	120"	3,000	120/1/60	5.2	BLACK	1
AC-4	MARS	LPV2120-1U-0B	120"	3,000	120/1/60	5.2	BLACK	1
AC-5	MARS	LPV84-2U-0B	84"	2,100	120/1/60	4.8	BLACK	1
AC-6	MARS	LPV284-2U-0B	84"	2,100	120/1/60	4.8	BLACK	1
AC-7	MARS	LPV248-2U-0B	48"	2,100	120/1/60	2.4	BLACK	1

NOTES:
1. PROVIDE EACH UNIT WITH WALL MOUNT BRACKET & MAGNETIC DOOR SWITCH CONTROL.

HAZARDOUS GAS SENSING SYSTEM SCHEDULE

GS-1 ACME UNISET MODEL CO-UNR3-120 CARBON MONOXIDE GAS DETECTION AND CONTROL UNIT, 3 LEVEL ON-OFF OPERATION, INCLUDES ALARM BUZZER, INTEGRAL SENSOR.

FEATURES INCLUDE:
- FULLY ELECTRONIC SYSTEM WITH SENSOR.
- THREE (3) SPDT RELAY OUTPUTS, 20% LEL, 40% LEL, ALARM.
- USER SELECTABLE TIME DELAY ON HIGH LEVEL ALARM.
- VISUAL "POWER ON", "RELAY STATUS", AND "TROUBLE" INDICATOR.
- 120VAC INPUT POWER.

EXHAUST FAN SCHEDULE

MARK	MFGR	MODEL	CFM	EXTERNAL STATIC P. IN. WG.	RPM	ELECTRICAL		FAN TYPE	CONTROLS	NOTES
						VOLT/Ø/HZ	PWR			
EF-1	COOK	GC-128	75	0.1	750	120/1/60	29 W	CEILING EXH.	LIGHT SWITCH	1
EF-2	COOK	101C15D	450	0.3	1141	120/1/60	0.125HP	ROOF EXH.	TIME CLOCK	2
EF-3	COOK	GC-622	350	0.25	1136	120/1/60	0.875HP	CEILING EXH.	CONTINUOUS	1
EF-4	COOK	GC-622	350	0.25	1136	120/1/60	0.875HP	CEILING EXH.	THERMOSTAT	1
KEF-1	ACCUREX	XCUE-200HP-A	4,730	1.75	1725	208/3/60	5.0 HP	GREASE EXH.	-	4
KEF-2	ACCUREX	XCUE-160-A	2,600	1.5	1725	208/3/60	2.0 HP	GREASE EXH.	-	4
DWEF-3	ACCUREX	XRED-100-A	1,050	0.600	1725	120/1/60	1/3 HP	ROOF EXH.	-	4

NOTES:
1. PROVIDE CEILING GRILLE, INTEGRAL BACK DRAFT DAMPER, VARI-SPEED CONTROLLER (NEAR FAN AND ABOVE CEILING), FACTORY MEANS OF DISCONNECT AND WEATHER HEAD.
2. PROVIDE INSULATED 18" HIGH (AT LOWEST POINT) PREFABRICATED ROOF CURB, DISCONNECT SWITCH, BACKDRAFT DAMPER, BIRD SCREEN, UNIT MOUNTED VARIABLE SPEED CONTROLLER.
3. PROVIDE LINE VOLTAGE COOLING ONLY THERMOSTAT FOR CONTROL OF FAN. SET TO 80°F.
4. GREASE EXHAUST FANS (KEF-1 AND KEF-2) & DISHWASHER EXHAUST FAN (KEF-3) ARE PROVIDE BY THE KITCHEN EQUIPMENT SUPPLIER AND INSTALLED BY THIS CONTRACTOR. REFER TO M303 & M304.

DIFFUSER SCHEDULE

MARK	MFGR	MODEL	BORDER TYPE	NECK SIZE	FACE SIZE	FINISH	DAMPER	ACCESSORIES	NOTES
SD-1	TITUS	TMS	3	12"Ø	24"x24"	WHITE	-	-	1
SD-2	TITUS	TMS	3	10"Ø	24"x24"	WHITE	-	-	1
SD-3	TITUS	TMS	3	8"Ø	24"x24"	WHITE	D-75	GYP. FRAME	1
SD-4	TITUS	TMS	3	6"Ø	12"x12"	WHITE	D-75	GYP. FRAME	1
SD-5	TITUS	TMS	3	12"Ø	24"x24"	WHITE	D-75	GYP. FRAME	1
SD-6	TITUS	TMS	3	8"Ø	12"x12"	WHITE	D-75	GYP. FRAME	1
SD-7	TITUS	TMS	3	10"Ø	12"x12"	WHITE	D-75	GYP. FRAME	1
SR-1	TITUS	300RS	-	12"x10"	-	WHITE	OPPOSED BLADE	-	1
RG-1	TITUS	PAR	3	22"x22"	24"x24"	WHITE	-	-	1
RG-2	TITUS	350RL	-	46"X22"	-	WHITE	-	GYP. FRAME	1
EG-1	TITUS	PAR	3	8"Ø	12"x12"	WHITE	OPPOSED BLADE	-	1
EG-2	TITUS	PAR	3	6"Ø	12"x12"	WHITE	OPPOSED BLADE	-	1
TG-1	TITUS	355ZFL	-	10"x10"	-	WHITE	-	-	1

NOTES:
1. VERIFY COLOR REQUIREMENTS WITH ARCHITECT OR IF DIFFUSERS ARE TO BE FIELD PAINTED.

10/09/2025
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Work Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in these documents, including but not limited to the architectural work embodied therein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, electronic or mechanical, without the prior written consent of the Engineer is strictly prohibited. © 2005 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.
DRAWN BY: TPF/PH

ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

MECHANICAL DETAILS AND SCHEDULES

M301

HOOD INFORMATION

HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	EXHAUST					SUPPLY		HANGING WEIGHT LBS.	SECTION LOCATION
			LENGTH	WIDTH	HEIGHT			TOTAL CFM	COLLAR(S)				MUA CFM	AC CFM		
									WIDTH	LENGTH	DIA.	CFM	S.P.			
1	KEH-1	XBEW-138.67-S	138.67	54	24	430 SS WHERE EXPOSED	HEAVY	2427	10	23		2427	0.394	1955		405	LEFT
2	KEH-1	XBEW-138.67-S	138.67	54	24	430 SS WHERE EXPOSED	HEAVY	2305	10	22		2305	0.379	1955		405	MIDDLE
3	KEH-1	XBEW-138.67-S	138.67	54	24	430 SS WHERE EXPOSED	HEAVY	2600	9	25		2600	0.467	1955		405	RIGHT

HOOD INFORMATION

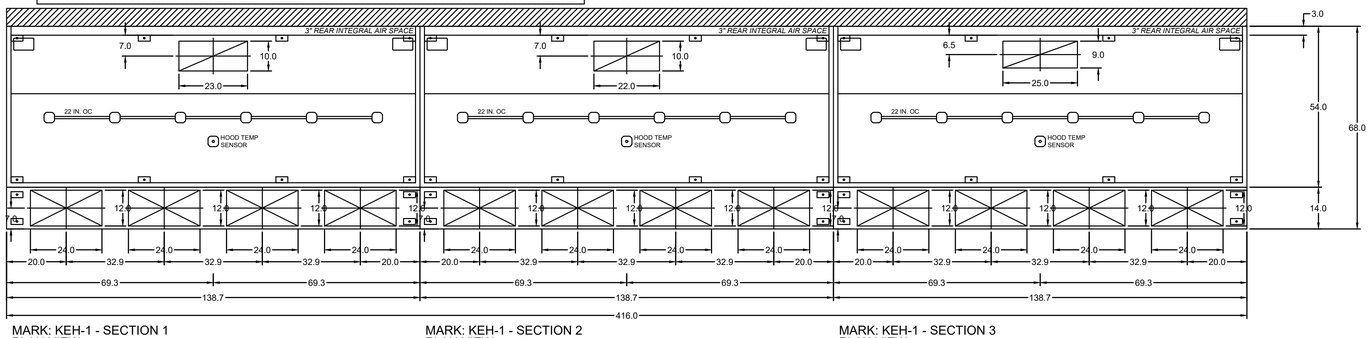
HOOD NO.	MARK	LIGHTING DETAILS			GREASE FILTRATION DETAILS				UTILITY CABINET(S)				
		FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL MATERIAL	QTY	SIZE (IN.)		LOCATION	FIRE SYSTEM		CONTROLS	
							L	H		TYPE	SIZE	MODEL	INTERFACE
1	KEH-1	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	6	49.77	BAFFLE STAINLESS STEEL	6	16	20					
						2	20						
2	KEH-1	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	6	49.77	BAFFLE STAINLESS STEEL	6	16	20					
						2	20						
3	KEH-1	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	6	49.77	BAFFLE STAINLESS STEEL	6	16	20					
						2	20						

SUPPLY PLENUM INFORMATION

HOOD NO.	MARK	POS.	TYPE	SIZE (IN.)			INSULATED	DAMPER(S)	LED LIGHT(S)		TOTAL CFM	TOTAL S.P.	COLLARS							
				L	W	H			SUPPLIED	QTY			TYPE	MOUNTING	QTY	W	L	DIA.	CFM	VEL.
1	KEH-1	FRONT	ASP	138.67	14	4	NO	YES	NO		1955	0.01	MUA	FACTORY	4	12	24		489	245
2	KEH-1	FRONT	ASP	138.67	14	4	NO	YES	NO		1955	0.01	MUA	FACTORY	4	12	24		489	245
3	KEH-1	FRONT	ASP	138.67	14	4	NO	YES	NO		1955	0.01	MUA	FACTORY	4	12	24		489	245

HOOD OPTIONS

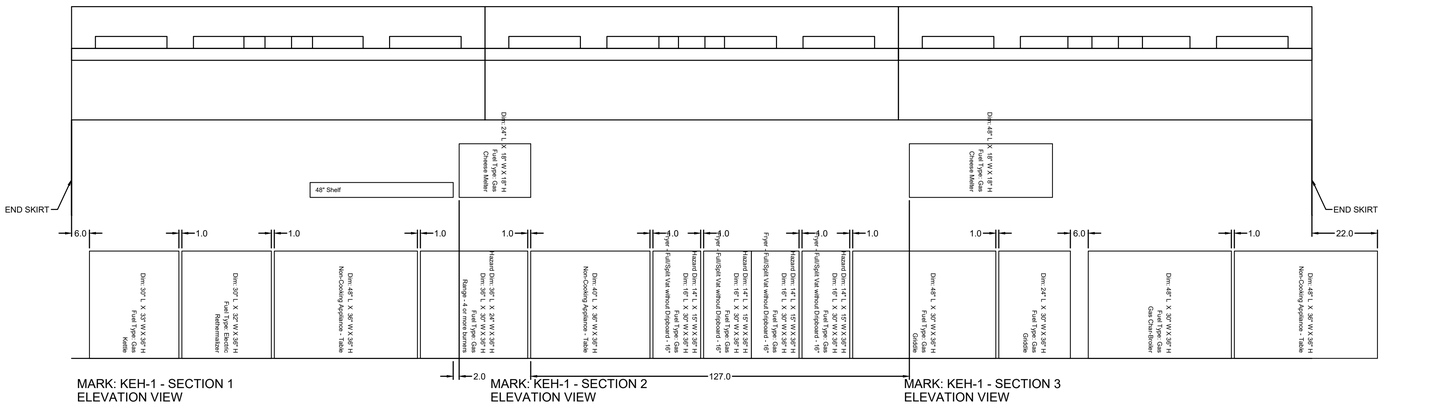
- UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625
- BACK INTEGRAL AIR SPACE - 3 IN WIDE
- CONTINUOUS CAPTURE
- FACTORY MOUNTED EXHAUST COLLAR(S)
- LEFT MINI END SKIRT - 30.00 IN HIGH 30.00 IN TOP WIDTH 4.0 IN BOTTOM WIDTH
- RIGHT MINI END SKIRT - 30.00 IN HIGH 30.00 IN TOP WIDTH 4.0 IN BOTTOM WIDTH
- PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
- STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH



MARK: KEH-1 - SECTION 1 PLAN VIEW

MARK: KEH-1 - SECTION 2 PLAN VIEW

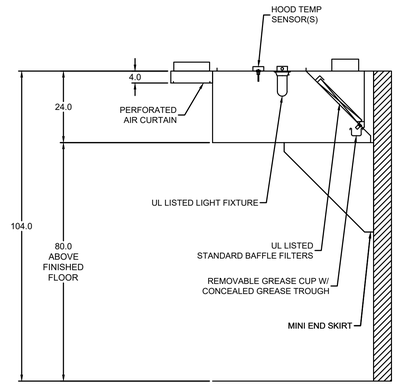
MARK: KEH-1 - SECTION 3 PLAN VIEW



MARK: KEH-1 - SECTION 1 ELEVATION VIEW

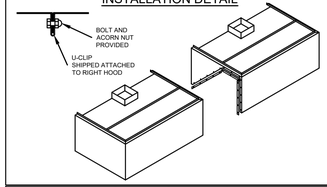
MARK: KEH-1 - SECTION 2 ELEVATION VIEW

MARK: KEH-1 - SECTION 3 ELEVATION VIEW

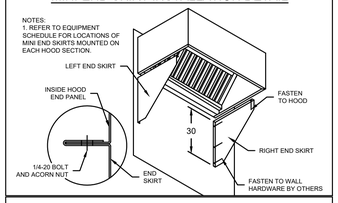


MARK: KEH-1 (LAST HOOD IN ROW)
SECTION VIEW

CONTINUOUS CAPTURE PLENUM INSTALLATION DETAIL



MINI-END SKIRT INSTALLATION DETAIL

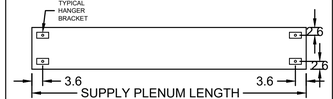


HOOD HANGING HEIGHT FOR FIRE SYSTEMS

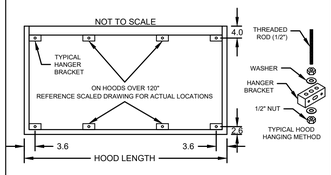
VERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F.) IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

- ☐ RECOMMENDED HANGING HEIGHT = 80" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.
- ☐ OTHER HANGING HEIGHT = _____" FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.

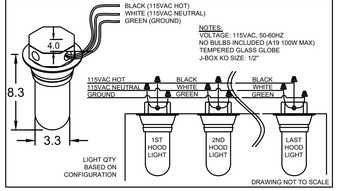
SUPPLY PLENUM HANGER BRACKET DETAIL



HOOD HANGER BRACKET DETAIL



INCANDESCENT / CFL LIGHT DETAIL



MECHANICAL RELEASE MODULE AMEREX | AGENT TANK | AGENT TANK | AGENT TANK

FIRE SYSTEM MARK: 0

ACCUREX

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

PROJECT 9/10/2025

MARK KEH-1

FIVE FOUR LEES SUMMIT R1

10/09/2025
THOMAS P. FRIEZE
NUMBER PE-2010014280
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer in order his supervision. This drawing is provided as instruments of service and shall remain the property of the Engineer whether the project for which it is intended is built. Unauthorized use of this drawing in violation of the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs incorporated herein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, electronic or mechanical, without the prior written consent of the Engineer is strictly prohibited. © 2020 BC Engineers, Inc.

JOB NO.
DRAWN BY: TPF/PH

ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

MECHANICAL HOOD DETAILS AND SCHEDULES

M401

Direct Drive Upblast Centrifugal Roof Exhaust Fan

MARK INFORMATION		FAN INFORMATION									SOUND INFORMATION					MOTOR INFORMATION							
MARK	QTY	MODEL	DRIVE TYPE	VOLUME (CFM)	EXTERNAL SP (IN. WG)	TOTAL EXTERNAL SP (IN. WG)	FAN SPEED (RPM)	OUTLET VELOCITY (FT/MIN)	FEI	TOTAL WEIGHT (LB)	INLET dBA	INLET SONES	INLET SONES (SPHERICAL)	OUTLET dBA	OUTLET SONES	OPERATING POWER (HP)	MOTOR SIZE (HP)	FEP INPUT POWER (KW)	ENCLOSURE	VOLTAGE	CYCLE	PHASE	EC MOTOR	NEC FLA*
KEF-1	1	XCUE-200HP-A	Direct	4,732	1.75	2.097	1,725	1,773.26	1.05	169	78.8	28.06	0	0	0	3.61	5	2.99	OP	208	60	3	No	16.7

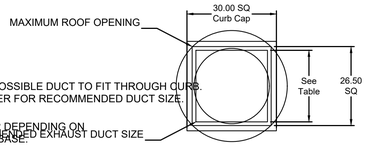
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

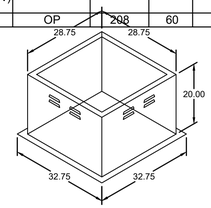
KEF-1 : SELECTED OPTIONS AND ACCESSORIES
Motor VFD Rated without Shaft Grounding Protection
One piece fully welded windband
Tapered bushing wheel hub
Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95)
Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480)
Curb Cap Size - 30 Square
UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762)
Switch, NEMA-3R, Toggle,
Hinge, Factory Installed
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
Grease Trap (PN 475538)
Aluminum Wheel Material

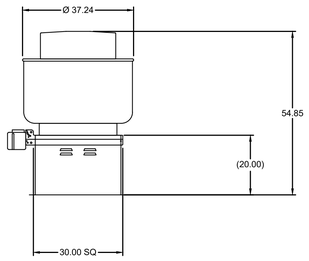
DUCT TYPE	SIZE
STANDARD	24 SQ
FIRE-WRAPPED	16 SQ

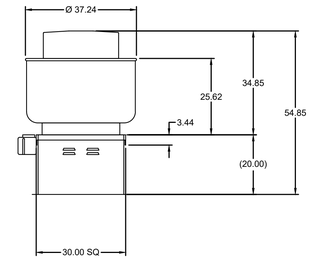
DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.









Direct Drive Upblast Centrifugal Roof Exhaust Fan

MARK INFORMATION		FAN INFORMATION									SOUND INFORMATION					MOTOR INFORMATION							
MARK	QTY	MODEL	DRIVE TYPE	VOLUME (CFM)	EXTERNAL SP (IN. WG)	TOTAL EXTERNAL SP (IN. WG)	FAN SPEED (RPM)	OUTLET VELOCITY (FT/MIN)	FEI	TOTAL WEIGHT (LB)	INLET dBA	INLET SONES	INLET SONES (SPHERICAL)	OUTLET dBA	OUTLET SONES	OPERATING POWER (HP)	MOTOR SIZE (HP)	FEP INPUT POWER (KW)	ENCLOSURE	VOLTAGE	CYCLE	PHASE	EC MOTOR	NEC FLA*
KEF-2	1	XCUE-160-A	Direct	2,600	1.5	2.08	1,725	1,780	1.28	117	76.02	25.37	0	0	0	1.77	2	1.53	OP	208	60	3	No	7.5

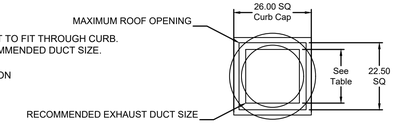
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

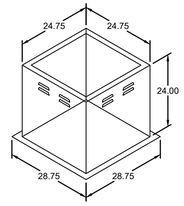
KEF-2 : SELECTED OPTIONS AND ACCESSORIES
Motor VFD Rated without Shaft Grounding Protection
One piece fully welded windband
Tapered bushing wheel hub
Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95)
Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480)
Curb Cap Size - 26 Square
UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762)
Switch, NEMA-3R, Toggle,
Hinge, Factory Installed
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
Fastener Material: Stainless
Grease Trap (PN 475538)
Aluminum Wheel Material

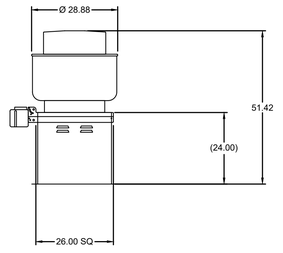
DUCT TYPE	SIZE
STANDARD	18 SQ
FIRE-WRAPPED	12 SQ

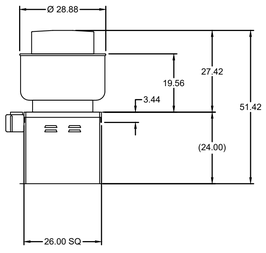
DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.









PROJECT 9/10/2025

FIVE FOUR LEES SUMMIT R1

MARK

KEF-1 & KEF-2

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

ACCUREX

10/09/2025

REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SH ASSOCIATES
SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772
BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer of record and is intended solely for use on the project described in the Architectural Notice. Copyright Protection Act of 1990, all drawings, specifications, ideas and arrangements shown on these drawings are the property of the Engineer of record and the drawings thereto, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication of these drawings without the written permission of the Engineer is prohibited. © 2020 BC Engineers, Inc.

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

MECHANICAL
HOOD DETAILS
AND SCHEDULES

M402

EQUIPMENT SCHEDULE

Tempered Make-Up Air Unit — **Mark: MUA-1**

Qty	Accurex Model	Volume	External SP	Total SP	MCA	MOP	Weight	SCCR
1	XDGX-P122-H22-D1-10	5,864 CFM	0.5 in. wg	1.773	53.2	70	2,551 lb	NA

Motor Information

Size	V/C/P	Enclosure	Motor with Shaft Grounding	Motor RPM	Operating Power
5 hp	208/60/3	OP	No	1200	2.71 hp

Heating

Type	Gas Type	Temperature			Energy			Connection Gas (IN)	Building Gas Pressure	Control Access	Gas Pressure	
		Winter DB	Max Δ	Max LAT	Input	Output	Efficiency				Min	Max
DirectGas	Natural	5 F	58.1 F	63.3 F	400.0 MBH	368.0 MBH	92%	09a	1_2_PSI	No		5 PSI

Cooling

Cooling Type	Coil Model	Rows Deep	Fins Per Inch	Face Velocity	Total Energy	Sensible Energy	Entering Air (F)		Leaving Air (F)	
							Dry	Wet	Dry	Wet
0	DX38S02S10-36x55-RH	2	10	NA	135.1 MBH	129.3 MBH	97 F	79 F		

Coil SP	Refrigerant	Suction Temp	Liquid Temp	Super Heat	Code 18/19	Suction Conn Qty / Size	Liquid Conn Qty / Size
NA	R_454b	55 F			0	NA	NA

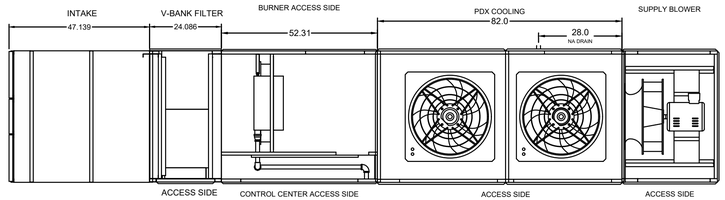
Outlet Sound Power By Octave Band

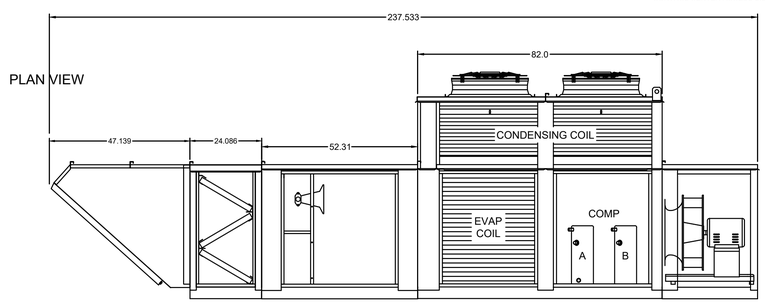
62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

•Lwa - A weighted sound power level based on ANSI S1.4
•dBA - A weighted sound pressure level base on 11.1 dB attenuation per octabe band at 5.0 ft.
•Noise Criteria (NC) based on an average attenuation of 11.5 dB per octabe band at 5.0 ft.

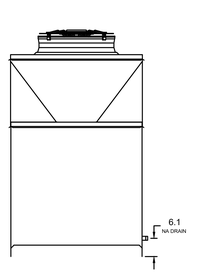
OPTIONS AND ACCESSORIES

Make Up Air
Air Flow Arrangement: Variable Volume
Weatherhood: Aluminum Mesh, 16x25x2 - (4), 12x25x2 - (2)
Filter Section: Aluminum, 20x20x2 - (6)
Damper: Inlet
Outdoor Air Intake Position: End
Return Air Intake Position: None
Discharge Position: Bottom
Coating: Galvanized
Cooling Coil Coating - None
Insulation: Double Wall - Tempering On
Supply Fan Control: VFD
VFD Control: 0-10 VDC By Others
Hinged Access
Access Side: Right-Hand
Unit Weight: 2,551 lb
Control Center
Freeze Protection
Heat Inlet Air Sensor
Cool Inlet Air Sensor
Unit Controls: Microprocessor

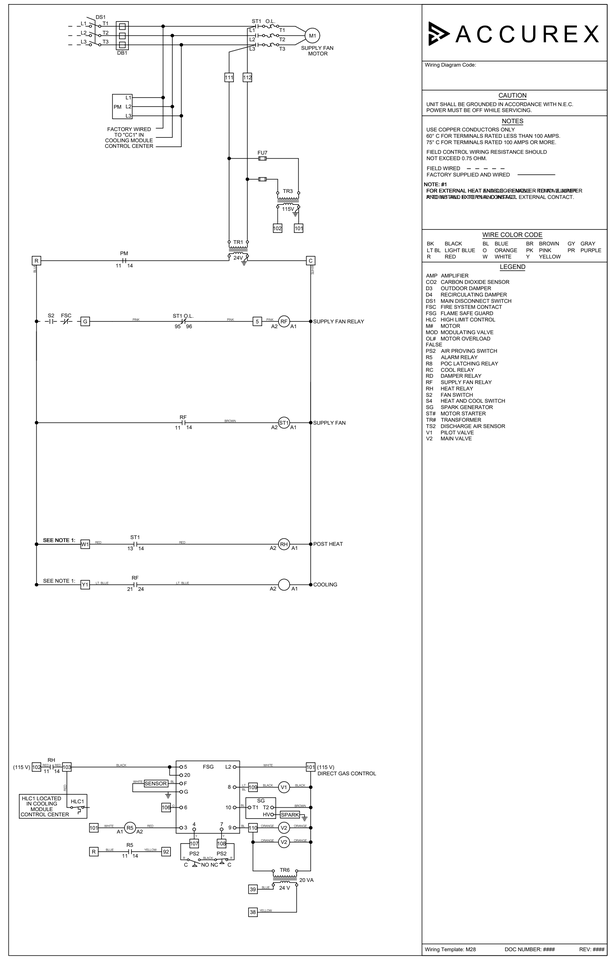




PLAN VIEW



END VIEW



ACCUREX

Wiring Diagram Code:

CAUTION

UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES

USE COPPER CONDUCTORS ONLY.
60° C FOR TERMINALS RATED LESS THAN 100 AMPS.
75° C FOR TERMINALS RATED 100 AMPS OR MORE.

FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM.

FIELD WIRED
FACTORY SUPPLIED AND WIRED

NOTE: #:
FOR EXTERNAL HEAT INTERLOCK REMOVE JUMPER ACROSS TERMINALS
AND INSTALL INTERLOCK CONTACT. EXTERNAL CONTACT.

WIRE COLOR CODE

BK	BLACK	BL	BLUE	BR	BROWN	GY	GRAY
LT BL	LIGHT BLUE	O	ORANGE	PK	PINK	PR	PURPLE
R	RED	W	WHITE	Y	YELLOW		

LEGEND

AMP AMPLIFIER
CO2 CARBON DIOXIDE SENSOR
D3 OUTDOOR DAMPER
D4 RECIRCULATING DAMPER
DS1 MAIN DISCONNECT SWITCH
FSC FIRE SYSTEM CONTACT
FSG FLAME SAFE GUARD
HLC HIGH LIMIT CONTROL
MR MOTOR
MOD MODULATING VALVE
OLR MOTOR OVERLOAD
PM PM
PS2 AIR PROVING SWITCH
RS ALARM RELAY
RB POC LATCHING RELAY
RC COOL RELAY
RD DAMPER RELAY
RF SUPPLY FAN RELAY
RH HEAT RELAY
S2 FAN SWITCH
S3 HIGH LIMIT COOL SWITCH
SG SPARK GENERATOR
ST# MOTOR STARTER
TR# TRANSFORMER
TS2 DISCHARGE AIR SENSOR
V1 PILOT VALVE
V2 MAIN VALVE

Wiring Template: M28 — DOC NUMBER: #### — REV: ####

NOTE: Roof Opening Requirements:

Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides.
For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb.
For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.

NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb.
This is by design, in order to help alleviate water infiltration issues.

FOOTPRINT

ELEVATION VIEW

PROJECT 9/10/2025 | MARK | MUA-1

FIVE FOUR LEES SUMMIT R1

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

10/09/2025
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as instruments of service and shall remain the property of the Engineer whether the project for which they are made is executed or not. The reproduction, alteration or publication by any method, in whole or in part, of any sheet of this drawing, specifications, details and reports, constitutes the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication without the written permission of the Designer/Engineer is forbidden by law and will be subject to legal prosecution. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

MECHANICAL HOOD DETAILS AND SCHEDULES

M403

CONTROL INFORMATION

MARK	MAIN ELECTRICAL CONTROL PACKAGE		MAIN USER INTERFACE		FANS CONTROLLED											
	MODEL	LOCATION	TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
CONTROLS VARIABLE VOLUME	XKC-DCV-S-20-3-1-0	SHIP LOOSE ENCLOSURE	FULL COLOR TOUCHSCREEN	FACE MOUNT ON CONTROL PACKAGE	1	EXHAUST	E1	KEF-2	2	3062	2	208	60	3	NO	YES
					2	EXHAUST	E2	KEF-1	1	5178	5	208	60	3	NO	YES

CONTROL FEATURES

- HOOD LIGHT CONTROL
- TEMP SENSORS (FACTORY INSTALLED) - QTY. 3
- DRY FIRE CONTACTS - QTY. 1
- LIGHTS OFF DURING FIRE
- EXHAUST MAX DURING FIRE

ACCUREX

DOC NUMBER: #### REV: ####

CAUTION — UNIT MUST BE GROUNDED IN ACCORDANCE WITH N.E.C. POWER MUST BE OFF WHILE SERVICING.

ATTENTION — L'APPAREIL DOIT ÊTRE MIS À LA TERRE CONFORMÉMENT AU CODE C.E. L'ALIMENTATION DOIT ÊTRE COUPÉE DURANT L'ENTRETIEN.

c UL us LISTED 43BM

COMMERCIAL APPLIANCE OUTLET CENTER
ELECTRICAL RATINGS: 110-240V,1PHASE, 50-60HZ,15A
BASE FILE #E200616, ML FILE #E313951

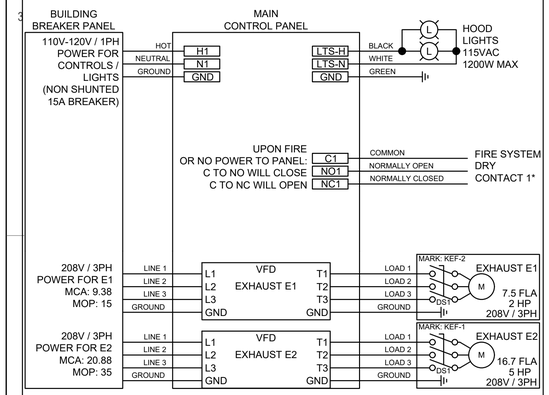
THESE DRAWINGS SHALL NOT BE REMOVED FROM THIS EQUIPMENT. USE COPPER CONDUCTORS RATED TO 90°C UNLESS SPECIFIED. TORQUE CONTROL & GROUND BLOCKS TO 8 LBS. IN. TORQUE POWER LUGS/SCREWS TO COMPONENT RATINGS LISTED. TORQUE CONTROL BOARD SCREW TERMINALS TO 3.5 LBS. IN. FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM. SEE IOM FOR ADDITIONAL INFORMATION, OR CALL FACTORY AT 1-800-371-6858.

PRG VERSION: V5
FIELD WIRED (CÂBLÉ LOCALEMENT) ——————
FACTORY WIRED (CÂBLÉ À L'USINE) ——————

NE PAS RETIRER CES DESSINS DE CET ÉQUIPEMENT. SAUF INDICATION CONTRAIRE, UTILISER DES CONDUCTEURS EN CUIVRE CLASSÉS 90 °C. SERRER LES BORNES DE COMMANDE ET DE MISE À LA TERRE À 8 LB-P.O. SERRER LES COSSES/VIS D'ALIMENTATION AUX COUPLES INDIQUÉS POUR LE COMPOSANT. SERRER LES BORNES À VIS DE LA CARTE DE COMMANDE À 3,5 LB-PO. LA RÉSISTANCE DU CÂBLAGE DE COMMANDE LOCAL NE DOIT PAS DÉPASSER 0,75 OHM. POUR PLUS D'INFORMATION, CONSULTER LE MANUEL OU APPELER 1-800-371-6858

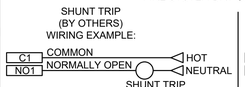
WIRING DIAGRAM CODE: ####
JOB NAME: FIVE FOUR LEES SUMMIT R1
MODEL: XKC-DCV-S-20-3-1-0
SERIAL NUMBER: WDSN#
MARK: CONTROLS VARIABLE VOLUME

POWER WIRING FOR KITCHEN CONTROLS
(WIRING TO BE DONE BY ELECTRICIAN)

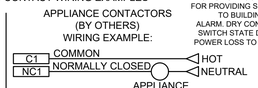


*FIRE SYSTEM DRY CONTACT WIRING EXAMPLES

SHUNT TRIP (BY OTHERS) WIRING EXAMPLE:

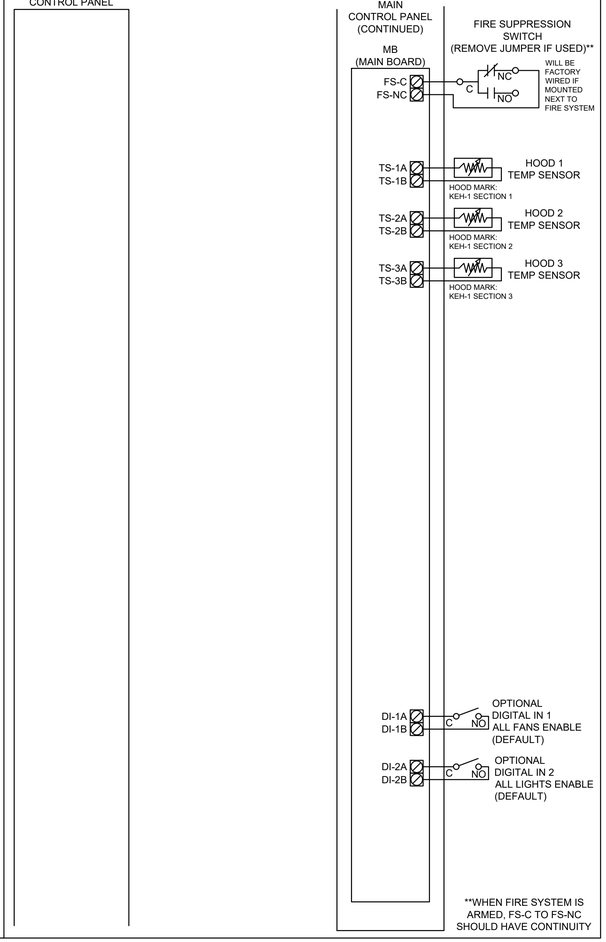


APPLIANCE CONTACTORS (BY OTHERS) WIRING EXAMPLE:



DO NOT USE CONTACTS FOR PROVIDING SIGNALS TO BUILDING FIRE ALARM. DRY CONTACTS SWITCH STATE DURING POWER LOSS TO PANEL.

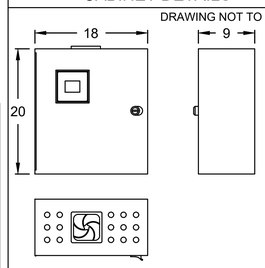
CONTROL WIRING FOR KITCHEN CONTROLS
(WIRING TO BE DONE BY ELECTRICIAN, IF NO CONTROLS CONTRACTOR. USE 18-22GA WIRE UNLESS SPECIFIED.)



**WHEN FIRE SYSTEM IS ARMED, FS-C TO FS-NC SHOULD HAVE CONTINUITY

CABINET DETAILS

DRAWING NOT TO SCALE



MOUNTING LOCATION: SHIP LOOSE ENCLOSURE

TOTAL WEIGHT: 35 LBS

NOTES:
1) WHEN CONTROLS ARE MOUNTED IN HOOD-MOUNTED OR WALL-MOUNTED UTILITY CABINET, FOR HOOD OR WALL CABINET DIMENSIONS SEE HOOD SUBMITTAL.
2) MINIMUM OF 36" OF CLEARANCE RECOMMENDED IN FRONT OF CONTROL CABINET

MAIN USER INTERFACE DETAILS

MOUNTING TYPE
FACTORY MOUNTED:
FACE MOUNT ON CONTROL PACKAGE

USER INTERFACE CONTROL
FANS AND LIGHTS

INTERFACE CABLE LENGTH
4FT (FACTORY PROVIDED)

DEFAULT SETTINGS

FACTORY SETTINGS
TYPE: VAV
CONFIGURATION: STANDARD
ZONES: 2
HOODS: 3
EXHAUST FANS: 2
SUPPLY FANS: 0
MB ROOM SENSOR: NO
MB TEMP SENSORS: 3
HIGH TEMP FAULT: NO
FREEZE PROTECTION: YES
MB GAS RESET: NO
FAN PROVING: NO
BMS: NONE

ZONE SETTINGS
SEE ZONE CONFIGURATION TABLE BELOW

HOOD SETTINGS
SEE HOOD CONFIGURATION TABLE BELOW

EXHAUST FAN SETTINGS
SEE FAN CONFIGURATION TABLE BELOW

SUPPLY FAN SETTINGS
SEE FAN CONFIGURATION TABLE BELOW

SENSOR SETTINGS
SEE HOOD CONFIGURATION TABLE BELOW

USER INTERFACE SETTINGS (MB)
FAN & LIGHT BUTTONS: SHOW BOTH (SEPERATE)

GENERAL SETTINGS
TIME ZONE: CENTRAL DAYLIGHT (DEFAULT)

MB FIRE/FAULT SETTINGS
EXHAUST DURING FIRE: MAX
SUPPLY DURING FIRE: OFF
LIGHTS DURING FIRE: OFF

WIRING DIAGRAM CODE: ####
JOB NAME: FIVE FOUR LEES SUMMIT R1
MODEL: XKC-DCV-S-20-3-1-0
SERIAL NUMBER: WDSN#
MARK: CONTROLS VARIABLE VOLUME
DOC NUMBER: #### REV: ####
PRG VERSION: V5

ZONE CONFIGURATION

ZONE #	ZONE	ROOM TEMP
1	Z1	PRESET
2	Z2	PRESET

HOOD CONFIGURATION

HOOD #	HOOD	HOOD MARK	ZONE	EXH A	EXH B	SUPPLY		MB-TEMP SENSORS	
1	H1	KEH-1 SECTION 1	Z1	E2	-	-		TS1	
2	H2	KEH-1 SECTION 2	Z1	E2	-	-		TS2	
3	H3	KEH-1 SECTION 3	Z2	E1	-	-		TS3	

FAN CONFIGURATION

FAN #	TYPE	FAN	FAN MARK	ZONE	MIN CFM	MAX CFM	MODBUS VFD	VFD ADDRESS	MIN FREQ.	MAX FREQ.	MIN VDC	MAX VDC
1	EXHAUST	E1	KEF-2	Z2	1531	3062	YES	1	30	60	-	-
2	EXHAUST	E2	KEF-1	Z1	2589	5178	YES	2	30	60	-	-

PROJECT 8/28/2025 — FIVE FOUR LEES SUMMIT R1 — MARK — CONTROLS VARIABLE VOLUME

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

ACCUREX

10/09/2025
REGISTERED PROFESSIONAL ENGINEER — STATE OF MISSOURI — THOMAS P. FRIEZE — NUMBER PE-2010014280 — PROFESSIONAL ENGINEER

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, including but not limited to architectural compositions, floor plans, elevations, and details herein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, sale or other use of these documents without the written permission of the Designer/Engineer is strictly prohibited. © 2003 BC Engineers, Inc.

JOB NO.
DRAWN BY: TPF/PH

ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

MECHANICAL HOOD DETAILS AND SCHEDULES

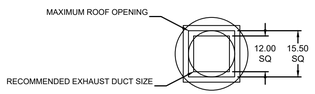
M404

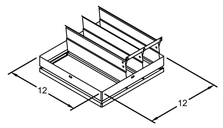
Direct Drive Centrifugal Roof Exhaust Fan

MARK INFORMATION		FAN INFORMATION									SOUND INFORMATION					MOTOR INFORMATION								
MARK	QTY	MODEL	DRIVE TYPE	VOLUME (CFM)	EXTERNAL SP (IN. WG)	TOTAL EXTERNAL SP (IN. WG)	FAN SPEED (RPM)	OUTLET VELOCITY (FT/MIN)	FEI	TOTAL WEIGHT (LB)	INLET dBA	INLET SONES	INLET SONES (SPHERICAL)	OUTLET dBA	OUTLET SONES	OPERATING POWER (HP)	MOTOR SIZE (HP)	FEP INPUT POWER (KW)	ENCLOSURE	VOLTAGE	CYCLE	PHASE	EC MOTOR	NEC FLA*
DWEF-1	1	XRED-100-A	Direct	1,050	0.6	0.702	1,725	1,262.05	0	50	60.44	10.18	0	0	0	0.28	0.333	0	OP	115	60	1	No	7.2

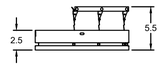
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

DWEF-1 : SELECTED OPTIONS AND ACCESSORIES
Curb Cap Size - 19 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle,
Foam Curb Seal (Factory Applied)
Damper Shipped Loose, BD-100-PB-12X12, Gravity Operated, Not Coated, Nominal Size
Birdscreen: Aluminum, nom. 86% Free Area
Aluminum Wheel Material
Conduit Chase Qty 1

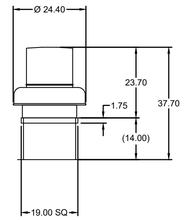




DAMPER

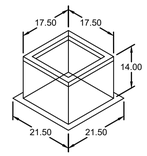


TYP. SECTION VIEW



DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB. CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



ACCUREX

PROJECT 9/10/2025 | MARK

FIVE FOUR LEES SUMMIT R1

DWEF-1

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

10/09/2025
STATE OF MISSOURI
THOMAS P. FRIEZE
NUMBER PE-2010014280
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and shall remain the property of the Engineer whether the project for which it is made is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs incorporated herein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, electronic or mechanical, without prior written consent of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

MECHANICAL
HOOD DETAILS
AND SCHEDULES

M405

ELECTRICAL SPECIFICATIONS

1. GENERAL PROVISIONS:

A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS OUTLINED.

B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.

C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRIC CODE (NEC), AND ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.

D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.

E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, CONDUIT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.

F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.

G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.

H. CONTRACTOR SHALL PROVIDE ACCESS PANELS WHERE NECESSARY FOR CONCEALED ELECTRICAL COMPONENTS.

I. CONTRACTOR SHALL PROMPTLY CALL ENGINEERS ATTENTION TO ANY APPARENT CONTRADICTIONS, AMBIGUITIES, ERRORS, DISCREPANCIES, OR OMISSIONS IN THE PLANS OR SPECIFICATIONS.

2. OPERATION AND MAINTENANCE MANUALS:

A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.

B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.

C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE COLLATED AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC. DOCUMENTS SHALL BE COMPILED AND BOUND IN DIGITAL FILE OR 3 RING BINDER.

3. MANUFACTURERS:

A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.

4. TESTING, AND BALANCING:

A. ALL CIRCUITS SHALL BE TESTED FOR CONTINUITY, SHORTS, AND GROUNDS BEFORE CONNECTING TO THE PROPER PHASE AS DESIGNED TO BALANCE THE LOADING BETWEEN PHASES.

B. POWER AND LIGHTING PANELS SHALL BE PROPERLY PHASED TO DISTRIBUTE THE LOAD AND SHALL BE CONNECTED AND ADJUSTED TO OPERATE AS SPECIFIED.

C. ALL MOTORS AND SIMILAR EQUIPMENT SHALL BE CHECKED FOR PROPER PHASE ROTATION AND OPERATION.

5. RACEWAYS:

A. CONDUIT INSIDE THE BUILDING SHALL BE METALLIC TUBING (EMT), BEARING THE UL LABEL, WITH COMPRESSION TYPE FITTINGS OR SCREW SET FITTINGS.

B. CONDUIT EXPOSED TO THE WEATHER, INSTALLED UNDERGROUND, IN CONCRETE, OR USED FOR SERVICE ENTRANCE SHALL BE STANDARD RIGID CONDUIT (GALVANIZED) WITH THREADED FITTINGS.

C. UNDERGROUND CONDUIT MAY BE POLYVINYL CHLORIDE WITH A DEFLECTION TEMPERATURE, UNDER LOAD AT 264 PSI, OF 78 DEGREES C, AND A TENSILE STRENGTH OF 5,200 PSI. JOINTS SHALL BE FLUSH SOLVENT WELDED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE EQUAL TO CARLON POWER AND COMMUNICATIONS DUCT TYPE DB (DIRECT BURIAL). CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.

D. FLEXIBLE METAL CONDUIT SHALL ONLY BE USED FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND LIGHT FIXTURES. MAXIMUM LENGTH SHALL BE 6'-0".

6. CONDUCTORS:

A. WIRES SHALL BE CONTINUOUS WITHOUT SPLICES OR TAPS IN CONDUIT RUNS. ALL SPLICES SHALL BE MADE IN JUNCTION, PULL, OR OUTLET BOXES. ALL WIRE SHALL BE INSTALLED IN CONDUIT, WIREWAYS, OR OTHER PROTECTIVE COVER SANCTIONED BY CODES.

B. CONDUCTORS FOR LIGHTING AND POWER SHALL BE COPPER, MINIMUM NO. 12 A.W.G., 600 VOLT.

C. NO. 10 GAUGE AND SMALLER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), SOLID CONDUCTOR, UNLESS OTHERWISE INDICATED.

D. NO. 8 GAUGE AND LARGER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED, UNLESS OTHERWISE INDICATED.

E. SERVICE ENTRANCE AND PANEL FEEDER CONDUCTORS, NO. 3 GAUGE AND LARGER SHALL BE TYPE XHHW-2 (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED COPPER, UNLESS OTHERWISE INDICATED.

F. ALUMINUM SERVICE WIRE MAY BE USED FOR SERVICE ENTRANCE CONDUCTORS AND/OR PANEL FEEDERS ONLY. ALL OTHER WIRING SHALL BE COPPER CONDUCTORS AS HEREINBEFORE SPECIFIED.

G. ALUMINUM CONDUCTORS SHALL BE TYPE 'XHHW-2', ALCAN, "STABILOY" TYPE ALLOY CONDUCTORS UTILIZING "AA-8030" ALUMINUM ALLOY. CONDUCTORS SHALL BE UL LISTED.

H. ALL ALUMINUM CONDUCTORS SHALL BE TERMINATED IN CONNECTIONS OR LUGS WHICH ARE DUAL RATED (AL7CU OR AL9CU) AND ARE LISTED BY UL FOR USE WITH ALUMINUM OR COPPER CONDUCTORS AND SHALL BE SIZED TO ACCEPT ALUMINUM CONDUCTORS OF THE AMPACITY SPECIFIED.

7. MC CABLE:

A. MC CABLE SHALL CONSIST OF INTERLOCK ARMORED CABLE MADE OF THREE OR FOUR TYPE THHN SOLID (#8 AWG AND LARGER MAY BE STRANDED) COPPER CONDUCTORS RATED 90°C FOR DRY LOCATIONS, WITH NYLON OR EQUIVALENT UL LISTED JACKET, PER UL STANDARD 83 THE THREE CONDUCTORS SHALL BE TWISTED TOGETHER WITH THE COPPER GROUNDING CONDUCTOR, SUITABLE FILLERS, AND WRAPPED IN BINDER TAPE. THE ASSEMBLY SHALL BE ARMORED WITH SPIRALLY WRAPPED INTERLOCKED ARMOR OF ALUMINUM OR GALVANIZED STEEL.

B. CABLES SHALL BE TESTED IN ACCORDANCE WITH UL STANDARD 1569 FOR TYPE MC CABLE AND RATED AT 600 VOLTS, 90 DEG. C FOR DRY LOCATIONS AND 75 DEG. C FOR WET LOCATIONS.

8. WIRING DEVICES:

A. WALL SWITCHES SHALL BE SPECIFICATION GRADE, QUIET TYPE, FLUSH TOGGLE SWITCH, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES.

1) SINGLE POLE: HUBBELL #CS1221-X, OR EQUAL.
2) THREE WAY: HUBBELL #CS1223-X, OR EQUAL.
3) AS SPECIFIED ON PLANS

B. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX, GROUNDING, THREE-WIRE TYPE, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES. HUBBELL #CR5352-X, OR EQUAL.

C. GROUND FAULT INTERRUPTER RECEPTACLES (GFI) SHALL BE HUBBELL #GF20-XL. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.

D. ISOLATED GROUND RECEPTACLES (IG) SHALL BE HUBBELL #CR5352IGW, WHITE COLOR. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED. DEVICE SHALL BE WHITE W/ ORANGE TRIANGLE.

E. RECEPTACLES OUTSIDE BUILDING AND WHERE NOTED AS WEATHERPROOF, SHALL BE LISTED 'WEATHER-RESISTANT' HUBBEL #GFTR20-X OR EQUAL AND SHALL BE INSTALLED IN A WEATHERPROOF ENCLOSURE WHICH SHALL BE INTERMATIC #WP1010MXD OR #WP1010HMXD DIECAST METAL WEATHERPROOF RECEPTACLE COVER. COVER SHALL BE WEATHER PROOF RATED WHILE IN USE.

F. ALL DEVICES AND DEVICE COVERPLATES IN FRONT OF HOUSE SHALL BE BLACK AND ALL DEVICES IN BACK OF HOUSE SHALL BE WHITE WITH STAINLESS STEEL COVERPLATES.

9. BOXES:

A. HOT DIPPED GALVANIZED STEEL BOXES. PROVIDE TYPE TO SUIT CONDITIONS FOR INSTALLATION.

B. ALL BOXES SHALL BE FLUSH MOUNTED, UNLESS INDICATED OTHERWISE.

ELECTRICAL SPECIFICATIONS (CONTINUED)

10. DISTRIBUTION PANEL:

A. THE DISTRIBUTION PANEL SHALL BE EQUAL TO SQUARE D I-LINE SERIES TYPE AND SHALL BE LOW VOLTAGE, CONFIGURED AN SHOWN ON THE DRAWINGS. THE MAIN DISTRIBUTION PANELS SHALL BE DESIGNED TO MEET UL AND NEMA STANDARDS. BUS BARS SHALL BE NONTAPERED, COPPER AND MOUNTED ON SUPPORTS OF HIGH IMPACT, NON-TRACKING INSULATING MATERIAL.

1) A GROUND BUS SHALL BE FURNISHED. THE MAIN DISTRIBUTION PANEL SHALL HAVE A FULL SIZED SOLID COPPER NEUTRAL AND GROUND BUS. WIRE TERMINALS SHALL BE SOLDERLESS TYPE SUITABLE FOR COPPER CABLE OF THE SIZES INDICATED. MAIN DISTRIBUTION PANEL SHALL BE BRACED TO WITHSTAND MECHANICAL FORCES UP TO 65,000 AMPS SYM.

B. DISTRIBUTION PANEL DEVICES:

1) MOLDED CASE CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC CONSTRUCTION. (ALL CIRCUIT BREAKERS SHALL HAVE SUFFICIENT INTERRUPTED CAPACITY RATINGS TO PROPERLY CLOSE AGAINST AND INTERRUPT INSTANTANEOUSLY THE MAXIMUM SHORT-CIRCUIT CURRENT AVAILABLE AT THE CIRCUIT BREAKER.) INTERRUPTING CAPACITIES SHALL COMPLY WITH INDICATED AVAILABLE FAULT CURRENT. THE QUANTITY AND CONTINUOUS CURRENT RATINGS OF THE CIRCUIT BREAKERS SHALL BE AS INDICATED ON THE DRAWINGS.

2) CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA PB-1. CIRCUIT BREAKERS SHALL BE BOLT-ON, GROUP MOUNTED, AMBIENT COMPENSATED, MOLDED CASE, QUICK-MAKE, QUICK-BREAK, THERMAL-MAGNETIC, WITH COMMON TRIP, UL RATED TO CARRY 8p0% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 25 DEGREES C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C. THE OPERATING MECHANISM SHALL BE TRIP-FREE SO THAT CONTACTS CANNOT BE HELD CLOSED AGAINST ANY ABNORMAL OVERCURRENT OR SHORT CIRCUIT CONDITION.

a) BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.

C. BUS BAR BRACING SHALL BE UL LISTED AT 65,000 SYMMETRICAL AMPERES MINIMUM. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS.

D. THE DISTRIBUTION PANEL AND ALL LOW VOLTAGE PROTECTIVE DEVICES SHALL BE IDENTIFIED WITH PHENOLIC ENGRAVED NAME TAGS SHOWING DRAWINGS DESIGNATIONS AND LOADS BEING FED.

E. THE PANEL SHALL BE SERVICE ENTRANCE RATED.

F. THE PANEL SHALL BE EQUIPPED WITH MAIN BREAKER.

11. PANELBOARDS:

A. FURNISH AND INSTALL CIRCUIT BREAKER PANELBOARDS AS SHOWN ON THE DRAWINGS. PANELBOARDS SHALL BE LISTED BY UL AND SO LABELED, AND SHALL BE FULLY RATED FOR THE VOLTAGE AND CURRENT CAPACITY INDICATED ON THE PANEL SCHEDULE. PANELBOARDS SHALL BE EQUAL TO SQUARE D TYPE NQ OR NF WITH BOLT IN TYPE BREAKERS. PANELBOARD LUGS SHALL BE RATED AT 75°C.

1) CIRCUIT BREAKER INTERRUPTING CAPACITIES SHALL MEET OR EXCEED THE AVAILABLE RMS SYMMETRICAL FAULT CURRENTS INDICATED AND AS REQUIRED TO MEET OR EXCEED THE AVAILABLE FAULT CURRENT FROM LOCAL UTILITY.

B. CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA AB-L. CIRCUIT BREAKERS SHALL BE BOLT-ON, GROUP MOUNTED, AMBIENT MAGNETIC, WITH COMMON TRIP, UL RATED TO CARRY 80% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 40° C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C. THE OPERATING MECHANISM SHALL BE TRIP-FREE SO THAT CONTACTS CANNOT BE HELD CLOSED AGAINST ANY ABNORMAL OVERCURRENT OR SHORT CIRCUIT CONDITION.

a) BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.

C. PANELBOARD BOXES SHALL BE GALVANIZED SHEET STEEL WITH AMPLE WIRING GUTTER SPACE IN ACCORDANCE WITH NEC. FRONTS SHALL BE OF SHEET STEEL PAINTED LIGHT GREY OVER A SUITABLE RUST INHIBITOR PRIMER. PANELBOARDS SHALL BE EQUIPPED WITH ONE PIECE DOOR, CYLINDER TUMBLER TYPE LOCK, DIRECTORY CARD-HOLDER AND QUARTER-TURN ADJUSTABLE TRIM CLAMPS.

D. PANELBOARD INTERIORS SHALL CONSIST OF REINFORCED GALVANIZED SHEET STEEL FRAMES WITH ALUMINUM BUS BARS AND CIRCUIT BREAKERS, PROPERLY SUPPORTED TO PREVENT VIBRATIONS AND BREAKAGE IN HANDLING. BUS BARS SHALL BE SEQUENCE PHASED. PANELBOARD SHALL HAVE A FULL SIZED SOLID ALUMINUM NEUTRAL AND GROUND BUS.

E. BUS BAR BRACING SHALL BE UL LISTED AS INDICATED ON DRAWINGS. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS.

F. DIRECTORY CARDS SHALL BE COMPLETELY FILLED IN BY TYPEWRITER, LISTING CIRCUIT NUMBERS AND LOAD SERVED, INCLUDING EXISTING CIRCUITS. CIRCUIT BREAKERS SHALL BE IDENTIFIED BY CIRCUIT NUMBER LABELS AS HEREINBEFORE SPECIFIED.

12. DISCONNECTS:

A. DISCONNECTS SHALL BE EXTERNALLY OPERATED, QUICK-MAKE, QUICK-BREAK, SAFETY, WITH PROVISIONS FOR PAD LOCKING. FUSED AND NON-FUSED DISCONNECT SWITCHES SHALL BE PROVIDED AS INDICATED.

B. INDOOR SWITCHES SHALL BE NEMA I AND OUTDOOR SWITCHES SHALL BE NEMA 3R, UNLESS INDICATED OTHERWISE.

13. FUSES:

A. FUSES PROTECTING CIRCUIT BREAKER PANELS SHALL BE CURRENT LIMITING U.L. CLASS RK-1 FUSES WITH 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE SILVER FOR RATINGS ABOVE 60 AMPERES.

B. ALL OTHER FUSES SHALL BE U.L. CLASS RK-5, DUAL-ELEMENT WITH A MINIMUM TIME-DELAY OF 10 SECONDS AT 500% RATING. FUSES SHALL HAVE CURRENT-LIMITING SHORT-CIRCUIT LINKS AND 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE COPPER.

14. LIGHT FIXTURES:

A. WHERE LIGHT FIXTURES ARE MOUNTED IN A LAY-IN CEILING, PROVIDE A MINIMUM OF 2 SUPPORT WIRES ATTACHED DIRECTLY BETWEEN EACH LIGHT FIXTURE AND THE BUILDING STRUCTURE. SUPPORT WIRES SHALL BE A MINIMUM OF 12 GAUGE GALVANIZED STEEL WIRE, SOFT ANNEALED.

B. FIXTURES ARE REQUIRED AT ALL LIGHTING OUTLETS SHOWN ON THE DRAWINGS. APPROVED LIGHTING FIXTURE WIRE IS REQUIRED IN ALL FIXTURES AND FIXTURE RACEWAYS. WEATHERPROOF WIRING IS REQUIRED FOR EXTERIOR FIXTURES. ALL PARTS OF FIXTURES AND WIRING SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.

C. ALL FIXTURES SHALL CARRY UL AND ETL LABELS.

15. SLEEVES:

A. PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK.

B. INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL, PACK BETWEEN CONDUIT AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.

C. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WEATHERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.

16. GROUNDING:

A. GROUND ALL ELECTRICAL APPARATUS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) 250, AND ANY LOCAL REQUIREMENTS. INSURE CONTINUOUS BOND WHERE FLEXIBLE CONDUIT IS USED. PROVIDE BONDING JUMPER INSIDE ALL FLEXIBLE CONDUIT.

B. BOND METAL PIPING SYSTEMS IN COMPLIANCE WITH NEC 250.4(A)(4).

17. PENETRATIONS OF FIRE RATED ASSEMBLIES:

A. OUTLET BOXES THAT DO NOT EXCEED 16 SQUARE INCHES AND INSTALLED IN FIRE RATED WALLS SHALL NOT BE INSTALLED CLOSER THAN 24" HORIZONTAL INCHES TO OTHER OUTLET BOXES.

B. IF BOXES MUST BE INSTALLED WITHIN 24" OF EACH OTHER THAN BOTH OUTLET BOXES SHALL BE PROTECTED WITH LISTED PUTTY PADS, 3M FIRE BARRIER MOLDABLE PUTTY + OR EQUAL.

C. CONDUITS, SLEEVES AND OTHER THROUGH-PENETRATIONS OF FIRE-RATED ASSEMBLIES SHALL BE PROTECTED WITH LISTED FIRE CAULKING OR OTHER APPROVED UL-SYSTEM DESIGNED FOR THE ASSEMBLY TYPE(S) AND CONSTRUCTION METHOD(S) USED.

18. FIRE ALARM SYSTEM:

A. ELECTRICAL CONTRACTOR SHALL PROVIDE DESIGN BUILD ENERGINEERED SHOP DRAWINGS OF FIRE ALARM SYSTEM TO BE INSTALLED. PROVIDE DEVICES, CONDUIT, WIRES, CABLE, PROGRAMMING AND TESTING AS DIRECTED BY EQUIPMENT MANUFACTURER AND LOCAL FIRE DEPARTMENT FOR A CODE COMPLIANT FIRE ALARM/DETECTION SYSTEM. MATERIALS, EQUIPMENT, AND WORKMANSHIP SHALL MEET PREVAILING CODES. THE SYSTEM SHALL BE COMPLETE AND OPERABLE. SUBMIT ONE LINE DIAGRAM OF SYSTEM WITH SIZES AND BATTERY CALCULATIONS. EQUIPMENT TO BE NEW AND SHALL BE STAMPED, SIGNED, CALIBRATION AND TESTED BY FACTORY CERTIFIED TECHNICIAN. FIRE ALARM DEVICES ARE SHOWN FOR INTENT ONLY FOR PERMITTING PROCESS. CONTRACTOR IS RESPONSIBLE FOR INCLUDING IN BID/DESIGN ALL NECESSARY DEVICES (ANNUNCIATOR(S), NOTIFICATION APPLICANCES, INITIATING DEVICES, AND ADDITIONAL COMPONENTS).

ELECTRICAL SYMBOLS LIST

CIRCUITING & NOTES	
+46"	SPECIAL MOUNTING HEIGHT FOR ASSOCIATED DEVICE (CENTERLINE OF DEVICE)
GFI	GROUND FAULT CIRCUIT INTERRUPTER DEVICE
WP	WEATHERPROOF ENCLOSURE ON DEVICE
WR	WEATHERPROOF RESISTANT DEVICE
IG	ISOLATED GROUND DEVICE
EM	EMERGENCY BATTERY BACKUP
(TIE)	PARTIAL HOMERUN. REFER TO PLANS FOR ADDITIONAL DEVICES CONNECTED TO THIS CIRCUIT.
X	ELECTRICAL FLOOR PLAN NOTE WITH DESIGNATION
2 LP	CONDUIT CONCEALED WHERE POSSIBLE OR AS NOTED, ARROWS INDICATE HOME RUN TO PANEL. CIRCUIT NUMBERS INDICATED
	#12 WIRE IN CONDUIT, UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	GROUNDING CONDUCTOR, #12 WIRE UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	CONDUIT ROUTED UNDER FLOOR/GRADE
LIGHTING	
	EMERGENCY TWIN HEAD LIGHT FIXTURE
	EXIT LIGHT WITH DIRECTIONAL ARROWS INDICATED
A	STRIP FIXTURE WITH TYPE DESIGNATION
A	RECESSED OR SURFACE MOUNTED FIXTURE WITH TYPE DESIGNATION
A NL	NIGHT LIGHT, CONNECT TO UNSWITCHED CIRCUIT
A	CEILING OR RECESSED FIXTURE WITH TYPE DESIGNATION
A	WALL MOUNTED FIXTURE WITH TYPE DESIGNATION
POWER DEVICES	
	DUPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	FOURPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	CONTROLLED RECEPTACLE. CONTROLLED DEVICE SHALL BE PERMANENTLY MARKED "CONTROLLED" AT FACTORY.
	HEAVY DUTY OUTLET - NEMA CONFIGURATION SIZE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION
	PANEL BOARD, TOP OF BOX 6'-0" AFF
J	JUNCTION BOX
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MAGNETIC STARTER
	MOTOR WITH DESIGNATION
CONTROLS	
S	SINGLE POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_P	SINGLE POLE WALL SWITCH WITH PILOT LIGHT, TOP OF BOX AT 48" AFF
S_K	SINGLE POLE WALL SWITCH, KEY OPERATED, TOP OF BOX AT 48" AFF
S_m	MANUAL MOTOR STARTER WITH OVERLOADS

OCCUPANCY SENSORS
1. DUAL TECHNOLOGY/ULTRASONIC CEILING SENSORS SHALL BE MOUNTED 6' FROM SUPPLY/EXHAUST AIR DIFFUSERS.
2. LOW VOLTAGE CEILING SENSORS SHALL BE PROVIDED WITH 6' SLACK CONDUCTOR COILED AT SENSOR.

S_O	WALL MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR, ACUITY SENSORSWITCH #WSX-PDT-SA OR EQUAL, TOP OF BOX AT 48" AFF. SENSORS SHALL BE PROGRAMMED FOR MANUAL-ON OPERATION.
US	DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSORS, ACUITY nLIGHT #NCM-PDT-9-RJB OR EQUAL.
PP	OCCUPANCY SENSOR POWER PACK, ACUITY nLIGHT #NPP16 OR EQUAL, PROVIDE LOW VOLTAGE WIRING TO OCCUPANCY SENSORS AND MOMENTARY SWITCHES
COMMUNICATIONS	
	DATA/TELEPHONE OUTLET BOX WITH CONDUIT FROM THIS LOCATION BACK TO PATCH PANEL LOCATED IN DATA CLOSET. RUN CONDUIT UNDER SLAB. REFER TO SHEET E501 AND E502 FOR ADDITIONAL INFORMATION AND CONDUIT SIZES. PROVIDE CONDUIT WITH PULL STRING. TERMINATE IN DATA CLOSET WITH BUSHINGS
TV	FLAT SCREEN TELEVISION - PROVIDE AND INSTALL ONE (1) ISOLATED GROUND RECEPTACLE WITH STAINLESS STEEL PLATE AND ONE (1) SINGLE GANG JUNCTION BOX WITH 1"C WITH PULL STRING TO ABOVE ACCESSIBLE CEILING FOR DATA CABLES. VERIFY MOUNTING HEIGHT. ALL TV CIRCUIT WIRING SHALL BE SOLID #10 CONDUCTORS. REFER TO SHEET E501 & E502 FOR MOUNTING LOCATION AND ADDITIONAL INFORMATION.
FIRE ALARM	
SD	CEILING MOUNT SMOKE DETECTOR
DD	DUCT MOUNT SMOKE DETECTOR
F	FIRE ALARM PULL STATION, TOP OF BOX AT 48" AFF
	FIRE ALARM AUDIBLE/VISUAL COMBINATION SIGNAL, CENTERLINE AT 6'-8" AFF
	FIRE ALARM VISUAL STROBE, CENTERLINE AT 6'-8" AFF
WF	WATER FLOW SWITCH
TS	TAMPER SWITCH
R	RELAY
MISCELLANEOUS	
	COMBINATION POWER AND DATA FLOORBOX
T	LINE VOLTAGE THERMOSTAT PROVIDED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL WIRING
	120 - 24 VOLT INDUSTRIAL CONTROL TRANSFORMER 50 VA VA MINIMUM W/ CIRCUIT BREAKER (MANUAL RESET) FOR ALL VAV BOXES AND BYPASS DAMPERS, VERIFY EXACT REQUIREMENTS WITH MECHANICAL UNITS BEING SUPPLIED
	PUSH BUTTON, TOP OF BOX AT 48" UNLESS NOTED OTHERWISE

ELECTRICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. WHERE CONDUIT IS SHOWN UNDER FLOOR, VERIFY IF FLOOR IS STRUCTURAL SLAB OR SLAB ON GRADE. IF STRUCTURAL SLAB, CORE DRILL PENETRATION, AND ROUTE CONDUIT IN SPACE BELOW. IF SLAB ON GRADE, SAW CUT EXISTING FLOOR SLAB AS REQUIRED FOR INSTALLATION OF UNDER FLOOR CONDUIT. NO STRUCTURAL ELEMENTS SHALL BE CORE DRILLED OR SAW CUT. WHEN SAW CUTTING, PATCH FLOOR TO MATCH EXISTING SURFACE AS REQUIRED.
3. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
4. ALL EXPOSED RACEWAYS SHALL BE IN EMT CONDUIT, MC CABLE IS NOT PERMITTED IN EXPOSED AREAS.
5. ELECTRICAL CONTRACTOR TO COORDINATE MANUFACTURER ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT BEING FURNISHED WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. EQUIPMENT DISCONNECTS TO BE PROVIDED BY ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE IN MECHANICAL SCHEDULES.
6. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES AND DEVICES.
7. REFER TO ELECTRICAL SPECIFICATIONS ELSEWHERE IN THESE DRAWINGS FOR FURTHER INFORMATION AND REQUIREMENTS. GENERAL CONDITIONS AND SUMMARY OF WORK ALSO DIRECTLY APPLY TO THIS WORK.
8. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL PER NEC 210.4.
9. KITCHEN EQUIPMENT - VERIFY ALL ELECTRICAL REQUIREMENTS AND ROUGH-IN LOCATION PRIOR TO WORK.
10. FIRE ALARM SYSTEM IS SHOWN FOR SCHEMATIC PURPOSES. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR PROVIDING DESIGN AND SHOP DRAWINGS SUBMITTAL TO FIRE MARSHAL FOR APPROVAL AS REQUIRED BY THE FIRE MARSHAL. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE ADDITIONAL DEVICES, POWER SUPPLIES, ETC FOR COMPLIANCE WITH CODE.
11. PLANS INDICATE MINIMUM WIRE SIZES PER NEC. ALL BRANCH CIRCUITS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 3% VOLTAGE DROP. ALL FEEDERS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 2% VOLTAGE DROP. ELECTRICAL CONTRACTOR SHALL VERIFY WIRING INDICATED IS SUFFICIENT AND INCREASE CONDUCTOR SIZE AS REQUIRED BASED OFF ACTUAL INSTALLED LENGTH OF CONDUCTORS.
12. PROVIDE LOW VOLTAGE WIRING BETWEEN ALL 0-10V DIMMING DRIVERS CONTROLLED BY 0-10V DIMMERS PER MANUFACTURER'S INSTRUCTIONS.
13. ALL 120 VOLT THROUGH 250 VOLT RECEPTACLES SUPPLIED BY SINGLE PHASE BRANCH CIRCUITS RATED 150 VOLTS OR LESS TO GROUND, 50 AMPS OR LESS, AND THREE-PHASE BRANCH CIRCUITS 150 VOLTS OR LESS TO GROUND, 100 AMPS OR LESS, IN KITCHEN SHALL BE GFCI PROTECTED PER NEC 210.8 (B)(2). (GFCI DEVICE OR GFCI BREAKER AS INDICATED ON PLANS)
14. PROVIDE SEAL-OFF FITTINGS AT ALL COOLER/FREEZER PENETRATIONS.
15. TYPE 1 HOOD FIRE SUPPRESSION SYSTEM TO BE INTERLOCKED WITH FIRE ALARM SYSTEM. UPON ACTIVATION OF HOOD FIRE SUPPRESSION SYSTEM SIGNAL SHALL BE SENT TO FIRE ALARM.
16. WHEREVER POSSIBLE, CONDUIT SHALL BE RUN CONCEALED WITHIN WALLS, CEILINGS, SOFFITS, ETC. SURFACE MOUNTED CONDUIT IN FINISHED SPACES MUST BE APPROVED BY THE ENGINEER OR ARCHITECT PRIOR TO INSTALLATION. EXTERIOR CONDUIT SHALL NOT BE RUN EXPOSED IN PUBLICLY VISIBLE AREAS WITHOUT APPROVAL OF THE ARCHITECT OR ENGINEER.
17. DISCONNECTING MEANS FOR HEATING EQUIPMENT COVERED IN ARTICLE 424 OF THE NEC AND FOR REFRIGERATION EQUIPMENT FOUND IN ARTICLE 440 OF THE NEC WILL BE REQUIRED TO BE INDEPENDENTLY SUPPORTED OFF THE UNIT. THIS REQUIREMENT WILL ALSO APPLY TO THE REQUIRED SERVICING 120 VOLT RECEPTACLE OUTLET.
18. ALL DEVICES AND COVER PLATES IN FRONT OF HOUSE SHALL BE BLACK AND ALL DEVICES IN BACK OF HOUSE SHALL BE WHITE WITH STAINLESS STEEL COVER PLATES.
19. ALL RECEPTACLES FOR TELEVISION SHALL BE ISOLATED GROUND (IG) TYPE.
20. PROGRAM ALL TIMECLOCKS TO AUTOMATICALLY CONTROL LOADS PER SCHEDULE AS DIRECTED BY OWNER.

10/9/2025
STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030047
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SH ASSOCIATES
SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service by the Designer/Engineer and is intended for use on this project only. Pursuant to the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, including the overall form, arrangement and composition of spaces and elements appearing herein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use, or disclosure of information contained herein without prior written consent of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.
DRAWN BY: TPF/PH

ISSUE		DATE
	ISSUE FOR PERMIT REVIEW	10-06-2025

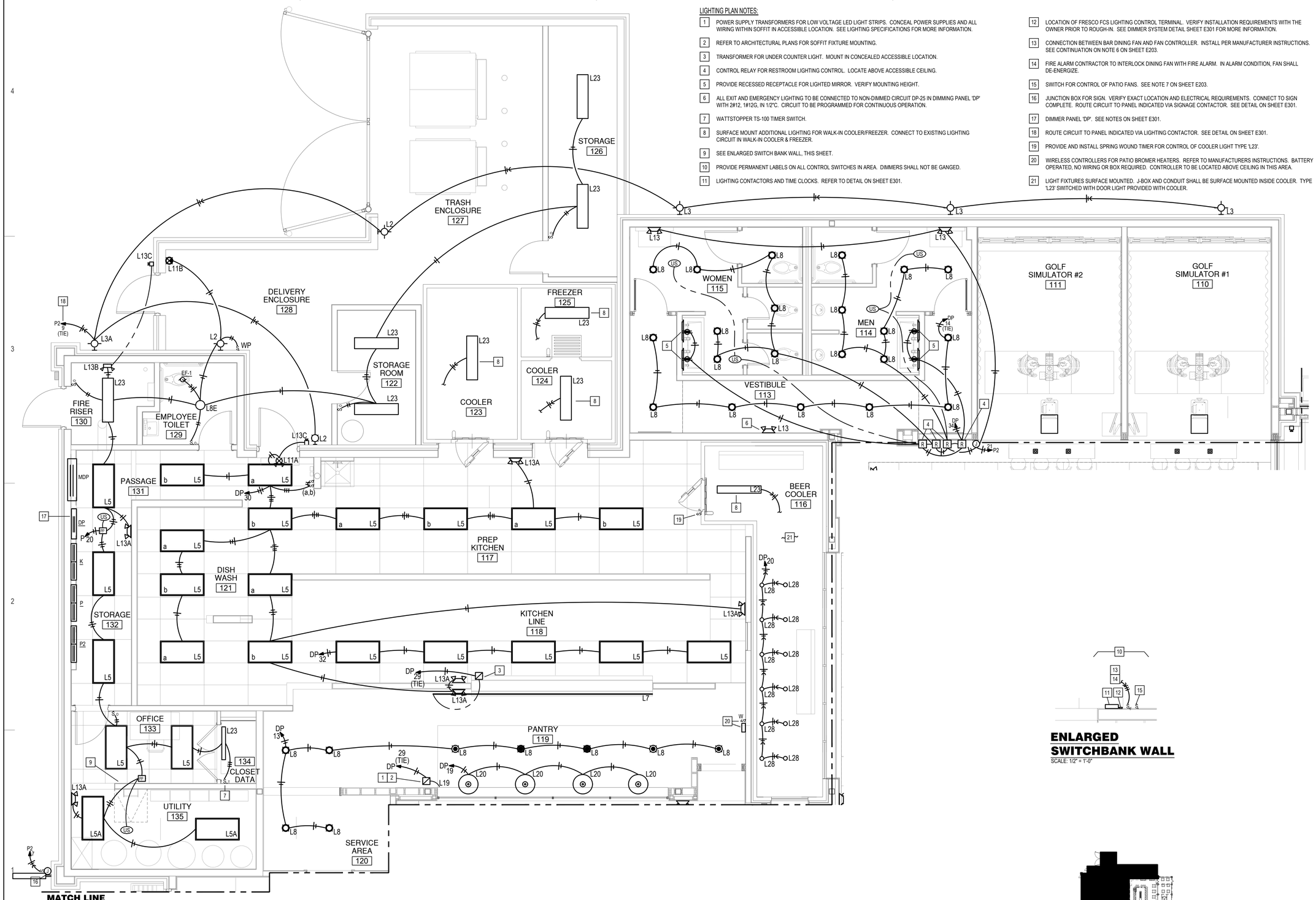
SHEET 24x36

ELECTRICAL SPECIFICATIONS

E000

LIGHTING PLAN NOTES:

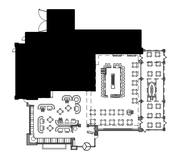
1. POWER SUPPLY TRANSFORMERS FOR LOW VOLTAGE LED LIGHT STRIPS. CONCEAL POWER SUPPLIES AND ALL WIRING WITHIN SOFFIT IN ACCESSIBLE LOCATION. SEE LIGHTING SPECIFICATIONS FOR MORE INFORMATION.
2. REFER TO ARCHITECTURAL PLANS FOR SOFFIT FIXTURE MOUNTING.
3. TRANSFORMER FOR UNDER COUNTER LIGHT. MOUNT IN CONCEALED ACCESSIBLE LOCATION.
4. CONTROL RELAY FOR RESTROOM LIGHTING CONTROL. LOCATE ABOVE ACCESSIBLE CEILING.
5. PROVIDE RECESSED RECEPTACLE FOR LIGHTED MIRROR. VERIFY MOUNTING HEIGHT.
6. ALL EXIT AND EMERGENCY LIGHTING TO BE CONNECTED TO NON-DIMMED CIRCUIT DP-25 IN DIMMING PANEL 'DP' WITH 2#12, 1#12G, IN 1/2"C. CIRCUIT TO BE PROGRAMMED FOR CONTINUOUS OPERATION.
7. WATTSTOPPER TS-100 TIMER SWITCH.
8. SURFACE MOUNT ADDITIONAL LIGHTING FOR WALK-IN COOLER/FREEZER. CONNECT TO EXISTING LIGHTING CIRCUIT IN WALK-IN COOLER & FREEZER.
9. SEE ENLARGED SWITCH BANK WALL, THIS SHEET.
10. PROVIDE PERMANENT LABELS ON ALL CONTROL SWITCHES IN AREA. DIMMERS SHALL NOT BE GANGED.
11. LIGHTING CONTACTORS AND TIME CLOCKS. REFER TO DETAIL ON SHEET E301.
12. LOCATION OF FRESCO FCS LIGHTING CONTROL TERMINAL. VERIFY INSTALLATION REQUIREMENTS WITH THE OWNER PRIOR TO ROUGH-IN. SEE DIMMER SYSTEM DETAIL SHEET E301 FOR MORE INFORMATION.
13. CONNECTION BETWEEN BAR DINING FAN AND FAN CONTROLLER. INSTALL PER MANUFACTURER INSTRUCTIONS. SEE CONTINUATION ON NOTE 6 ON SHEET E203.
14. FIRE ALARM CONTRACTOR TO INTERLOCK DINING FAN WITH FIRE ALARM. IN ALARM CONDITION, FAN SHALL DE-ENERGIZE.
15. SWITCH FOR CONTROL OF PATIO FANS. SEE NOTE 7 ON SHEET E203.
16. JUNCTION BOX FOR SIGN. VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS. CONNECT TO SIGN COMPLETE. ROUTE CIRCUIT TO PANEL INDICATED VIA SIGNAGE CONTACTOR. SEE DETAIL ON SHEET E301.
17. DIMMER PANEL 'DP'. SEE NOTES ON SHEET E301.
18. ROUTE CIRCUIT TO PANEL INDICATED VIA LIGHTING CONTACTOR. SEE DETAIL ON SHEET E301.
19. PROVIDE AND INSTALL SPRING WOUND TIMER FOR CONTROL OF COOLER LIGHT TYPE 'L23'.
20. WIRELESS CONTROLLERS FOR PATIO BROMER HEATERS. REFER TO MANUFACTURERS INSTRUCTIONS. BATTERY OPERATED, NO WIRING OR BOX REQUIRED. CONTROLLER TO BE LOCATED ABOVE CEILING IN THIS AREA.
21. LIGHT FIXTURES SURFACE MOUNTED. J-BOX AND CONDUIT SHALL BE SURFACE MOUNTED INSIDE COOLER. TYPE 'L23' SWITCHED WITH DOOR LIGHT PROVIDED WITH COOLER.



NORTH

PARTIAL ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"

ENLARGED SWITCHBANK WALL
SCALE: 1/2" = 1'-0"



KEY PLAN
SCALE: NTS

10/9/2025
STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer or under his supervision. This drawing is protected as an Architectural Work under the Copyright Protection Act of 1990, all drawings, specifications, data and forms contained therein are copyrighted work of the Designer/Engineer. Any reproduction, use or forms contained therein are copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, in whole or part, is prohibited. © 2025 BC Engineers, Inc.

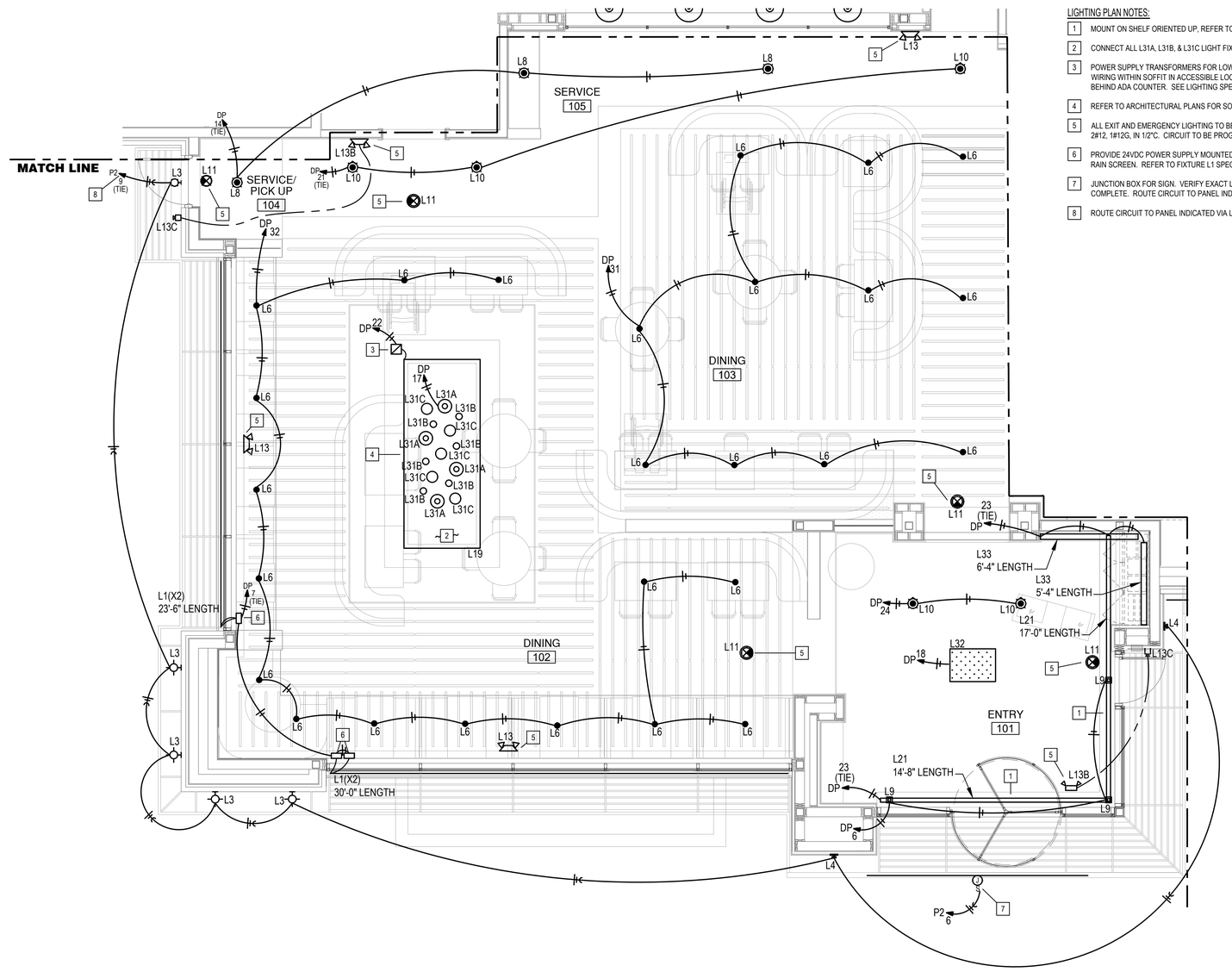
JOB NO.
DRAWN BY: TPF/PH

ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

LIGHTING PLAN

E101



LIGHTING PLAN NOTES:

1. MOUNT ON SHELF ORIENTED UP, REFER TO ARCHITECTURAL DETAILS.
2. CONNECT ALL L31A, L31B, & L31C LIGHT FIXTURES IN THIS AREA TO CIRCUIT DP-17.
3. POWER SUPPLY TRANSFORMERS FOR LOW VOLTAGE LED LIGHT STRIPS. CONCEAL POWER SUPPLIES AND ALL WIRING WITHIN SOFFIT IN ACCESSIBLE LOCATION. REFER TO ARCH PLANS FOR LOCATION OF POWER SUPPLY BEHIND ADA COUNTER. SEE LIGHTING SPECIFICATIONS FOR MORE INFORMATION.
4. REFER TO ARCHITECTURAL PLANS FOR SOFFIT FIXTURE MOUNTING.
5. ALL EXIT AND EMERGENCY LIGHTING TO BE CONNECTED TO NON-DIMMED CIRCUIT DP-25 IN DIMMING PANEL 'DP' WITH 2#12, 1#12G, IN 1/2"C. CIRCUIT TO BE PROGRAMMED FOR CONTINUOUS OPERATION.
6. PROVIDE 24VDC POWER SUPPLY MOUNTED TO BACK SIDE OF PARAPET. CONNECT TO LINEAR LED LIGHTING BEHIND RAIN SCREEN. REFER TO FIXTURE L1 SPECIFICATION ON LIGHTING FIXTURE SCHEDULE FOR DETAILS.
7. JUNCTION BOX FOR SIGN. VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS. CONNECT TO SIGN COMPLETE. ROUTE CIRCUIT TO PANEL INDICATED VIA SIGNAGE CONTACTOR. SEE DETAIL ON SHEET E301.
8. ROUTE CIRCUIT TO PANEL INDICATED VIA LIGHTING CONTACTOR. SEE DETAIL ON SHEET E301.

NORTH

PARTIAL ELECTRICAL LIGHTING PLAN

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

KEY PLAN

SCALE: NTS

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as instruments of service and shall remain the property of the Engineer whether the project for which it is prepared is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in these documents are the property of the Engineer and the Engineer reserves all rights therein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, in whole or in part, is prohibited. Title to these documents shall remain in the Engineer until paid in full. © 2025 BC Engineers, Inc.

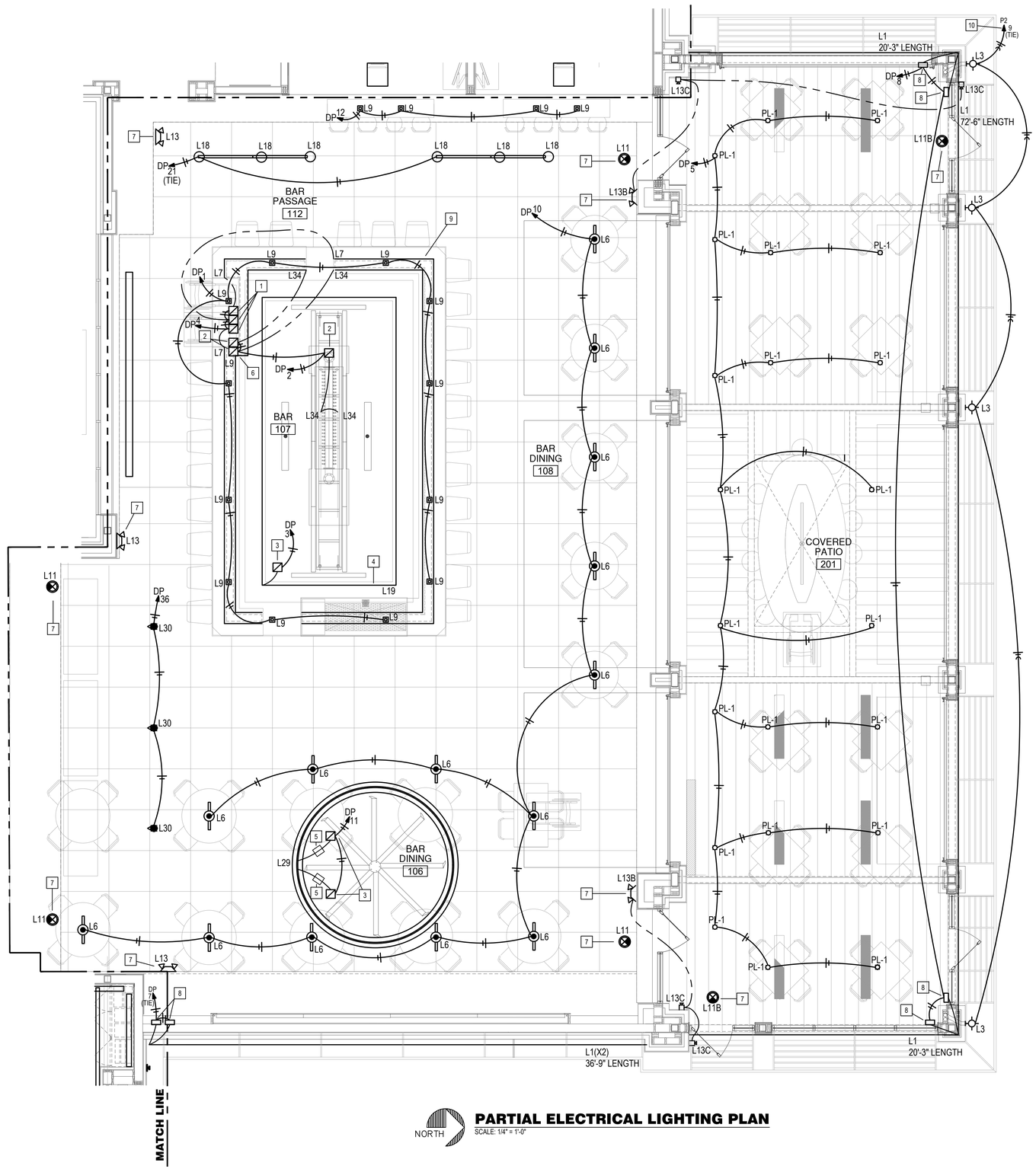
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

LIGHTING PLAN

E102



PARTIAL ELECTRICAL LIGHTING PLAN

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

KEY PLAN

SCALE: NTS

LIGHTING PLAN NOTES:

1. TRANSFORMER FOR UNDER COUNTER LIGHT. MOUNT IN CONCEALED ACCESSIBLE LOCATION. VERIFY EXACT MOUNTING LOCATION AT BAR.
2. MOUNT BLUE LED TAPE OVER TAPS. MOUNT REMOTE POWER BOX BEHIND TV'S. RUN CONDUIT (PAINTED BLACK) NEXT TO ALL THREAD SUPPORT. BLUE LED TAPE ALSO MOUNTED ON EMPLOYEE SIDE OF BAR. MOUNT REMOTE POWER BOX CONCEALED IN ACCESSIBLE LOCATION AT BAR.
3. POWER SUPPLY TRANSFORMERS FOR LOW VOLTAGE LED LIGHT STRIPS. CONCEAL POWER SUPPLIES AND ALL WIRING WITHIN SOFFIT IN ACCESSIBLE LOCATION. REFER TO ARCH PLANS FOR LOCATION OF POWER SUPPLY BEHIND ADA COUNTER. SEE LIGHTING SPECIFICATIONS FOR MORE INFORMATION.
4. REFER TO ARCHITECTURAL PLANS FOR SOFFIT FIXTURE MOUNTING.
5. INSTALL (2) TOKISTAR 'LC-1CH-MULTI' 0-10VDC PROTOCOL DIMMER PACK FOR DIMMING CONTROL OF (1) LED LIGHT STRIP (TYPE L29). MOUNT DIMMER PACKS CONCEALED IN ACCESSIBLE LOCATION. PROVIDE ALL LOW VOLTAGE WIRING FOR CONNECTION LED DRIVER, LED STRIP, AND TO DIMMER CONTROL. REFER TO ARCH DRAWINGS FOR MOUNTING LIGHT FIXTURE.
6. POWER SUPPLIES FOR LIGHTING IN THIS AREA TO BE LOCATED ON THE SHELF, AT THIS LOCATION. REFER TO ARCHITECTURAL DETAILS.
7. ALL EXIT AND EMERGENCY LIGHTING TO BE CONNECTED TO NON-DIMMED CIRCUIT DP-25 IN DIMMING PANEL 'DP' WITH 2#12, 1#12G, IN 1/2"C. CIRCUIT TO BE PROGRAMMED FOR CONTINUOUS OPERATION.
8. PROVIDE 24VDC POWER SUPPLY MOUNTED TO BACK SIDE OF PARAPET. CONNECT TO LINEAR LED LIGHTING BEHIND RAIN SCREEN. REFER TO FIXTURE L1 SPECIFICATION ON LIGHTING FIXTURE SCHEDULE FOR DETAILS.
9. LIGHT FIXTURE 'L7' MOUNTED ON UNDERSIDE OF COUNTER ON CUSTOMER SIDE OF BAR FOR ACCENT LIGHTING. SEE ARCHITECTURAL DETAILS. LIGHT SHALL BE MOUNTED TIGHT TO BOTTOM OF BAR IN CLEAN AND TAUT FASHION TO AVOID SAGGING OF ROPE LIGHT. FIXTURE MOUNTED IN CHANNEL PROVIDED WITH LIGHT.
10. ROUTE CIRCUIT TO PANEL INDICATED VIA LIGHTING CONTACTOR. SEE DETAIL ON SHEET E301.

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030072
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The reproduction, publication or use of this drawing in any manner without permission and consent of the Engineer is prohibited. Any such unauthorized reproduction, publication or use is in violation of the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and arrangements shown on these drawings are the exclusive property of the Engineer and all rights of copyright therein are reserved. Any such unauthorized reproduction, publication or use shall be unlawful and will be prosecuted. Visual contact with these drawings shall constitute prima facie evidence of acceptance of these restrictions. All drawings, specifications, ideas and arrangements shown on these drawings are the exclusive property of the Designer/Engineer. Any reproduction, use or publication without the written consent of the Designer/Engineer is unlawful and will be prosecuted. © 2025 BC Engineers, Inc.

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

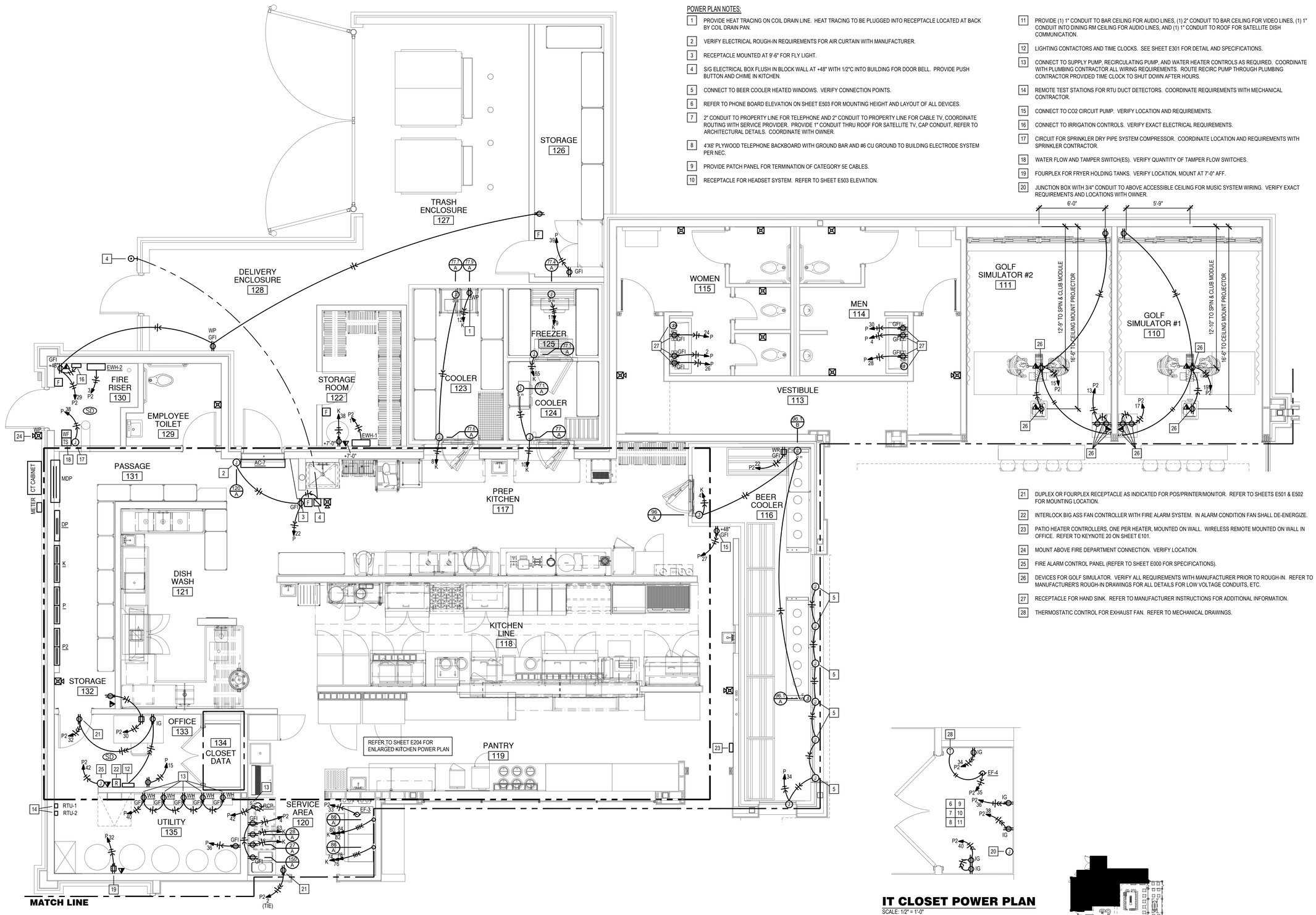
SHEET 24X36

LIGHTING PLAN

E103

POWER PLAN NOTES:

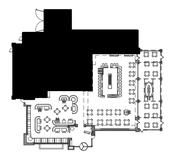
1. PROVIDE HEAT TRACING ON COIL DRAIN LINE. HEAT TRACING TO BE PLUGGED INTO RECEPTACLE LOCATED AT BACK BY COIL DRAIN PAN.
2. VERIFY ELECTRICAL ROUGH-IN REQUIREMENTS FOR AIR CURTAIN WITH MANUFACTURER.
3. RECEPTACLE MOUNTED AT 9'-6" FOR FLY LIGHT.
4. S/G ELECTRICAL BOX FLUSH IN BLOCK WALL AT +48" WITH 1/2"C INTO BUILDING FOR DOOR BELL. PROVIDE PUSH BUTTON AND CHIME IN KITCHEN.
5. CONNECT TO BEER COOLER HEATED WINDOWS. VERIFY CONNECTION POINTS.
6. REFER TO PHONE BOARD ELEVATION ON SHEET E503 FOR MOUNTING HEIGHT AND LAYOUT OF ALL DEVICES.
7. 2" CONDUIT TO PROPERTY LINE FOR TELEPHONE AND 2" CONDUIT TO PROPERTY LINE FOR CABLE TV, COORDINATE ROUTING WITH SERVICE PROVIDER. PROVIDE 1" CONDUIT THRU ROOF FOR SATELLITE TV, CAP CONDUIT, REFER TO ARCHITECTURAL DETAILS. COORDINATE WITH OWNER.
8. 4'X8' PLYWOOD TELEPHONE BACKBOARD WITH GROUND BAR AND #6 CU GROUND TO BUILDING ELECTRODE SYSTEM PER NEC.
9. PROVIDE PATCH PANEL FOR TERMINATION OF CATEGORY 5E CABLES.
10. RECEPTACLE FOR HEADSET SYSTEM. REFER TO SHEET E503 ELEVATION.
11. PROVIDE (1) 1" CONDUIT TO BAR CEILING FOR AUDIO LINES, (1) 2" CONDUIT TO BAR CEILING FOR VIDEO LINES, (1) 1" CONDUIT INTO DINING RM CEILING FOR AUDIO LINES, AND (1) 1" CONDUIT TO ROOF FOR SATELLITE DISH COMMUNICATION.
12. LIGHTING CONTACTORS AND TIME CLOCKS. SEE SHEET E301 FOR DETAIL AND SPECIFICATIONS.
13. CONNECT TO SUPPLY PUMP, RECIRCULATING PUMP, AND WATER HEATER CONTROLS AS REQUIRED. COORDINATE WITH PLUMBING CONTRACTOR ALL WIRING REQUIREMENTS. ROUTE RECIRC PUMP THROUGH PLUMBING CONTRACTOR PROVIDED TIME CLOCK TO SHUT DOWN AFTER HOURS.
14. REMOTE TEST STATIONS FOR RTU DUCT DETECTORS. COORDINATE REQUIREMENTS WITH MECHANICAL CONTRACTOR.
15. CONNECT TO CO2 CIRCUIT PUMP. VERIFY LOCATION AND REQUIREMENTS.
16. CONNECT TO IRRIGATION CONTROLS. VERIFY EXACT ELECTRICAL REQUIREMENTS.
17. CIRCUIT FOR SPRINKLER DRY PIPE SYSTEM COMPRESSOR. COORDINATE LOCATION AND REQUIREMENTS WITH SPRINKLER CONTRACTOR.
18. WATER FLOW AND TAMPER SWITCH(ES). VERIFY QUANTITY OF TAMPER FLOW SWITCHES.
19. FOURPLEX FOR FRYER HOLDING TANKS. VERIFY LOCATION, MOUNT AT 7'-0" AFF.
20. JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING FOR MUSIC SYSTEM WIRING. VERIFY EXACT REQUIREMENTS AND LOCATIONS WITH OWNER.
21. DUPLEX OR FOURPLEX RECEPTACLE AS INDICATED FOR POS/PRINTER/MONITOR. REFER TO SHEETS E501 & E502 FOR MOUNTING LOCATION.
22. INTERLOCK BIG ASS FAN CONTROLLER WITH FIRE ALARM SYSTEM. IN ALARM CONDITION FAN SHALL DE-ENERGIZE.
23. PATIO HEATER CONTROLLERS, ONE PER HEATER, MOUNTED ON WALL. WIRELESS REMOTE MOUNTED ON WALL IN OFFICE. REFER TO KEYNOTE 20 ON SHEET E101.
24. MOUNT ABOVE FIRE DEPARTMENT CONNECTION. VERIFY LOCATION.
25. FIRE ALARM CONTROL PANEL (REFER TO SHEET E000 FOR SPECIFICATIONS).
26. DEVICES FOR GOLF SIMULATOR. VERIFY ALL REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN. REFER TO MANUFACTURER'S ROUGH-IN DRAWINGS FOR ALL DETAILS FOR LOW VOLTAGE CONDUITS, ETC.
27. RECEPTACLE FOR HAND SINK. REFER TO MANUFACTURER INSTRUCTIONS FOR ADDITIONAL INFORMATION.
28. THERMOSTATIC CONTROL FOR EXHAUST FAN. REFER TO MECHANICAL DRAWINGS.



NORTH

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

IT CLOSET POWER PLAN
SCALE: 1/2" = 1'-0"



KEY PLAN
SCALE: NTS

10/9/2025
STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030029
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in these documents are protected under the federal copyright laws and shall not be used in whole or in part, for any other project without the written permission of the Engineer and shall be returned upon request. Copyright, the original, copyrighted work of the Designer/Engineer. Any reproduction, use, or publication by any method, electronic or mechanical, without the written permission of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

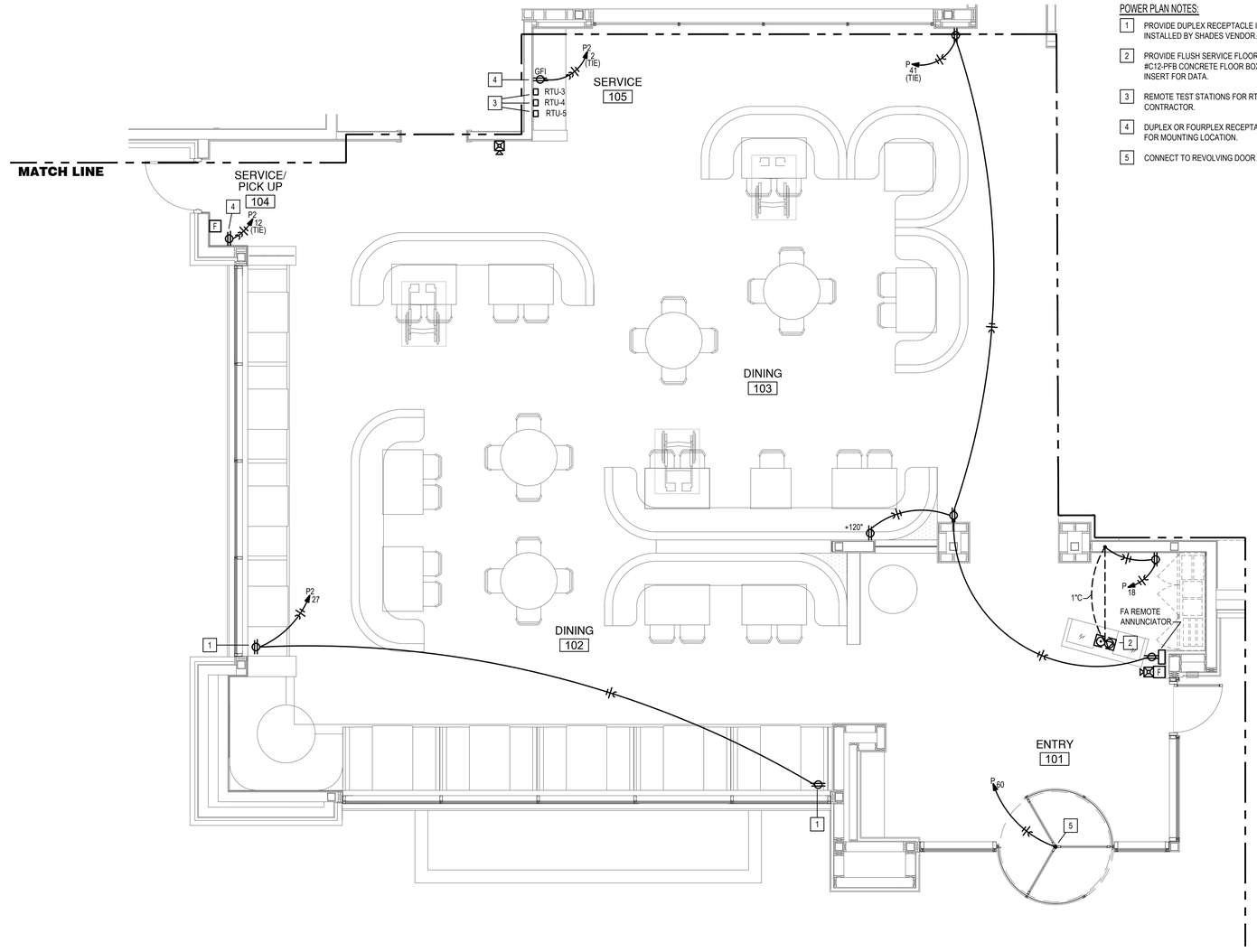
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY:	TPF/PH
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

POWER PLAN

E201



POWER PLAN NOTES:

1. PROVIDE DUPLEX RECEPTACLE IN CEILING AT THE END OF WINDOW OPENING FOR WINDOW MOTORIZED SHADES INSTALLED BY SHADES VENDOR. CONFIRM REQUIREMENTS WITH SHADES VENDOR.
2. PROVIDE FLUSH SERVICE FLOOR BOX WITH (1) DUPLEX RECEPTACLE AND DATA PROVISIONS. FLOOR BOX SYSTEMS #C12-PFB CONCRETE FLOOR BOX WITH #11601 DUPLEX RECEPTACLE COVER PLATE AND #11612 DECORATOR STYLE INSERT FOR DATA.
3. REMOTE TEST STATIONS FOR RTU DUCT DETECTORS. COORDINATE REQUIREMENTS WITH MECHANICAL CONTRACTOR.
4. DUPLEX OR FOURPLEX RECEPTACLE AS INDICATED FOR POS/PRINTER/MONITOR. REFER TO SHEETS E501 & E502 FOR MOUNTING LOCATION.
5. CONNECT TO REVOLVING DOOR POWER SUPPLY. VERIFY ROUGH-IN LOCATION WITH MANUFACTURER'S MANUAL.

NORTH

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

KEY PLAN
SCALE: NTS

10/9/2025
STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030029
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003029

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and shall remain the property of the Engineer whether the project for which it is prepared is executed or not. It is unlawful for any person to use the drawings, specifications, ideas and designs contained herein, in whole or in part, for any purpose whatsoever without the written permission of the Engineer. Any reproduction, use or publication by any method, electronic or mechanical, without prior written consent of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

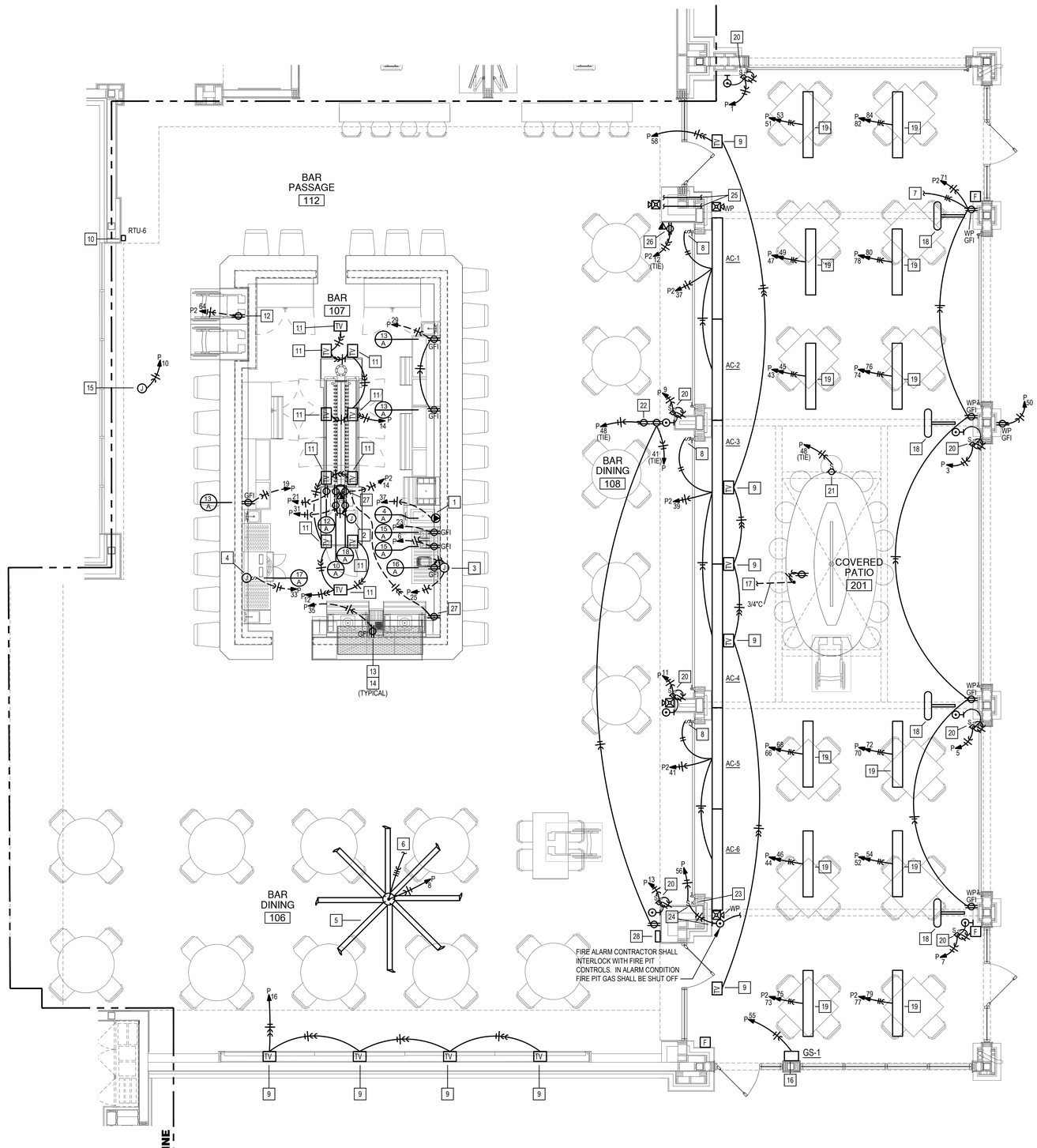
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.		
DRAWN BY: TPF/PH		
ISSUE		DATE
	ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

POWER PLAN

E202

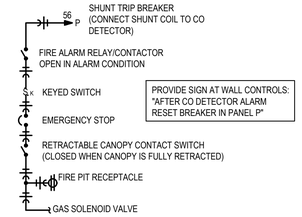


PARTIAL ELECTRICAL POWER PLAN

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

POWER PLAN NOTES:

1. PROVIDE CORD AND PLUG PER MANUFACTURERS INSTRUCTIONS.
2. JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING FOR MUSIC SYSTEM WIRING. VERIFY EXACT REQUIREMENTS AND LOCATIONS WITH OWNER.
3. PROVIDE RECEPTACLE IN BLENDER STATION AND CONNECT TO J-BOX IN BAR DIE WALL.
4. GLASS WASHER LEASED BY OWNER (VERIFY ELECTRICAL REQUIREMENTS PRIOR TO WORK).
5. CONTRACTOR SHALL PROVIDE AND INSTALL 10' BIG ASS FAN E10 WITH BIG ASS FAN LOGO AND 36" EXTENSION ROD OPTION. SILVER BODY WITH YELLOW TRIM, REFER TO ARCHITECTURAL FOR MOUNTING SUPPORT. INSTALL COMPLETE PER MANUFACTURER INSTRUCTIONS.
6. CONNECTION BETWEEN PATIO DINING FAN AND FAN CONTROLLER LOCATED IN THE OFFICE. SEE NOTE 13 ON SHEET E101.
7. FAN RECEPTACLES TO BE CONTROLLED BY MANUAL SWITCH LOCATED IN OFFICE. COORDINATE LOCATION WITH ARCHITECT.
8. LOCATE AC DOOR FRAME SWITCHES, PROVIDED WITH AC, SUCH THAT BOTH OPERATE WHEN OVERHEAD DOOR IS OPEN. COORDINATE WITH GC. WIRING TO AIR CURTAIN SHALL BE CONCEALED IN WALL, NOT EXPOSED.
9. REFER TO ARCHITECTURAL PLANS FOR TV RECEPTACLE AND TV BOX LOCATION. ALL CONDUCTORS SHALL BE SOLID #10 FOR TVs.
10. REMOTE TEST STATION FOR RTU DUCT DETECTOR. COORDINATE REQUIREMENTS WITH MECHANICAL CONTRACTOR.
11. MOUNT POWER AND DATA FOR TVs SUSPENDED DOWN FROM CEILING. REFER TO ARCHITECTURAL ELEVATIONS (APPROXIMATELY 6'-0" AFF). ALL CONDUCTORS SHALL BE SOLID #10 FOR TVs.
12. RECEPTACLE FOR BAR TOP LIFT. REFER TO MANUFACTURER INSTRUCTIONS FOR ADDITIONAL INFORMATION.
13. ELECTRICAL CONTRACTOR TO COORDINATE WITH BAR FABRICATOR AND MAKE SURE ALL ELECTRICAL STUB UPS ARE LOCATED WITHIN BAR DIE.
14. INSTALL ALL OUTLET BOXES HORIZONTALLY AS TIGHT AS POSSIBLE TO UNDERSIDE OF COUNTER IN DIE WALL OF BAR, UNLESS NOTED OTHERWISE IN ELECTRICAL OR KITCHEN EQUIPMENT DRAWINGS.
15. J-BOX WITH DISCONNECTING MEANS FOR NEON SIGNAGE. CONNECT COMPLETE. VERIFY ROUGH-IN LOCATION. PROVIDE DIMMER FOR NEON, PROVIDE RCOCX INC. D-20 DIMMER SWITCH FOR NEON LIGHTING LOCATED INSIDE OF SIGNAGE. COORDINATE WITH SIGN VENDOR. SET DIMMER LEVEL PER OWNER DIRECTION. DISCONNECT SWITCH FOR SERVICE TO BE LOCATED ON TOP OF THE SIGN TO BE NOT VISIBLE TO CUSTOMERS.
16. CONNECT GAS DETECTION SYSTEM (REFER TO MECHANICAL PLANS) TO FIRE PIT SHUNT TRIP. PROVIDE SIGN AT WALL CONTROLS. REFER TO FIRE PIT CONTROLS DIAGRAM.
17. PROVIDE 3/4"C UNDER PATIO TO FIRE PIT CONTROL PANEL. (SEE NOTE 28 ON THIS SHEET FOR LOCATION.) CONNECT TO FIRE PIT AS REQUIRED.
18. PROVIDE AIREYE 20" WITH WALL MOUNTING BRACKET AND VARISPEED CONTROLLER FOR EACH FAN. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION. REFER TO ADDITIONAL DOCUMENTATION FOR ADDITIONAL DETAILS.
19. PROVIDE 6KW BROMIC RADIANT HEATER. PROVIDE 6 TWO-CHANNEL WIRELESS DIMMING CONTROLLERS LOCATED IN PANTRY 119. REFER TO ARCHITECTURAL DRAWINGS FOR HEATER LOCATION. REFER TO KEYNOTE 23 ON SHEET E201. WIRE TRANSMITTER TO BE LOCATED ABOVE CEILING IN PANTRY 119.
20. PROVIDE DISCONNECT FOR OVERHEAD DOOR CONTROLLER. MOUNT CONTROLS ON WALL AND CONNECT TO CONTROLLER.
21. PROVIDE POWER FOR MOTORIZED RETRACTABLE SHADE AND CONTROL SYSTEMS. PROVIDE SWITCH/SENSOR FOR CONTROL OF FIRE PIT GAS CONTROL SUCH THAT GAS CAN ONLY BE ACTIVATED WHEN CANOPY IS FULLY RETRACTED. REFER TO FIRE PIT CONTROLS DIAGRAM. COORDINATE REQUIREMENTS WITH CANOPY MANUFACTURER.
22. RECEPTACLE FOR CANOPY CONTROLS GATEWAY. COORDINATE MOUNTING LOCATION WITH GATEWAY SHELF.
23. PROVIDE PERMANENT LABEL ON ALL CONTROL SWITCHES.
24. RED PUSH BUTTON EMERGENCY SHUT-OFF AND KEYED SWITCH (PROVIDED WITH FIRE PIT) MOUNTED AT 48" AFF FOR FIRE PIT CONTROL. ROUTE 3/4"C TO CONTROL PANEL IN UTILITY ROOM AND CONNECT PER MANUFACTURER'S INSTRUCTIONS. SEE NOTE 21 ON SHEET E201 FOR CONTROL PANEL LOCATION. EMERGENCY SHUT-OFF LOCATED ON EXTERIOR, AND KEYED SWITCH ON INTERIOR, OF BUILDING.
25. REFER TO ARCHITECTURAL PLANS FOR CONDUIT ROUTING.
26. DUPLEX OR FOURPLEX RECEPTACLE AS INDICATED FOR POS/PRINTER/MONITOR. REFER TO SHEET E501 & E502 FOR MOUNTING LOCATION.
27. DUPLEX RECEPTACLE AS INDICATED FOR PRINTER/POS STATION. REFER TO SHEET E501 FOR MOUNTING LOCATION.
28. PATIO GAS FIRE PIT CONTROL PANEL. PROVIDE LOW VOLTAGE WIRING TO SAFETY PIPE TRAIN. PROVIDE CONDUIT AND LOW VOLTAGE WIRING TO FIRE PIT. POWER CIRCUIT FROM KILL SWITCH AND KEY SWITCH ON PATIO. SEE SHEET E203 FOR FIRE PIT CONTROL EQUIPMENT AND CIRCUITRY. REFER TO MANUFACTURER INSTALLATION INSTRUCTIONS.



FIRE PIT CONTROLS DIAGRAM

SCALE: NTS

KEY PLAN

SCALE: NTS

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SH ASSOCIATES
SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, combined and arrangements thereof, furnished by the Engineer pursuant to this agreement are, and shall remain, the property of the Engineer. The drawings, specifications, ideas and designs, combine the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, in whole or in part, without the prior written consent of the Engineer is strictly prohibited. © 2003 BC Engineers, Inc.

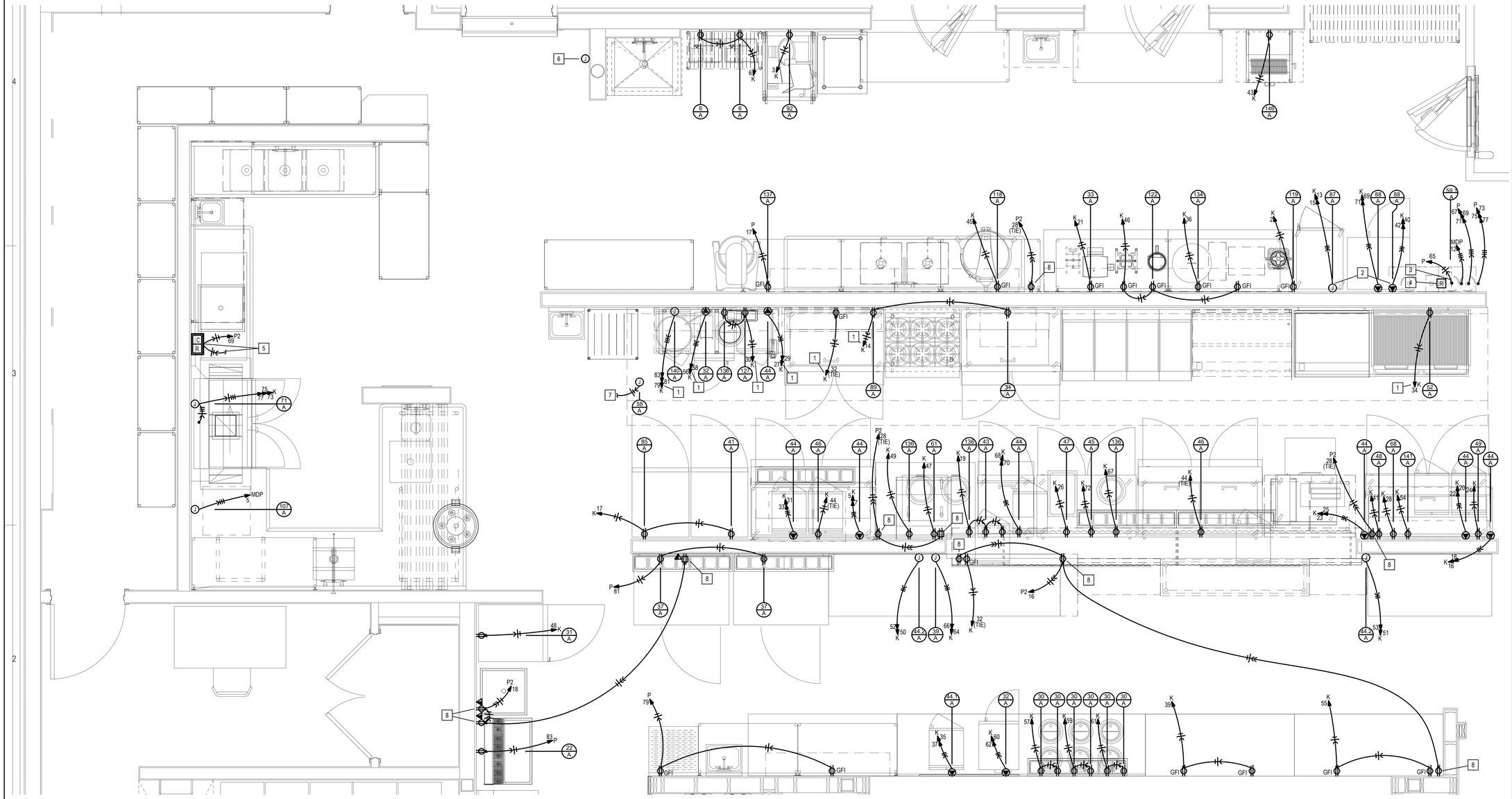
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

POWER PLAN

E203



ENLARGED ELECTRICAL PLAN

NORTH

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

REFER TO KITCHEN EQUIPMENT DRAWINGS FOR EXACT MOUNTING HEIGHT, LOCATION, AND REQUIREMENTS FOR DEVICES FOR KITCHEN EQUIPMENT. REFERENCE ITEMS THAT REQUIRE CONTRACTOR TO PROVIDE CORD & PLUG, ETC.

ALL DUPLEX RECEPTACLES IN BAR, PATIO BAR, KITCHEN, AND PANTRY TO BE GFI PER NEC 210.8 (B)(3)

ALL GFI OUTLETS SHALL HAVE DEDICATED NEUTRAL TO PREVENT NUISANCE TRIPS.

POWER PLAN NOTES:

1. ROUTE CIRCUIT TO PANEL INDICATED VIA SHUNT TRIP CONTROL CONTACTOR. SEE DETAIL ON SHEET E301.
2. PROVIDE OUTLET, CORD, AND PLUG PER MANUFACTURER REQUIREMENTS.
3. HOOD CONTROL PACKAGE ON END OF HOOD. MAKE-UP AIR UNIT AND EXHAUST FANS SHALL BE ROUTED TO STARTERS IN HOOD PACKAGE. PROVIDE CIRCUITS FROM PANELS AS INDICATED FOR HOOD LIGHTS, CONTROLS, AND FANS. REFER TO MECHANICAL HOOD PACKAGE WIRING DIAGRAMS FOR ADDITIONAL WORK.
4. PROVIDE RELAY AND INTERLOCK ANSUL SYSTEM WITH FIRE ALARM PANEL AS REQUIRED BY FIRE MARSHALL.
5. CIRCUIT HOOD EXHAUST FAN THROUGH CONTRACTOR PROVIDED CONTACTOR. CONNECT CONTACTOR TO VENT FAN CONTROL KIT TIME DELAY RELAY, SUPPLIED WITH DISHWASHER. PROVIDE NEMA 3 BOX TO CONTAIN BOTH THE CONTACTOR AND RELAY. CONNECT RELAY TO DISHWASHER PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFER TO INSTALLATION INSTRUCTIONS FOR WIRING DIAGRAM AND ADDITIONAL INFORMATION.
6. J-BOX WITH 3/4" CONDUIT TO ABOVE CEILING FOR FIRE ANSUL PULL STATION.
7. CONNECT TO HOOD CONTROL PANEL. REFER TO HOOD WIRING DIAGRAMS.
8. DUPLEX OR FOURPLEX RECEPTACLE AS INDICATED FOR POS/PRINTER/MONITOR. REFER TO SHEETS E501 & E502 FOR MOUNTING LOCATION.

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009030629

This drawing has been prepared by the Engineer or under his supervision. This drawing is protected as to the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs contained herein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use, or publication by any method, in whole or part, without the written permission of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

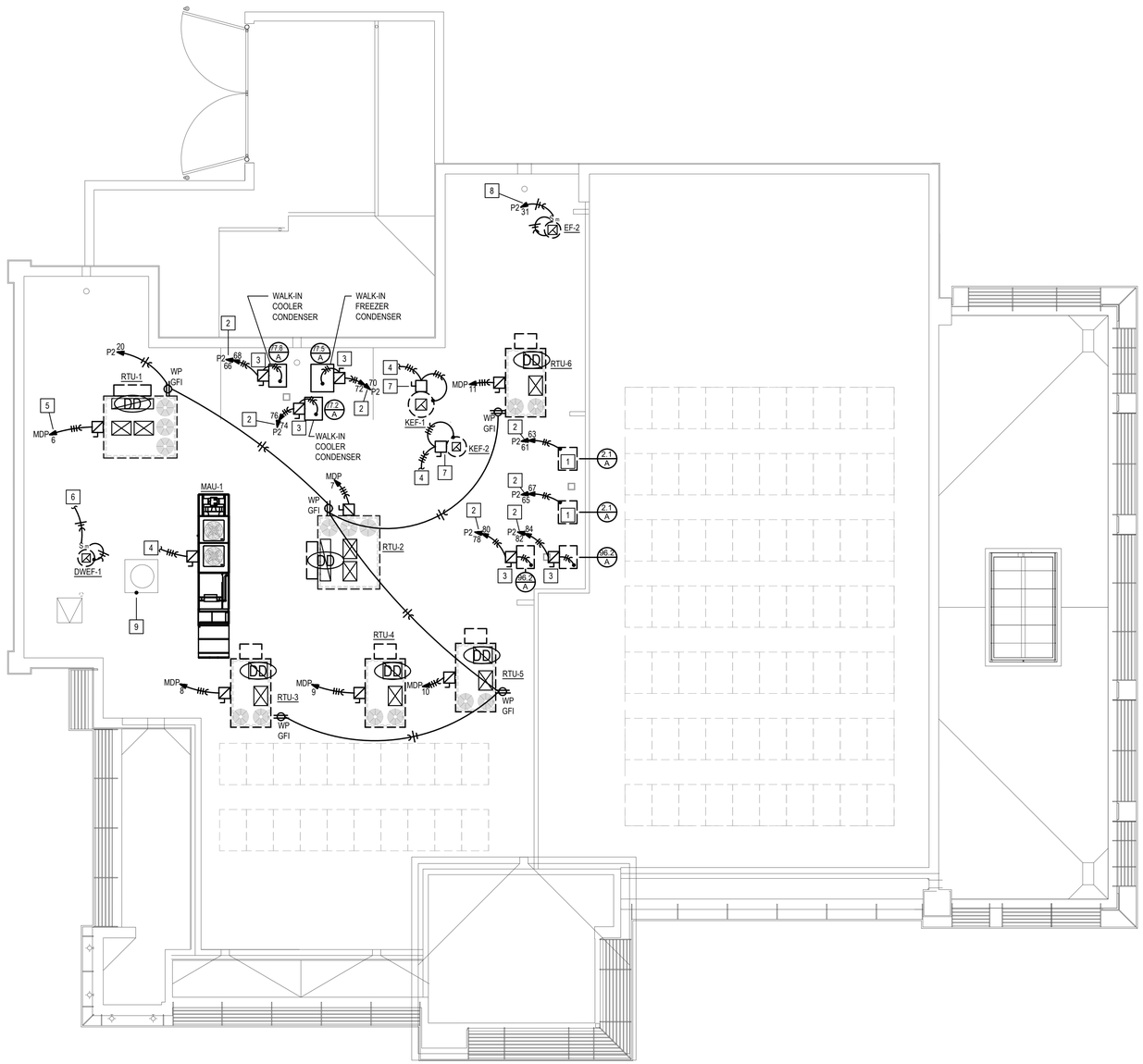
JOB NO.	
DRAWN BY:	TPF/PH

ISSUE		DATE
	ISSUE FOR PERMIT REVIEW	10-08-2025

SHEET 24x36

ENLARGED POWER PLAN

E204



ROOF POWER PLAN NOTES:

1. PROVIDE CONTROL WIRING BETWEEN CONDENSING UNIT AND BEER GLYCOL UNIT. INSTALL COMPLETE PER MANUFACTURER REQUIREMENTS. UNITS PROVIDED WITH INTEGRAL DISCONNECT. PROVIDE BUCK BOOST TRANSFORMER TO PROVIDE 240V REQUIRED.
2. ELECTRICAL SHALL BE ROUTED THROUGH PITCH PANS AT ROOF. REFER TO ARCH ROOF PLAN FOR LOCATIONS.
3. PROVIDE CONTROL WIRING BETWEEN CONDENSING UNIT AND WALK-IN UNIT. INSTALL COMPLETE PER MANUFACTURER REQUIREMENTS.
4. ROUTE CIRCUIT DOWN TO STARTER IN HOOD CONTROL PANEL. SEE SHEET E204, PLAN NOTE 3. REFER TO MECHANICAL HOOD PLANS FOR WIRING DIAGRAM.
5. ROUTE CIRCUIT TO PANEL INDICATED VIA 60A/3P CONTACTOR. INTERLOCK CONTACTOR WITH THE HOOD SUPPRESSION SYSTEM TO SHUT OFF POWER TO THE EQUIPMENT. MOUNT CONTACTORS IN A NEMA 12 ENCLOSURE WITH LABEL INDICATING EQUIPMENT SERVED. MOUNT UNITS ADJACENT TO HOODS, COORDINATE LOCATION WITH OWNER.
6. DOWN TO PILOT LIGHT SWITCH NEAR DISHWASHER, SEE SHEET E204, PLAN NOTE 5.
7. ELECTRICAL DISCONNECTS FOR ROOF MOUNTED EQUIPMENT SHALL BE MOUNTED CLEAR OF GREASE EXHAUST FANS. IF DISCONNECT IS NOT MOUNTED ON EQUIPMENT THEN DISCONNECT SHALL BE MOUNTED ON PARAPET WALL. REFER TO ARCHITECTURAL ROOF PLAN FOR LOCATION. DISCONNECTS SHALL NOT BE MOUNTED NEAR GREASE EXHAUST FANS.
8. RESTROOM EXHAUST FAN ON DEDICATED TIME CLOCK. ROUTE CIRCUIT TO PANEL INDICATED VIA DEDICATED TIME CLOCK FOR EXHAUST FAN LOCATED ADJACENT TO PANEL, REFER TO DETAIL ON SHEET E301.
9. 1" CONDUIT FOR SATELLITE THROUGH ROOF. REFER TO DETAIL ON A107 FOR INSTALLATION.

10/9/2025
STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030077
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as a instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, data and reports, constitute the original, copyrighted work of the Designer/Engineer. As reproduction, use or publication by any method, in whole or part, without the prior written consent of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

ROOF POWER PLAN

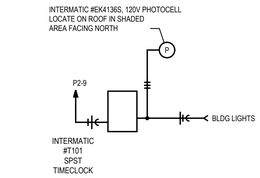
E205

LIGHT FIXTURE SCHEDULE

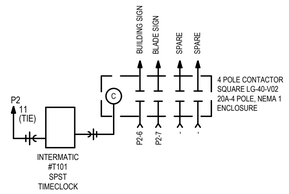
(EXACT FIXTURE MODEL NUMBERS ARE SUBJECT TO CHANGE IN NATIONAL PACKAGE - MODEL NUMBERS SHOWN FOR REFERENCE)

MARK NO.	MANUFACTURER & CATALOG NUMBER	VOLTS WATTS	COLOR TEMP LUMENS DIMMING	DESCRIPTION
L1	Q-TRAN LED VERS-04-SC-5.0- RD-WET-GZR- (X)P1(X)S1-(X)CON6- BK-CL2-CC-BK-(X) 0-10V LED DIMMING DRIVER	120 5 W/FT	RED LED 0-10V	LINEAR RED LIGHT MOUNTED BEHIND SCREEN, REFER TO ARCHITECTURAL FOR DETAILS. POWER SUPPLY MOUNTED ON BACK SIDE OF PARAPET ON ROOF. PROVIDE ALL NECESSARY COMPONENTS FOR COMPLETE INSTALLATION.
L2	COOPER XTOR8B	120 81	4000K	LED WALL MOUNT FIXTURE WITH FLAT LENS, BLACK FINISH, MOUNT AT 8'-0" AFF.
L3	ECLIPSE TY-10-WM-LEDD15-4K-UNV-EBU-BK-W-ARM3- WET	120 15	4000K 2074 LUMENS 58° BEAM	10" TALL X X7"Ø CYLINDER DOWNLIGHT, BLACK FINISH, REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING.
L3A	ECLIPSE TY-16-WM-LEDD15-4K-UNV-EBU-BK-W-ARM3- WET	120 15	4000K 2074 LUMENS 58° BEAM	16" TALL X X7"Ø CYLINDER DOWNLIGHT, BLACK FINISH, REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING.
L4	TECH LIGHTING 700WWNDB-LED	120 20	3000K 1680 LUMENS	EXTERIOR WALL SCONCE AT ENTRY
L5	METALUX 24FP6440C	120 59	4000K	2'x4' LED GRID TROFFER WITH SMOOTH FROSTED LENS. 6600 LUMEN PACKAGE, 80 CRI.
L5A	METALUX 24FP6440C W/ DF-24W-U FRAME KIT	120 59	4000K	2'x4' LED GRID TROFFER WITH SMOOTH FROSTED LENS. 6600 LUMEN PACKAGE, 80 CRI. PROVIDE WITH SPECIFIED 2'x4' FRAME KIT.
L6	LIGHTOLIER C2C-S-A-07-927-Z10U-B-C2CO-SP	120 11	2700K 700 LUMEN	2" ADJUSTABALE CYLINDER ACCENT LIGHT DIRECTED AT CENTER OF TABLE MOUNTED BOTTOM OF LIGHT EVEN WITH BOTTOM OF WOOD, BLACK FINISH
L7	QTL LIGHTING SC24/5.0-WET-B-BW-WH-CL2 WITH LALO-ST-SST-FR & QZ-288W-UNV-24V-PH/010-WH	120 5 W/FT	BLUE 113 LUMEN/FT	LED TAPE LIGHT WITH SURFACE-MOUNTED TRACK 0-10V DIMMABLE POWER SUPPLY, MOUNT ON UNDERSIDE OF BAR AND INSTALL COMPLETE.
L8	NORA NM2-2RG6027MPW	120 8	2700K 600 LUMEN	2" DIA. REC. ADJUSTABLE LED DOWNLIGHT, WHITE FINISH
L9	SPECTRUM LIGHTING IF03SMF-NC-PC-827-030-PR-D1-1-B1 PH-WF-GP-MW-MF	120 20.4	2700K 1347 LUMEN	3" SQUARE LED DOWNLIGHT, WHITE FINISH
L10	LIGHTOLIER C2C-S-A-10-927-Z10U-B-C2CO-SP	120 11	2700K 1000 LUMEN	2" ADJUSTABALE CYLINDER ACCENT LIGHT DIRECTED AT ART, BLACK FINISH
L11	CHLORIDE 45VLSC1GC	120 4	INCL	SURFACE TOP MOUNTED EMERGENCY EDGE-LIT SINGLE FACE EXIT LIGHT WITH GREEN LETTERS, CLEAR PANEL AND NI-CAD BATTERY
L11A	EXITRONIX GVLED-U-WH-EL90-R	120 1	INCL	COMBINATION EMERG/EXIT LIGHT WITH LED LAMPS, GREEN LETTERS ON WHITE BACKGROUND, UNIV. MOUNT AND HIGH CAP. BATTERY BACKUP TO FEED EXT. REMOTE (L13C)
L11B	EXITRONIX GVEX-1-WB-BL	120 5	INCL	EXTERIOR, WET LISTED, SINGLE FACE, LED EXIT LIGHT WITH GREEN LETTERS ON BLACK BACKGROUND. NICAD BATTERY W/ INTERNAL COLD WEATHER HEATER
L13	EXITRONIX NFT-B-R	120 13	INCL	EMERGENCY LIGHT WITH TWIN ADJUSTABLE HEADS AND SEALED LEAD CALCIUM BATTERY, BLACK FINISH, MOUNT AT 9'-6" AFF
L13A	EXITRONIX NFT-W-R	120 13	INCL	EMERGENCY LIGHT WITH TWIN ADJUSTABLE HEADS AND SEALED LEAD CALCIUM BATTERY, WHITE FINISH, MOUNT AT 7'-6" AFF
L13B	EXITRONIX NFT-B-R	120 14	INCL	EMERGENCY LIGHT WITH TWIN ADJUSTABLE HEADS AND SEALED LEAD CALCIUM BATTERY, BLACK FINISH AND HIGH CAP BATTERY BACKUP TO FEED EXT. REMOTE (L13C)
L13C	EXITRONIX MLED2-BL-WP	120 6	INC	REMOTE EXTERIOR TWIN LAMP EMERGENCY EGRESS LIGHT. POWER FROM INTERIOR EM LTG UNIT. BLACK FINISH. VERIFY MTG LOC W/ ARCH. DUAL HEAD
L18	LIGHTOLIER LTL08RNF927BKVA	120 9	INCL	TRACK LIGHT WITH LED 21" NARROW FLOOD LAMPS. LENGTH OF TRACK AND NUMBER OF HEADS AS SHOWN ON PLANS. COMPLETE W/ALL HARDWARE, 2700°K, ELECTRONIC LOW VOLTAGE DIMMER, BLACK FINISH
L19	Q-TRAN SW24/5.0-DRY-27 W/ POWER SUPPLIES	120 5 W/FT	2700K 0-10V	COVE LIGHT, LENGTH AS INDICATED ON PLANS. INSTALL COMPLETE WITH NECESSARY COMPONENTS INCLUDING 0-10V DIMMABLE POWER SUPPLY.
L20	HUBBARDTON FORGE 137462-10-84	120 14	1-419 LED REPLACEMENT 2700°K	DECORATIVE PENDANT, BLACK FINISH WITH SOFT GOLD ACCENT, MOUNT AT HEIGHT PER ARCHITECTURAL ELEVATIONS. OPAL BOTTOM DIFFUSER FOR USE IN KITCHEN
L21	BARTCO BSS110-(3)5-27-D-R-A	120 7.6 W/FT	2700K 0-10V	LINEAR ADJUSTABLE LIGHT MOUNTED ON TOP OF ARCHITECTURAL SHELF
L23	COOPER 4VT3-LD5-8-G-MVOLT-L840-CD1-U	120 67	4000K 8000 LUMENS	4' DAMP LOCATION, COLD WEATHER RATED LED LIGHT FIXTURE. 4000°K
L28	BK LIGHTING DS-0-SAP-12-11-B / RS12-60M / V28-LD-MR16 / MB3-SAP/BC4-SAP	120 10	INCL	SURFACE MOUNT BULLET SPOT LIGHT, BLUE LED LIGHT
L29	TOKISTAR LIGHTING LUM-50-BL W/ LDR6-60 POWER SUPPLY , TRI-MT TRACK , & (2) LC-1CH-MULTI DIMMER MODULES	120 57.6	INCL	ONE 20' LENGTH OF FLEXIBLE LED STRIP LIGHT. 2" LED SPACING, TRUE BLUE COLOR, MOUNTED IN SEMI-RIGID TRACK, DIRECTED UPWARD, HIDDEN WITH SOFFIT. PROVIDE 6VDC POWER SUPPLY AND ALL NECESSARY EQUIPMENT/WIRING FOR COMPLETE INSTALLATION. 0-10V DIMMING.
L30	ERCO A0030273-AC002194 WITH MONOPOINT MOUNT	120 36	3000K 3200LUM	LED SPOTLIGHT WITH LENS UNIT FRAMING, BLACK FINISH. FIXTURES TO BE MOUNTED ON SOFFIT AND DIRECTED AT ART DISPLAY. ADJUST FRAMING LENS TO FRAME ART
L31A	JAMES ALLAN AP52139BK	120 11	1-419 LED	10" DIAMETER BLACK DECORATIVE PENDANT, PROVIDE DIMMABLE LED EDISON LAMP.
L31B	JAMES ALLAN AP40119BK	120 11	1-419 LED	5" DIAMETER BLACK DECORATIVE PENDANT, PROVIDE DIMMABLE LED EDISON LAMP
L31C	JAMES ALLAN AP85403BK	120 11	1-419 LED	8" DIAMETER BLACK DECORATIVE PENDANT, PROVIDE DIMMABLE LED EDISON LAMP
L32	LIGHTOLOGY E10017-MPLT/E2610016	120 119	INCL	FLUTE MULTICOLOR LINEAR PENDANT, ELV DIMMING
L33	FINELITE HP-WG-6W-2D-XXX-B-830-SSA-120-SC-FC-10%-WB-SF-FE-L- FE-R-SW	120 4.6 W/FT	LED 3000K 327 LUM/FT	LED LINEAR WALL WASH, 0-10V DIMMING
L34	LUMINII LL42-HO-B-SL-NC-X W/ POWER SUPPLY AND MISC PARTS	24V 4.3W/FT	LED BLUE 0-10V	BLUE LED TAPE WITH ALUMINUM CHANNEL, END CAPS AND 0-10V DIMMING REMOTE POWER SUPPLY, LENGTH PER PLANS
PL-1	LUMARK TCRS-8-S-BK-7030 WITH SUPPORT PLATE	120 8	INCL	20 DEGREE ADJUSTABLE LED SPOT, 0-10V DIMMING, BLACK FINISH. INSTALL SURFACE MOUNT J-BOX CENTERED BETWEEN 2X10'S, INSTALL 6" LONG CONDUIT FROM J-BOX, KNUCKLE ON LUMINAIRE FITS 1/2" NPS. AIM FIXTURE CENTERED ON TABLES.
SA	WAC LIGHTING T24-OD1-##-30-BK	24 1.2W/LF	3000K 100 LUM/LF	WET RATED LED TAPE W/ REMOTE POWER SUPPLY. PROVIDE ALL ACCESSORIES REQUIRED FOR A COMPLETE INSTALL.
SF	TOKISTAR EXBK-18-V/WW-S14-C XFMR: T24-300	24 1.2W/LF	2400K 30LUM/LF	FESTOON LIGHTING, 18" LAMP SPACING, DECORATIVE CLEAR GLOBE WITH BLACK CABLE W/ NEMA 3R DIMMABLE 24V TRANSFORMER

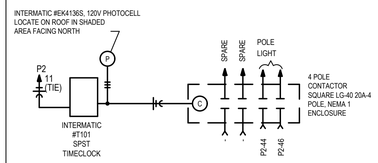
NOTE:
1. ALL LIGHT FIXTURES ARE OWNER FURNISHED, CONTRACTOR INSTALLED.
2. ALL SITE LIGHTS SHALL BE 3000K.
3. REFER TO SITE LIGHTING FIXTURE SCHEDULE ON SHEET E403 FOR ADDITIONAL FIXTURES.



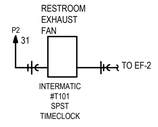
EXTERIOR BUILDING LIGHTS CONTROLS
SCALE: NONE



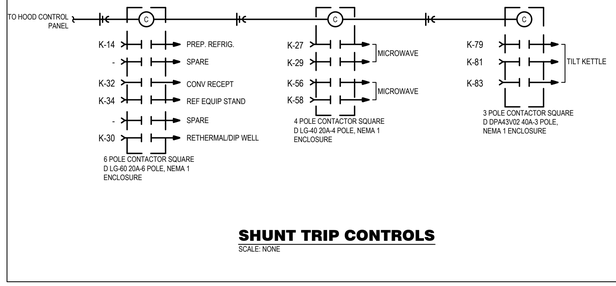
EXTERIOR BUILDING SIGNAGE CONTROLS
SCALE: NONE



EXTERIOR POLE LIGHTS CONTROLS
SCALE: NONE



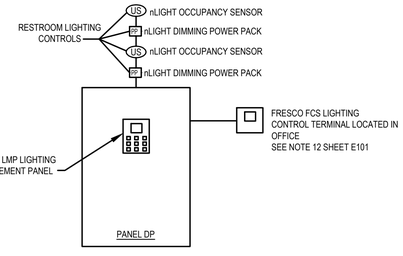
RESTROOM EXHAUST FAN CONTROLS
SCALE: NONE



SHUNT TRIP CONTROLS
SCALE: NONE

FRESCO LMP LIGHTING MANAGEMENT PANEL "DP"							
MODEL#		LMPL 2D 7L MVOLT 4ML 20A					
CKT NO.	MODULE# TYPE PART#	CONTROLLED AREA	FIXTURE MARK(S)	FIXTURE MARK(S)	CONTROLLED AREA	MODULE# TYPE PART#	CKT NO.
1	#1 DIMMING 0-10V LM4L MVOLT	BAR LIGHTS	L9	L10/L18	BAR DINING	#6 0-10V DIMMING LM4L MVOLT	21
2		BEER TAP ACCENT	L34	L19	DINING ACCENT		22
3		BAR COVE	L19	L21/L33	ENTRY SHELF & SOFFIT		23
4		BAR ACCENT	L7	L10	MOSS WALL		24
5	#2 DIMMING 0-10V LM4L MVOLT	PATIO	PL-1	L11X, L13X	NIGHT/EMERG/EXIT LIGHTS	#7 NON-CONTROLLED LM4L MVOLT	25
6		ENTRY ACCENT	L9	---	SPARE		26
7		RAIN SCREEN	L1	---	SPARE		27
8		PATIO AREA RAIN SCREEN	L1	---	SPARE		28
9	#3 DIMMING 0-10V LM4L MVOLT	PICKLE BALL COURT	S3/S3A	L5/L7/L19	PANTRY	#8 0-10V DIMMING LM4L MVOLT	29
10		BAR DINING	L6	L5	KITCHEN		30
11		FAN ACCENT	L29	L6	BAR DINING		31
12		GOLF SIMULATOR	L9	L6	BAR DINING		32
13	#4 DIMMING PHASE DIM. LM4D MVOLT	PANTRY	L8	SA	BOCCE COURT	#9 DIMMING PHASE DIM. LM4D MVOLT	33
14		SERVICE/RR VESTIBULE	L8	N/A	RESTROOM MIRRORS		34
15		SPARE	---	SF	FESTOON LIGHTS		35
16		SPARE	---	L30	ART DISPLAY		36
17	#5 DIMMING PHASE DIM. LM4D MVOLT	DINING DECORATIVE PENDANTS	L31A/B/C				
18		ENTRY PENDANT	L32				
19		KITCHEN PASS THRU	L20				
20		BEER COOLER ACCENT	L28				

1. CONTRACTOR SHALL CONTACT PREMIER LIGHTING FOR PROGRAMMING STARTUP & TRAINING OF DIMMING CONTROLS. INCLUDE COST IN BID.
2. MAX 1000W PER DIMMER SWITCH LEG, 2000W PER DIMMER



DIMMER SYSTEM DETAIL
SCALE: NONE

DETAIL NOTES:

1. INFORMATION SHOWN ON THIS DETAIL IS DIAGRAMMATIC ONLY. VERIFY EXACT PART NUMBER OF EACH COMPONENT AND ALL NECESSARY MATERIALS WITH MANUFACTURER PRIOR TO BID AS REQUIRED FOR AN OPERABLE DIMMING SYSTEM.
2. RUN SEPARATE NEUTRAL PER CIRCUIT TO THE DIMMER CABINET.
3. DIMMER PANEL 'DP' SHALL BE OWNER FURNISHED, CONTRACTOR INSTALLED. MOUNTING OF DIMMER PANEL AND ALL REQUIRED CONNECTIONS SHALL BE BY THE ELECTRICAL CONTRACTOR. NOTE: REFER TO LMP PANEL DP SCHEDULE THIS SHEET FOR PANEL DETAILS.
4. PROVIDE 0-10 VOLT CONTROL WIRING FROM 0-10 VOLT DIMMING FIXTURES TO DIMMER MODULE.
5. DIMMER PANEL TO BE FLUSH MOUNT.

10/9/2025
STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772
BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is prepared is built or not and is protected by the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs incorporated herein, as an unpublished work, whether or not any such work has been registered or otherwise protected. © 2025 BC Engineers, Inc.

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

ELECTRICAL DETAILS

E301

PANEL: MDP	VOLTS: 120/208V	PH: 3Ø	WIRE: 4W	LOCATION: STORAGE 132
BUS: 1200A	MAIN: 1200A MCB	IC: 65,000 RMS SYM AMPS	FEEDER: SEE RISER DIAGRAM	

CKT NO	DESCRIPTION	FRAME	POLE	TRIP	KVA LOAD	FEEDER SIZE:
1	PANEL K		3	400	142.7	4–500KCMIL, 1–#3G, 3–1/2"C
2	PANEL P		3	400	123.3	4–500KCMIL, 1–#3G, 3–1/2"C
3	PANEL P2		3	200	64.6	4–#3/0, 1–#6G, 2"C
4	DIMMER PANEL DP		3	100	7.9	4–#3, 1–#8G, 1–1/4"C
5	#107 – BOOSTER HEATER [HL]		3	100	27.0	3–#3, 1–#8G, 1–1/4"C
6	RTU–1		3	80	23.8	3–#4, 1–#8G, 1–1/4"C
7	RTU–2		3	80	23.8	3–#4, 1–#8G, 1–1/4"C
8	RTU–3		3	50	14.4	3–#6, 1–#10G, 1"C
9	RTU–4		3	50	14.4	3–#6, 1–#10G, 1"C
10	RTU–5		3	60	17.3	3–#6, 1–#10G, 1"C
11	RTU–6		3	60	17.3	3–#6, 1–#10G, 1"C
12	MAU–1		3	70	19.2	3–#4, 1–#8G, 1–1/4"C
13	BUSSED SPACE		3			
14	BUSSED SPACE		3			

NOTES:

[HL] – HANDLE LOCK

** – PROVIDE W/ ISOLATED GROUND BAR

TOTAL CONNECTED LOAD:	495.5 KVA
NEC DEMAND LOAD:	355.4 KVA
DEMAND AMPS @ 208 VOLT / 3Ø	986.51 AMPS

PANEL: P	VOLTS: 120/208V	PH: 3Ø	WIRE: 4W	LOCATION: STORAGE 132	MOUNTING: FLUSH
BUS: 400A	MAIN: 400A MLO	IC: 42,000 RMS SYM AMPS			FEEDER: SEE RISER DIAGRAM

CKT	DESCRIPTION	AMPS	POLE	WIRE	ØA	ØB	ØC	ØA	ØB	ØC	WIRE	POLE	AMPS	DESCRIPTION	CKT NO
1	OVERHEAD DOOR	30	1	8	1,920			500			12	1	20	RESTROOM FAUCETS	2
3	OVERHEAD DOOR	30	1	6		1,920			500		12	1	20	RESTROOM FAUCETS	4
5	OVERHEAD DOOR	30	1	6			1,920			1,200	10	1	20	#15 - DRINK MIXER	6
7	OVERHEAD DOOR	30	1	6	1,920			1,200			10	1	20	BAR DINING CEILING FAN	8
9	OVERHEAD DOOR	30	1	8		1,920			900		12	1	20	INTERIOR SIGNAGE	10
11	OVERHEAD DOOR	30	1	6			1,920			900	10	1	20	BAR TVs	12
13	OVERHEAD DOOR	30	1	6	1,920			900			12	1	20	BAR TVs	14
15	OFFICE PRINTER	20	1	12		1,000			720		10	1	20	BAR DINING TVs	16
17	#137 - 30 QT FLOOR MIXER	20	1	12			1,920			500	12	1	20	HOSTS RECEPTS	18
19	#13 - FROSTERS	20	1	12	456			956			12	1	20	BACK OF HOUSE LIGHTING	20
21	#12 - BACK BAR COOLER [GF]	20	1	12		840			1,200		12	1	20	AIR CURTAIN / DOOR CHIME	22
23	#15 - DRINK MIXER	20	1	10			1,200			1,500	10	1	20	HAND DRYER	24
25	#16 - BLENDER	20	1	8	1,800			1,500			10	1	20	HAND DRYER	26
27	CO2 PUMP	20	1	12		600			1,500		10	1	20	HAND DRYER	28
29	#13 - FROSTERS	20	1	10			912			1,500	10	1	20	HAND DRYER	30
31	#10, #18 - BAR WINE CLR/REFRIG [GF]	20	1	10	936			800			12	1	20	RTI OIL SYSTEM	32
33	#17 - GLASS WASHER [GF]	20	1	8		1,920			1,120		10	1	20	BEER CLR HEAT TRACE [GF]	34
35	COCKTAIL STATION	20	1	12			360			360	12	1	20	WATER SOFTENER	36
37	#4 - FROZEN DRINK MACHINE [GF]	30	1	6	3,120			500			12	1	20	SPRINKLER COMPRESSOR	38
39	NUCO2 UNIT	20	1	12		600			750		12	1	20	WATER HEATER CONTROL	40
41	CONVENIENCE RECEPT	20	1	10			1,080			250	12	1	20	RECIRC PUMP	42
	SECTION 2														
43	PATIO HEATER	40	2	6	3,000			3,000			6	2	40	PATIO HEATER	44
45						3,000			3,000						46
47	PATIO HEATER	40	2	6			3,000			300	12	1	20	RETRACTABLE CANOPY	48
49					3,000			180			12	1	20	PATIO CONVENIENCE RECEPT	50
51	PATIO HEATER	40	2	6		3,000			3,000		6	2	40	PATIO HEATER	52
53							3,000			3,000					54
55	GAS DETECTION SYSTEM [HL]	20	1	12	400			800			10	1	20	PATIO FIREPLACE	56
57	SPARE	20	1						900		10	1	20	PATIO TVs	58
59	SPARE	20	1							400	12	1	20	REVOLVING DOOR	60
61	SPARE	20	1									1	20	SPARE	62
63	SPARE	20	1									1	20	SPARE	64
65	HOOD CONTROL PANEL	20	1	12			500			3,000	6	2	40	PATIO HEATER	66
67					2,000			3,000							68
69	HOOD EXHAUST FAN KEF-1	25	3	10		2,000			3,000		6	2	40	PATIO HEATER	70
71							2,000			3,000					72
73					900			3,000			6	2	40	PATIO HEATER	74
75	HOOD EXHAUST FAN KEF-2	15	3	12		900			3,000						76
77							900			3,000	6	2	40	PATIO HEATER	78
79	WORK TOP RECEPTS	20	1	12	360			3,000							80
81	#37 - PREP REFRIG [GF]	20	1	12		720			3,000		6	2	40	PATIO HEATER	82
83	#22 - SODA DISPENSER [GF]	20	1	12			600			3,000					84

NOTES:	21,732	18,420	19,312	19,336	22,590	21,910
[GF]-GFCI BRKR 5mA, [HL]-HANDLE LOCK	41,068		41,010		41,222	

BREAKERS IN PANEL SHALL BE SERIES RATED WITH BRANCH BREAKER IN MDP. PROVIDE PERMANENT LABELING ON EQUIPMENT, "SERIES RATED SYSTEM"

TOTAL CONNECTED LOAD:	123,300 VA
NEC DEMAND LOAD:	118,075 VA
DEMAND AMPS @ 208 VOLT / 3Ø:	327.74 A

PANEL: P2	VOLTS: 120/208V	PH: 3Ø	WIRE: 4W	LOCATION: STORAGE 132	MOUNTING: FLUSH
BUS: 225A	MAIN: 200A MLO	IC: 42,000 RMS SYM AMPS			FEEDER: SEE RISER DIAGRAM

CKT	DESCRIPTION	AMPS	POLE	WIRE	ØA	ØB	ØC	ØA	ØB	ØC	WIRE	POLE	AMPS	DESCRIPTION	CKT NO
1	WALL HEATER EWH-1	20	1	12	1,000			360			12	1	20	SERVICE STATION	2
3	WALL HEATER EWH-2	20	1	12		1,000			516		12	1	20	SERVICE COUNTER RECEPTS	4
5	SPARE	20	1							1,200	10	1	20	BUILDING SIGN	6
7	BLADE SIGN	20	1	12	1,200							1	20	SPARE	8
9	EXT BLDG LTG / TIME CLOCK	20	1	12		397						1	20	SPARE	10
11	EXT SITE LTG TIME CLOCK	20	1	12			100			360	12	1	20	DINING ROOM PRINTERS [GF]	12
13	GOLF SIMULATOR	20	1	8	1,332			540			12	1	20	BAR POS [GF]	14
15	GOLF SIMULATOR	20	1	8		1,332			540		12	1	20	PANTRY PRINTER/MONITOR [GF]	16
17	GOLF SIMULATOR	20	1	8			1,332			540	12	1	20	EXPRESS TO GO POS [GF]	18
19	GOLF SIMULATOR	20	1	8	1,332			900			12	1	20	ROOF CONV RECEPTS	20
21	RESTROOM LIGHTING	20	1	12		180			1,200		10	1	20	MIXED DRINK TANKS	22
23	SPARE	20	1									1	20	SPARE	24
25	SPARE	20	1									1	20	SPARE	26
27	ROLLING WINDOW SHADES	20	1	12		360			900		12	1	20	KITCHEN MONITORS [GF]	28
29	CONVENIENCE RECEPTS	20	1	12			590			540	12	1	20	MGR DESK	30
31	EF-2	20	1	12	400			540			12	1	20	OFFICE RECEPTS	32
33	EF-3	20	1	10		1,750			360		12	1	20	TELEPHONE	34
35	IT CLOSET EF-4	20	1	12			1,750			720	12	1	20	DATA CLOSET	36
37	AIR CURTAINS AC-1 & AC-2	20	1	8	1,152			720			12	1	20	DATA CLOSET	38
39	AIR CURTAINS AC-3 & AC-4	20	1	8		1,248			720		12	1	20	SECURITY [HL]	40
41	AIR CURTAINS AC-5 & AC-6	20	1	8			1,152			400	12	1	20	FACP [HL]	42
	SECTION 2														
43	SPARE	20	1					984			8	2	20	SITE LIGHTING	44
45	SPARE	20	1						984						46
47	SPARE	20	1									1	20	SPARE	48
49	SPARE	20	1									1	20	SPARE	50
51	SPARE	20	1									1	20	SPARE	52
53	SPARE	20	1									1	20	SPARE	54
55	SPARE	20	1									1	20	SPARE	56
57	SPARE	20	1									1	20	SPARE	58
59	SPARE	20	1									1	20	SPARE	60
61	#2.1 - GLYCOL UNIT	20	2	12	1,394							1	20	SPARE	62
63						1,394			600		12	1	20	BAR TOP LIFT [GF]	64
65	#2.1 - GLYCOL UNIT	20	2	12			1,394			1,186	12	2	20	#77.8 - WALK-IN COOLER	66
67					1,394			1,186						CONDENSER	68
69	DWEF-1	20	1	12		1,176			1,986		8	2	35	#77.5 - WALK-IN FREEZER	70
71	PATIO FANS	20	1	8			1,200			1,986				CONDENSER	72
73	PATIO HEATER	40	2	6	3,000			728			12	2	15	#77.2 - WALK-IN COOLER	74
75						3,000			728					CONDENSER	76
77	PATIO HEATER	40	2	6			3,000			1,394	12	2	20	#96.2 - WALK-IN BEER COOLER	78
79					3,000			1,394						CONDENSER	80
81	SPARE	20	1						1,394		12	2	20	#96.2 - WALK-IN BEER COOLER	82
83	SPARE	20	1							1,394				CONDENSER	84

NOTES:	15,204	11,837	10,518	7,352	9,928	9,720
[HL]-HANDLE LOCK, [GF]-GFCI BRKR 5mA	22,556		21,765		20,238	

BREAKERS IN PANEL SHALL BE SERIES RATED WITH BRANCH BREAKER IN MDP. PROVIDE PERMANENT LABELING ON EQUIPMENT, "SERIES RATED SYSTEM"

TOTAL CONNECTED LOAD:	64,558 VA
NEC DEMAND LOAD:	56,457 VA
DEMAND AMPS @ 208 VOLT / 3Ø:	156.71 A

PANEL: K	VOLTS: 120/208V	PH: 3Ø	WIRE: 4W	LOCATION: STORAGE 132	MOUNTING: FLUSH
BUS: 400A	MAIN: 400A MLO	IC: 42,000 RMS SYM AMPS			FEEDER: SEE RISER DIAGRAM

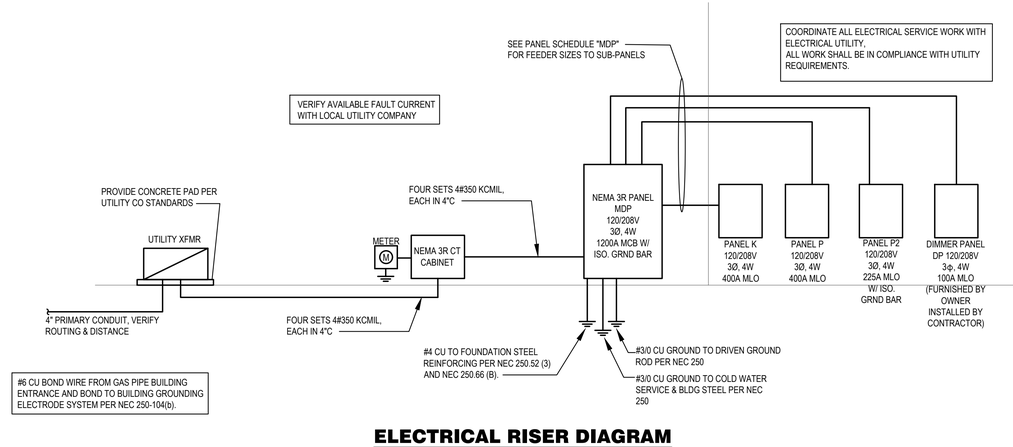
CKT	DESCRIPTION	AMPS	POLE	WIRE	ØA	ØB	ØC	ØA	ØB	ØC	WIRE	POLE	AMPS	DESCRIPTION	CKT NO
1	#27 - COFFEE BREWER [GF]	20	1	12	1,680			1,800			10	1	20	#119 - BLENDER	2
3	#92 - SLICER [GF]	20	1	12		300			696		12	1	15	WALK-IN BEER COOLER	4
5	#44 - MICROWAVE OVEN [GF]	20	2	12			1,695			1,488	12	1	20	#6 - CARBONATORS [GF]	6
7					1,695			192			12	1	15	#77.6 - WALK-IN COOLER	8
9	#77.4 - WALK-IN FREEZER EVAP	20	2	12		1,123			192		12	1	15	#77 - WALK-IN COOLER	10
11							1,123			400	12	1	20	#77.9 - WALK-IN HEAT TRACE [GF]	12
13	#87 - COOK & HOLD/SMOKER [GF]	40	2	8	3,266			720			12	1	20	#34 & #89 - PREP REFRIGS [GF]	14
15						3,266			1,695		12	2	20	#44 - MICROWAVE OVEN [GF]	16
17	#41 & #85 - REFRIG/FREEZER [GF]	20	1	12			1,680			1,695					18
19	#43 & #136 - COOLER/RETHERM [GF]	20	1	12	1,260			1,695			12	2	20	#44 - MICROWAVE OVEN [GF]	20
21	#33 - FOOD PROCESSOR	20	1	12		1,440			1,695						22
23	#44 - MICROWAVE OVEN [GF]	20	2	12			1,695			480	12	1	20	#49 - SANDWICH/PREP REFRIG [GF]	24
25					1,695			1,200			12	1	20	#47 - FOOD WARMER [GF]	26
27	#44 - MICROWAVE OVEN [GF]	20	2	12		1,695			456		12	1	20	#68 - DRAWER WARMER [GF]	28
29							1,695			1,200	12	1	20	#136 - RETHERMAL/DIP WELL [GF]	30
31	#44 - MICROWAVE OVEN [GF]	20	2	12	1,695			360			12	1	20	CONV RECEPTS	32
33						1,695			360		12	1	20	#52 - REFRIG EQUIP STAND [GF]	34
35	#44.1 - MICROWAVE OVEN [GF]	20	2	12			1,695			1,550	12	1	20	#134 - RICE COOKER	36
37					1,695			1,200			12	1	20	OIL CONTAINMENT SYS [GF]	38
39	WORK TOP RECEPTS	20	1	12		360			2,808		8	2	35	#88 - DOUBLE-STACK OVEN [GF]	40
41	#48 - FRY WARMER [GF]	20	1	12			600			2,808					42
	SECTION 2														
43	#146 - BREAD SLICER [GF]	20	1	12	1,440			960			12	1	20	#46 - PREP REFRIGS [GF]	44
45	#118 - SALAD DRYER	20	1	12		324			876		12	1	20	#122 - JUICER / WT RECEPTS	46
47	#61 - CHIP WARMER [GF]	20	1	12			840			600	12	1	20	#31 - REACH-IN REFRIG [GF]	48
49	#136 - RETHERMALIZER [GF]	20	1	12	804			1,695			12	2	20	#44.2 - MICROWAVE OVEN [GF]	50
51	#44.2 - MICROWAVE OVEN [GF]	20	2	12		1,695			1,695						52
53							1,695			1,500	10	1	20	#141 - VERTICAL TOASTER [GF]	54
55	WORK TOP RECEPTS	20	1	12	360			1,664			12	2	20	#32 - MICROWAVE OVEN [GF]	56
57	#30 - RETHERMALIZERS [GF]	20	1	10		1,608			1,664						58
59	#30 - RETHERMALIZERS [GF]	20	1	10			1,608			1,664	12	2	20	#32 - MICROWAVE OVEN [GF]	60
61	#30 - RETHERMALIZERS [GF]	20	1	10	1,608			1,664							62
63	#28 - TEA BREWER [GF]	20	1	10		1,920			2,496		10	2	30	#39 - HEAT LAMP	64
65	#77.3 - WALK-IN FREEZER	20	1	12			1,200			2,496					66
67	#136 - RETHERMALIZERS [GF]	20	1	12	804			1,695			12	2	20	#44 - MICROWAVE OVEN [GF]	68
69	#88 - DOUBLE-STACK OVEN [GF]	35	2	8		2,808			1,695						70
71							2,808			432	12	1	20	#45 - UNDERCOUNTER FREEZER [GF]	72
73	DISHWASHER [GF] [HL]	80	3	4	7,200			1,548			12	3	20	#86 - ICE MAKER [HL]	74
75						7,200			1,548						76
77							7,200			1,548					78
79	#140 - TILT KETTLE [HL]	40	3	8	3,264			1,548			12	3	20	#86 - ICE MAKER [HL]	80
81						3,264			1,548						82
83							3,264			1,548					84

NOTES:	28,466	28,698	28,798	17,941	19,424	19,409
[GF]-GFCI BRKR 5mA, [HL]-HANDLE LOCK	46,407		48,122		48,207	

BREAKERS IN PANEL SHALL BE SERIES RATED WITH BRANCH BREAKER IN MDP. PROVIDE PERMANENT LABELING ON EQUIPMENT, "SERIES RATED SYSTEM"

TOTAL CONNECTED LOAD:	142,736 VA
NEC DEMAND LOAD:	103,182 VA
DEMAND AMPS @ 208 VOLT / 3Ø:	286.40 A

GFI BREAKERS INDICATED FOR NON-ACCESSIBLE OUTLETS BEHIND EQUIPMENT IN KITCHEN/SERVING AREAS. GFI RECEPTACLES SHALL BE PROVIDED FOR ACCESSIBLE RECEPTACLES AS INDICATED IN GENERAL NOTES BUT NOT NECESSARILY INDICATED ON PLANS.



ELECTRICAL RISER DIAGRAM

SCALE: NONE

10/9/2025
STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. It is to be returned to the Engineer upon request. It is protected by the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in this drawing are the property of the Engineer and shall not be used in whole or in part for any purpose whatsoever without the written permission of the Engineer. Any reproduction, sale or transfer, constitutes the original, copyrighted work of the Designer/Engineer. Any reproduction, sale or transfer without the written permission of the Designer/Engineer is a violation of the Act and is strictly prohibited. © 2003 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

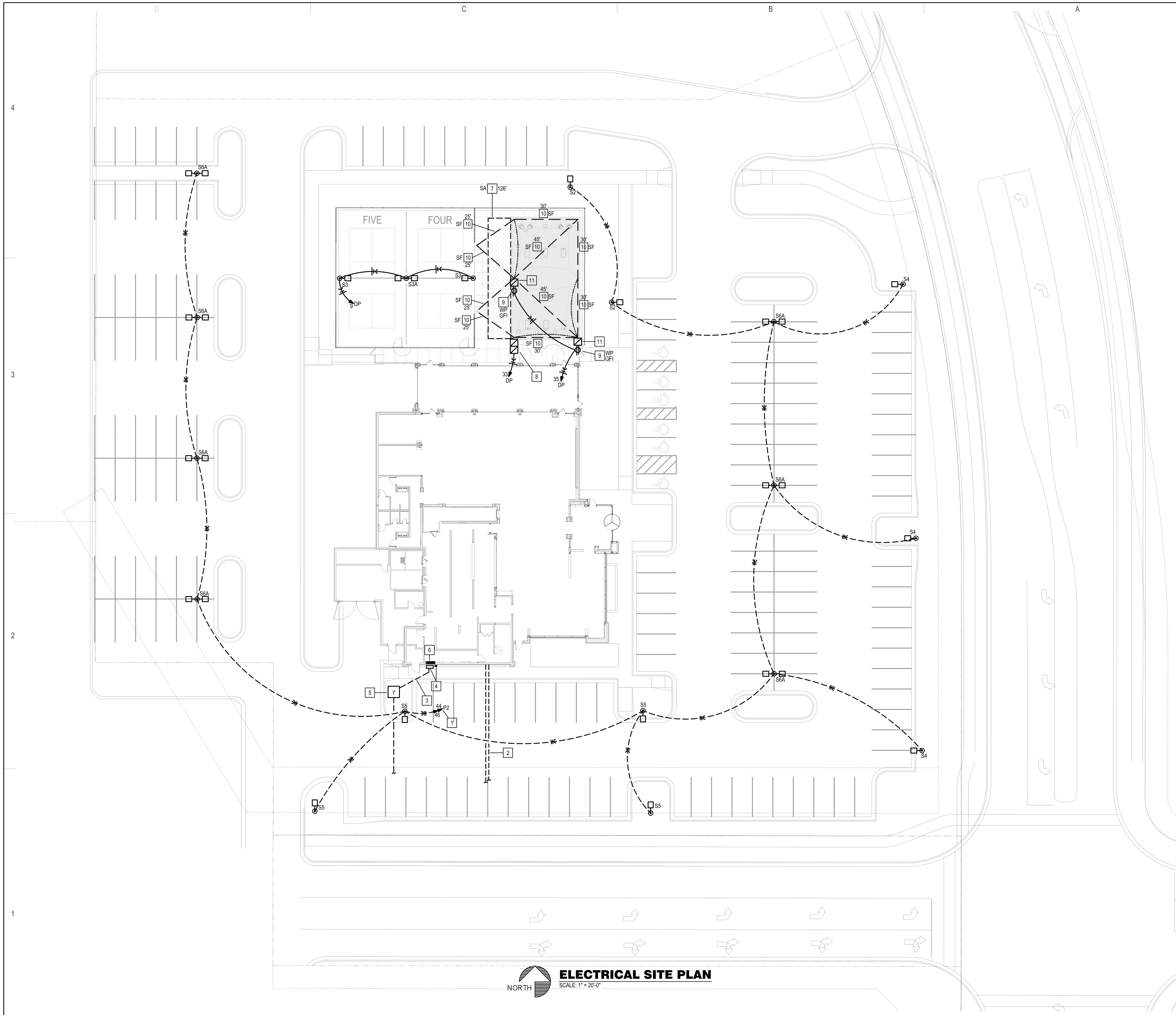
JOB NO.
DRAWN BY: TPF/PH

ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

ELECTRICAL SCHEDULES

E302



ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

ELECTRICAL SITE NOTES:

1. ROUTE CIRCUIT TO PANEL INDICATED VIA TIME CLOCK CONTROLLED LIGHTING CONTACTOR SEE DETAIL ON SHEET E301.
2. PROVIDE (1) UNDERGROUND TELEPHONE 2" CONDUIT AND (2) UNDERGROUND CABLE TV 2" CONDUITS FROM PROPERTY LINE TO STUB UP 12" AFF AT TELEPHONE BACKBOARD. COORDINATE EXACT LOCATION AND ROUTING WITH TELEPHONE SERVICE PROVIDER AND CABLE TV PROVIDER. REFER TO CIVIL DRAWINGS FOR ADDITIONAL DETAILS.
3. UNDERGROUND ELECTRICAL SECONDARY FROM TRANSFORMER TO MAIN MDP. SEE RISER DIAGRAM.
4. METER AND CT CABINET. COORDINATE REQUIREMENTS WITH UTILITY.
5. PROPOSED UTILITY TRANSFORMER LOCATION. COORDINATE LOCATION AND REQUIREMENTS WITH UTILITY.
6. MDP, REFER TO RISER DIAGRAM.
7. TAPE LIGHT MOUNTED IN GROOVE OF PERIMETER TRIM USING MOUNTING CLIPS. REFER TO ARCHITECTURAL SHEETS FOR DETAIL. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR REQUIRED INSTALLATION ACCESSORIES.
8. TWO REMOTE POWER SUPPLIES FOR BOCCE COURT TAPE LIGHTING. MOUNT IN ACCESSIBLE LOCATION.
9. POLE MOUNTED WEATHERPROOF, GFCI RECEPTACLE FOR FESTOON LIGHTING.
10. ELECTRICAL CONTRACTOR TO PROVIDE 1/8" WIRE ROPE FOR SUPPORT OF FESTOON LIGHT FIXTURES. LENGTH INDICATED IS TOTAL LENGTH. PROVIDE SAG IN FIXTURE BASED OFF LENGTH.
11. NEMA 3R DIMMABLE POWER SUPPLY T24-300 FOR FESTOON LIGHTING. MOUNT HIGH ON POLE.

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030047
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR
Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SH ASSOCIATES
SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service by the Designer/Engineer and is intended for use on this project only. Pursuant to the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, including the overall form, arrangement and composition of spaces and elements appearing herein, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use, or disclosure of information contained herein without prior written consent of the Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

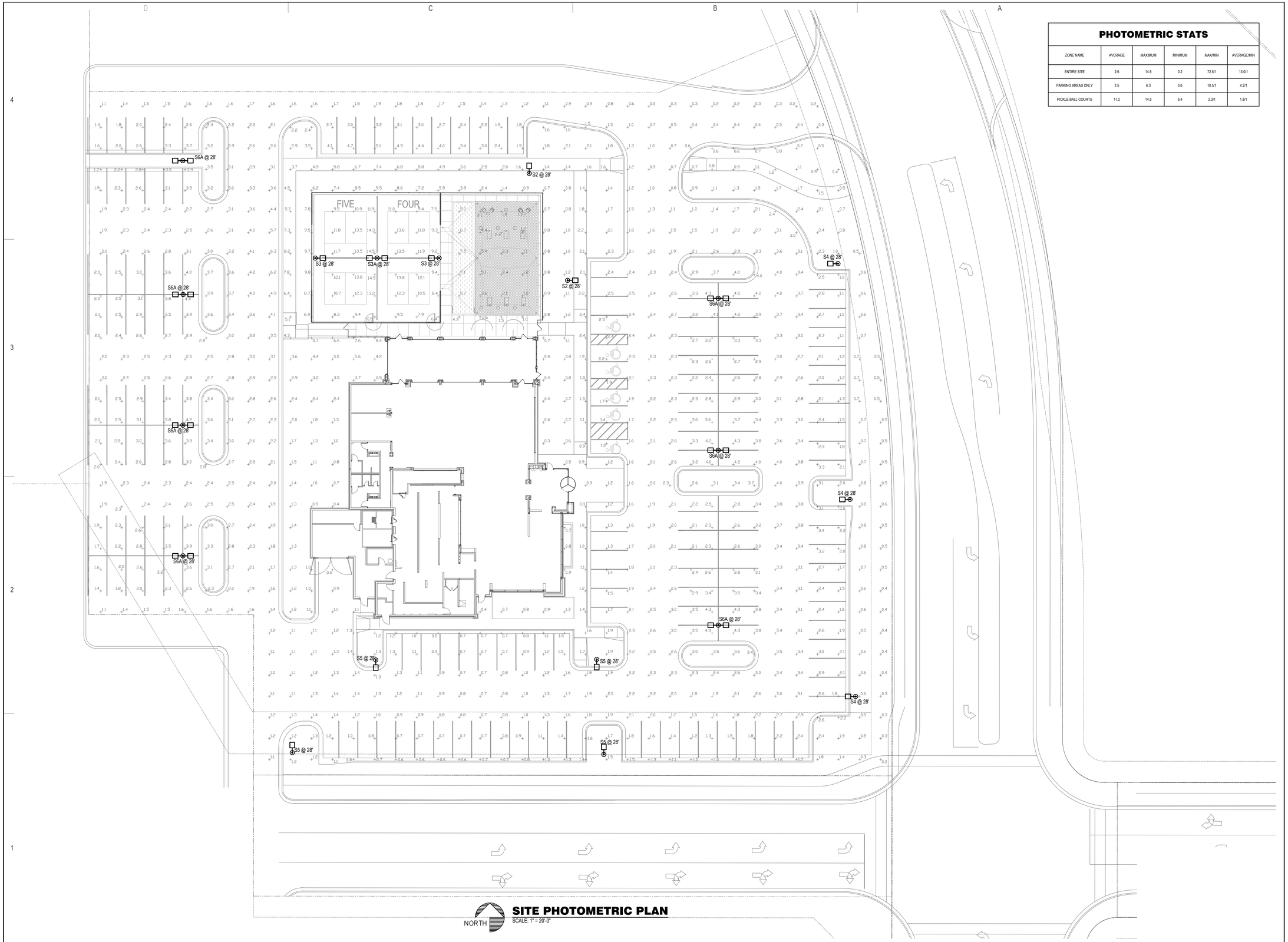
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

ELECTRICAL SITE PLAN

E401



PHOTOMETRIC STATS

ZONE NAME	AVERAGE	MAXIMUM	MINIMUM	MAX/MIN	AVERAGE/MIN
ENTIRE SITE	2.6	14.5	0.2	72.5/1	13.0/1
PARKING AREAS ONLY	2.5	6.3	0.6	10.5/1	4.2/1
PICKLE BALL COURTS	11.2	14.5	6.4	2.3/1	1.8/1

NORTH

SITE PHOTOMETRIC PLAN

SCALE: 1" = 20'-0"

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. It is unlawful to reuse this drawing without the permission of the Engineer. Pursuant to the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, details and other documents prepared by the Engineer, including all computer files containing information generated from these documents, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use, or display of such documents without the written permission of the Designer/Engineer is strictly prohibited. © 2025 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24X36

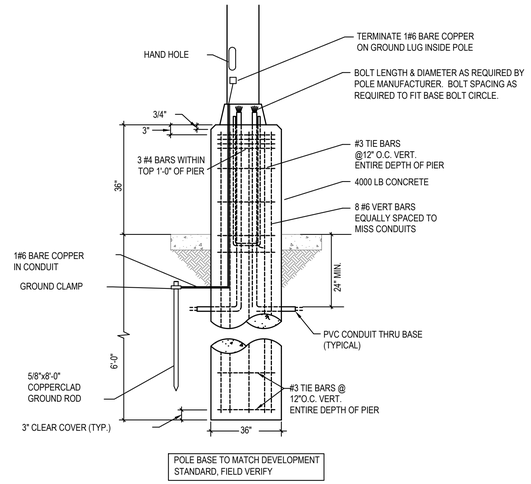
SITE PHOTOMETRIC PLAN

E402

SITE LIGHTING FIXTURE SCHEDULE

MARK NO.	MANUFACTURER & CATALOG NUMBER	VOLTS WATTS	COLOR TEMP LUMENS DIMMING	DESCRIPTION
S2	LSI MRM LED 9L SIL 2 UNV DIM 40 70CRI BRZ IL EXT POLE: SSA5M25WCN1GV	208 62	4000K 9853 LUM	POLE MOUNTED AREA LIGHT WITH TYPE 2 DISTRIBUTION AND CUTOFF LOUVER, DARK BRONZE FINISH, 0-10V DIMMING. MOUNT ON 25'x5" SQUARE ALUMINUM POLE WITH VIBRATION DAMPENER AND 3'-0" HIGH CONCRETE BASE -- 28'-0" TOTAL MOUNTING HEIGHT.
S3	LSI MRM LED 30L SIL 3 UNV DIM 40 70CRI BRZ EXT POLE: SSA5M25WCN1GV	208 213	4000K 32656 LUM	POLE MOUNTED AREA LIGHT WITH TYPE 3 DISTRIBUTION, DARK BRONZE FINISH, 0-10V DIMMING. MOUNT ON 25'x5" SQUARE ALUMINUM POLE WITH VIBRATION DAMPENER AND 3'-0" HIGH CONCRETE BASE -- 28'-0" TOTAL MOUNTING HEIGHT.
S3A	LSI (2) MRM LED 30L SIL 3 UNV DIM 40 70CRI BRZ EXT POLE: SSA5M25WCN2GV	208 426	4000K 65312 LUM	(2) POLE MOUNTED AREA LIGHTS MOUNTED AT 180° WITH TYPE 3 DISTRIBUTION, DARK BRONZE FINISH, 0-10V DIMMING. MOUNT ON 25'x5" SQUARE ALUMINUM POLE WITH VIBRATION DAMPENER AND 3'-0" HIGH CONCRETE BASE -- 28'-0" TOTAL MOUNTING HEIGHT.
S4	LSI MRM LED 18L SIL 4 UNV DIM 40 70CRI BRZ IL EXT POLE: SSA5M25WCN1GV	208 135	4000K 19063 LUM	POLE MOUNTED AREA LIGHT WITH TYPE 4 DISTRIBUTION AND CUTOFF LOUVER, DARK BRONZE FINISH, 0-10V DIMMING. MOUNT ON 25'x5" SQUARE ALUMINUM POLE WITH VIBRATION DAMPENER AND 3'-0" HIGH CONCRETE BASE -- 28'-0" TOTAL MOUNTING HEIGHT.
S5	LSI MRM LED 9L SIL 5W UNV DIM 40 70CRI BRZ EXT POLE: SSA5M25WCN1GV	208 62	4000K 9504 LUM	POLE MOUNTED AREA LIGHT WITH TYPE 5 WIDE DISTRIBUTION, DARK BRONZE FINISH, 0-10V DIMMING. MOUNT ON 25'x5" SQUARE ALUMINUM POLE WITH VIBRATION DAMPENER AND 3'-0" HIGH CONCRETE BASE -- 28'-0" TOTAL MOUNTING HEIGHT.
S6A	LSI (2) MRM LED 12L SIL FT UNV DIM 40 70CRI BRZ EXT POLE: SSA5M25WCN2GV	208 170	4000K 26276 LUM	(2) POLE MOUNTED AREA LIGHTS MOUNTED AT 180° WITH FORWARD THROW DISTRIBUTION, DARK BRONZE FINISH, 0-10V DIMMING. MOUNT ON 25'x5" SQUARE ALUMINUM POLE WITH VIBRATION DAMPENER AND 3'-0" HIGH CONCRETE BASE -- 28'-0" TOTAL MOUNTING HEIGHT.

NOTE:
1. MATCH DEVELOPMENT STANDARDS. NO SUBSTITUTIONS PERMITTED.



POLE FOUNDATION DETAIL

SCALE: NONE

Catalog # : _____ Project : _____ Type : _____

Prepared By : _____ Date : _____

Mirada Medium (MRM)

Outdoor LED Area Light

IP66 IK08

OVERVIEW	
Lumen Package	7,000 - 55,000
Wattage Range	48 - 438
Efficacy Range (LPW)	115 - 162
Weight lbs(kg)	30 (13.6)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction
- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Designed to mount to square or round poles.
- Fixtures are finished with LSI's DuraGrip' polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 37 lbs in carton.

Optical System
- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated sealed optical chamber in 1 component.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in IES Types 2, 3, 4, 5W, FT, FTA, AM, and LC/RC.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93-95%.
- Zero uplight.
- Available in 5000K, 4000K, 3500K, 3000K and 2700K color temperatures per ANS C78.377. Also Available in Phospho Converted Amber with Peak intensity at 610nm.
- 70 or 80CRI Minimum.
- Integral louver (IL) and integral half louver (IH) options available for enhanced backlight control.

Electrical
- High-performance programmable driver features over-voltage, under-voltage, short-circuit and over temperature protection. Custom lumen and wattage packages available.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz or optional High Voltage (347-480 Vac).
- L80 Calculated Life: >100k Hours (See Lumen Maintenance chart)
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 42L and 48L lumen packages rated to +40°C. 55L lumen package rate to +35°C.
- Power factor: > 90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls
- Optional integral passive infrared Bluetooth™ motion. Fixtures operate independently and can be commissioned via iOS or Android configuration app
- LSI's AirLink™ Blue wireless control system, with technology partner Silvair, incorporates Luminaire Level Lighting Controls (LLLC) and high-end trim.

Installation
- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional 3" drill pattern B3 for easy fastening of LSI products.

Warranty
- LSI LED Fixtures carry a 5-year warranty.

Listings
- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- DarkSky approved with 3000K CCT or warmer color temperature selection and fixed mounting arms / non-adjustable brackets.
- Title 24 Compliant; see local ordinance for qualification information.
- RoHS compliant.
- Suitable for wet Locations.
- IP66 rated Luminaire per IEC 60598.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL, to confirm which versions are qualified.
- Patented Silicone Optics (US Patent NO. 10,816,165 B2)
- IK08 rated luminiare per IEC 66262 mechanical impact code.

©LSI Industries Inc. All Rights Reserved. Specifications and dimensions subject to industry standard tolerances. Specifications subject to change without notice.

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as instruments of service and shall remain the property of the Engineer whether the project for which it is prepared is executed or not. The Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, including but not limited to architectural compositions and plans prepared by the Engineer and his consultants, constitute the original, copyrighted work of the Design/Engineer. Any reproduction, use or publication without the express written permission of the Engineer is strictly prohibited. © 2020 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)260-1772

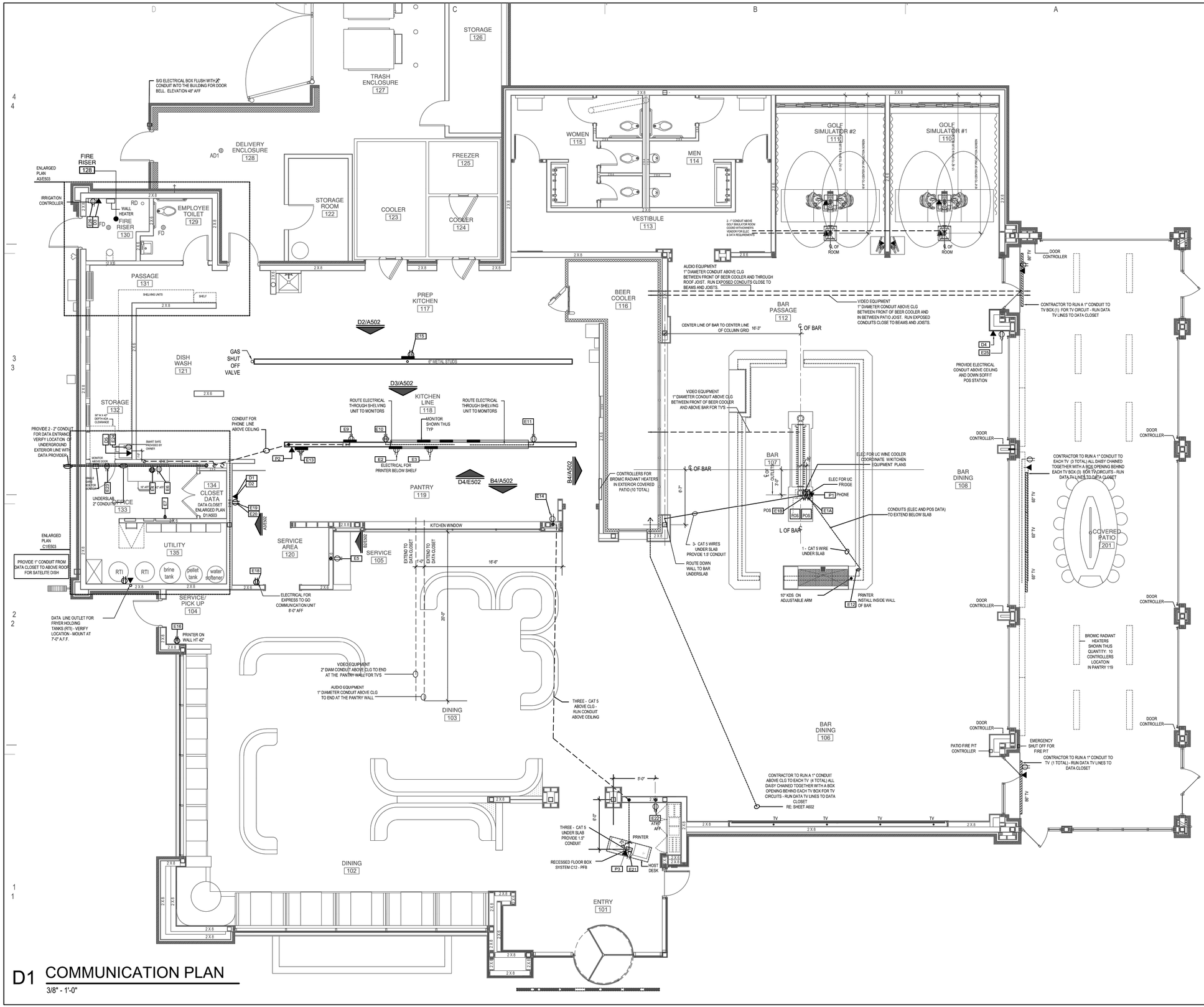
JOB NO.
DRAWN BY: TPF/PH

ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

SITE PHOTOMETRICS DETAILS

E403



D1 COMMUNICATION PLAN

3/8" - 1'-0"

ELECTRICAL PLAN KEY NOTES:

E1A AND E1B - DUPLEX OUTLET, UNDER BAR TOP (BOX IN SLAB), DEDICATED & ISOLATED GROUND (FOR POS AT BAR 107)

E2 & E3 - DUPLEX OUTLET DEDICATED & ISOLATED GROUND (FOR PRINTER) IN PANTRY 119 RE: D4/E502

E4- QUAD OUTLET AT 16" AFF IN OFFICE 133 - RE: D3/A503

E5 - DUPLEX OUTLET DEDICTED & ISOLATED GROUND RE: C2/A502 AT SERVICE 105

E6 - DUPLEX OUTLET, DEDICATED AND ISOLATED GROUND AT 42" AFF IN OFFICE 133 RE: D3/A503

E7 - DUPLEX OUTLET, DEDICATED AND ISOLATED GROUND FOR ALTERNATE LOCTION FOR PRINTER IN OFFICE 133 RE: D4/A503

E8- NOT USED

E9 - DUPLEX OUTLET, DEDICATED AND ISOLATED FOR MONITOR IN KITCHEN LINE 118 RE: D3/E502

E10 - QUADPLEX OUTLET , DEDICATED AND ISOLATED GROUND, ROUTE DOWN INSIDE WALL OF PASS THROUGH WINDOW AND EXTEND THROUGH SHELF CHASE(FOR MONITOR IN KITCHEN LINE 118 AND PANTRY 119)

E11 - DUPLEX OUTLET, DEDICATED AND ISOLATED GROUND, ROUTE DOWN INSIDE WALL OF PASS THROUGH WINDOW AND EXTEND THROUGH SELF CHASE TO MONITORS IN KITCHEN LINE 118.

E12 - DUPLEX OUTLET, DEDICATED AND ISOLATED GROUND ON SIDE OF BAR DIE WALL IN BAR 107

E13 - QUAD OUTLET DEDICATED & ISOLATED GROUND FOR EXPRESS TO GO MONITOR & PRINTER IN PANTRY 119 RE: D4/E502

E14 - DUPLEX OUTLET, DEDICATED AND ISOLATED GROUND FOR PRINTER PANTRY 119 RE: C4/E502

E15 - DUPLEX OUTLET, DEDICATED AND ISOLATED GROUND FOR MOINITOR IN KITCHEN PREP 117

E16 - DUPLEX OUTLET, DEDICATED AND ISOLATED GROUND FOR PRINTER - PASSAGE 104

E17 - NOT USED

E18 - DUPLEX OUTLET, DEDICATED AND ISOLATED GROUND 18" BELOW CEILING (SERVICE 120) FOR EXPRESS TO GO EQUIPMENT

E19 - DUPLEX OUTLET, LOW VOLTAGE, FOR "REACH" COMPUTER DISPLAY IN SERVICE 120 RE: A3/A502

E20 - DUPLEX OUTLET, FOR BEVERAGE POS IN SERVICE 120 RE: A3/A502

E21 - FLOOR BOX FOR TO DUPLEX OUTLET LOCATED BELOW HOST DESK IN ENTRY 101

E22 - DUPLEX ELEC OUTLET IN WALL ADJACENT TO HOST DESK - ENTRY 101

E23 - DUPLEX OUTLET IN WALL ABOVE DOOR IN OFFICE 133 FOR MONITOR RE: D3/E503

E24 - DUPLEX OUTLET FOR SMART SAFE

E25 - DUPLEX OUTLET DEDICATED & ISOLATED GROUND FOR POS STATION LOCATED IN BAR/DIINIG 106

E26 - DUPLEX OUTLET DEDICATED & ISOLATED GROUND FOR LANDSCAPE CONTROLLER

DATA PLAN NOTES:

D1 - DATA OUTLET FOR "REACH COMPUTER" IN SERVICE AREA 119 - RE: B3/E502

D2 - DATA OULET FOR BEVERAGE POS IN SERVICE AREA 119 - RE: B3/A502

D3 - DATA OUTLET FOR LANDSCAPE CONTROLLER IN RISER ROOM 130

D4 - SINGLE GANG BOX FOR DATA/PRINTER IN DINING 108

D5 - DATA OUTLET FOR SMART SAFE (VERIFY HT

PHONE PLAN NOTES:

P1 - PHONE OUTLET - BAR 107

P2 - PHONE OUTLET - PANTRY 119 RE: D4/E502

P3 - PHONE BELOW HOST DESK - ENTRY 101

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4

301 SW Oldham Parkway

Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. It is protected by the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing on this drawing are the property of the Engineer and shall not be used in whole or in part hereto, constitute the original, copyrighted work of the Designer/Engineer. Any reproduction, use or publication by any method, electronic or mechanical, without prior written consent of the Engineer is strictly prohibited. © 2005 BC Engineers, Inc.

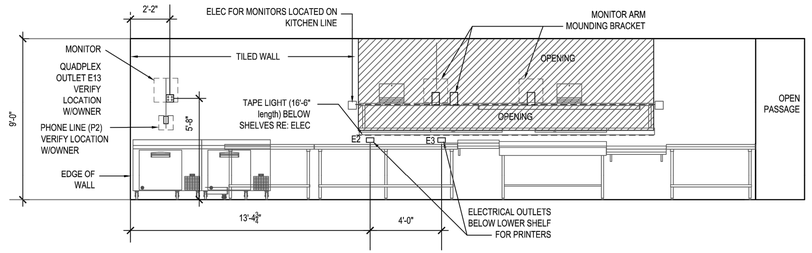
JOB NO.
DRAWN BY: TPF/PH

ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

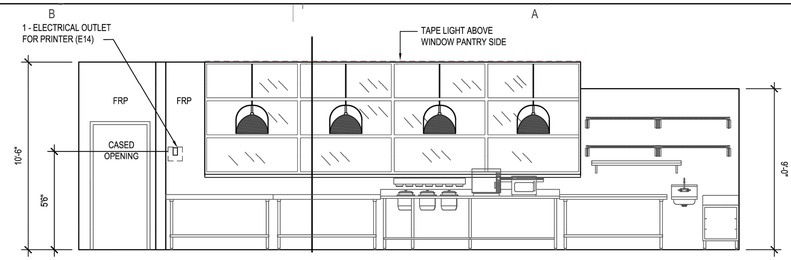
COMMUNICATION PLAN

E501



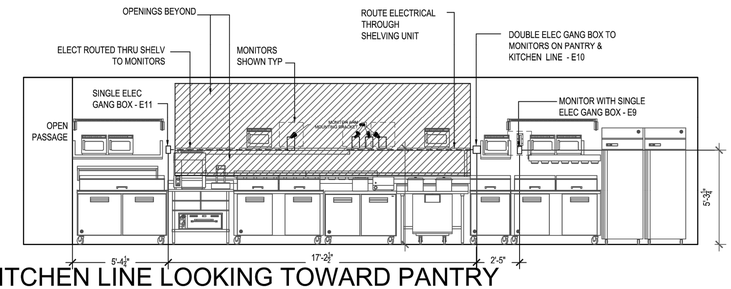
D4 PANTRY 119 LOOKING TOWARDS KICHEN LINE 118

1/4" = 1'-0"



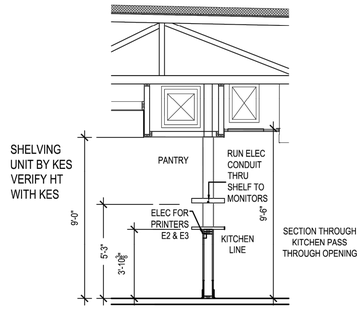
C4 PANTRY 119 LOOKING TOWARD KITCHEN WINDOW

1/4" = 1'-0"



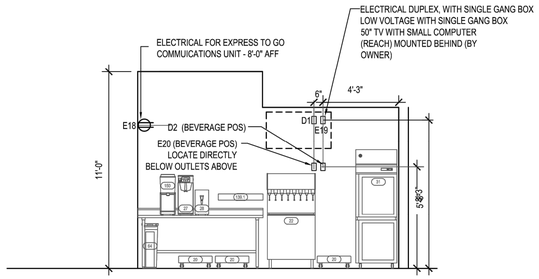
D3 KITCHEN LINE LOOKING TOWARD PANTRY

1/4" = 1'-0"



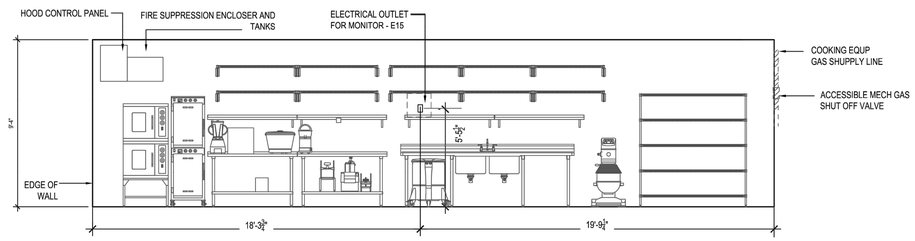
C3 KITCHEN PASS THRU

1/4" = 1'-0"



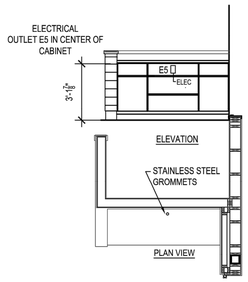
A3 SERVICE AREA 120

1/4" = 1'-0"



D1 KITCHEN PREP 117

1/4" = 1'-0"



C2 SERVICE 105

1/4" = 1'-0"

A2 NOT USED

D1 NOT USED

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4
301 SW Oldham Parkway
Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. It is the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs appearing in these documents are the property of the Engineer and shall not be used in whole or in part for any purpose whatsoever without the written permission of the Engineer. Any reproduction, use or publication by any method, in whole or in part, is prohibited. © 2025 BC Engineers, Inc.

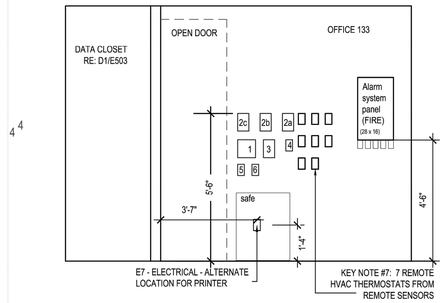
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

JOB NO.	
DRAWN BY: TPF/PH	
ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

SHEET 24x36

COMMUNICATION ELEVATIONS

E502



KEY NOTES

1 PROGRAMMABLE CONTROLLER

2 TIME CLOCK FOR EXTERIOR BUILDING LIGHTS
- 2a: TIME COCK FOR BUILDING LIGHTS
- 2b: TIME CLOCK FOR POLE LIGHTS
- 2c: TIME CLOCK FOR BUIDLING SIGNS

3 LOCAL SCENE CONTROLLER - KITCHEN

4 DIMMER SWITCH FOR NEON LIGHTS LOCATED IN BAR DINING

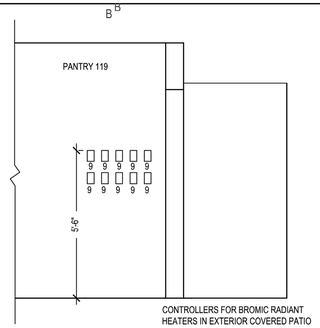
5 SWITCH FOR EXHAUST FANS IN RESTROOM

6 BIG ASS FAN CONTROLLER INTERLOCK WITH FIRE ALARM SYSTEM

7 REMOTE HVAC THERMOSTATS (7 TOTAL) VERIFY QUANTITY WITH MECHANICAL

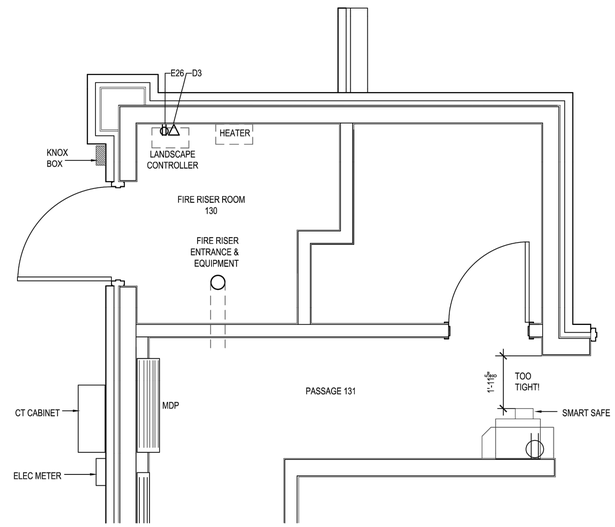
D4 OFFICE 133 ELEVATION

1/4" = 1'-0"



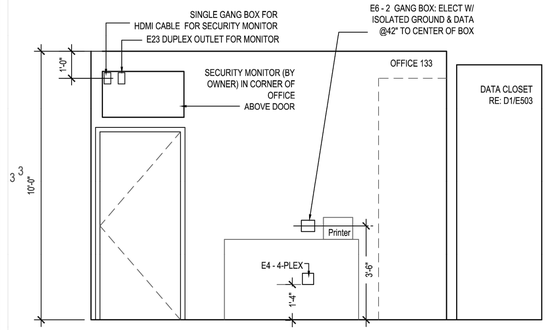
B4 PANTRY 119

3/8" = 1'-0"



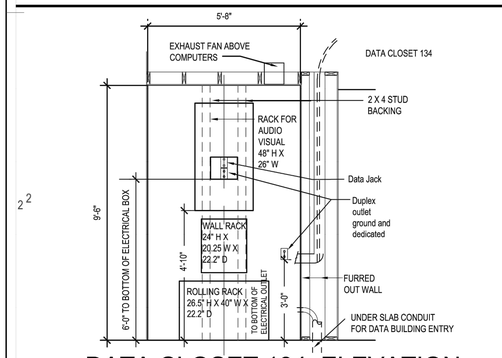
A3 ENLARGED PLAN (FIRE RISER RM & PASSAGE)

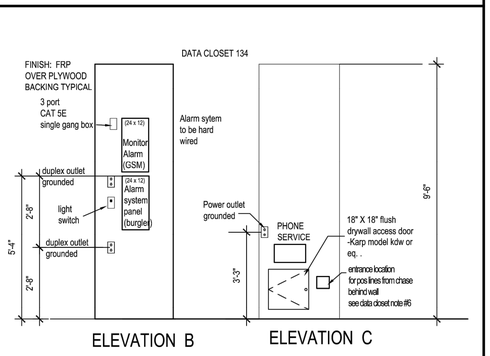
3/8" = 1'-0"



D3 OFFICE 133 ELEVATION

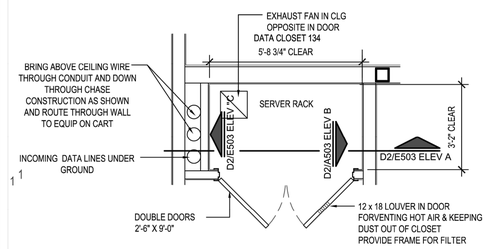
3/8" = 1'-0"





D2 DATA CLOSET 134 ELEVATION

3/8" = 1'-0"



DATA CLOSET NOTES:

1. EXHAUST FAN TO BE LOCATED IN CEILING IN OPPOSITE SIDE OF AIR INLET. FAN TO BE ON CONSTANT ON.
2. SPRINKLER HEADS ARE NOT TO BE LOCATED OVER SERVER RACK.
3. PROVIDE LOUVER IN DOOR TO VENT HOT AIR D1/A503
4. WALL FINISH OF INTERIOR CLOSET - FRP ON ¾" PLYWOOD
5. CEILING FINISH - ACOUSTICAL CEILING TILE AT 10'-0" ABOVE FINISH FLOOR
6. CUT OPENINGS IN PLYWOOD CLOSET WALL AS SHOWN FOR ENTRANCE OF DATA LINES FROM CHASE TO CLOSET - SIZE OF OPENINGTO BE DETERMINED IN FIELD. PROVIDE FRP TRIM AROUND OPENINGS.
7. COORDINATE WITH OWNER ON LOCATIONS OF ALL OUTLETS AND EQUIPMENT IN OFFICE/DATA CLOSET. PROVIDE TEMPLATE ON WALL FOR OWNER'S APPROVAL

ELECTRICAL NOTES:

1. PROVIDE LED LIGHT FIXTURE MOUNTED TO WALL ABOVE DOOR. FIXTURE TO BE CONTROLLED BY WATT STOPPER #TS-400 WALL TIMER SWITCH MOUNTED IN CLOSET, REFER TO ELEVATION "B" FOR MOUNTING LOCATION. RE: ELECTRICAL

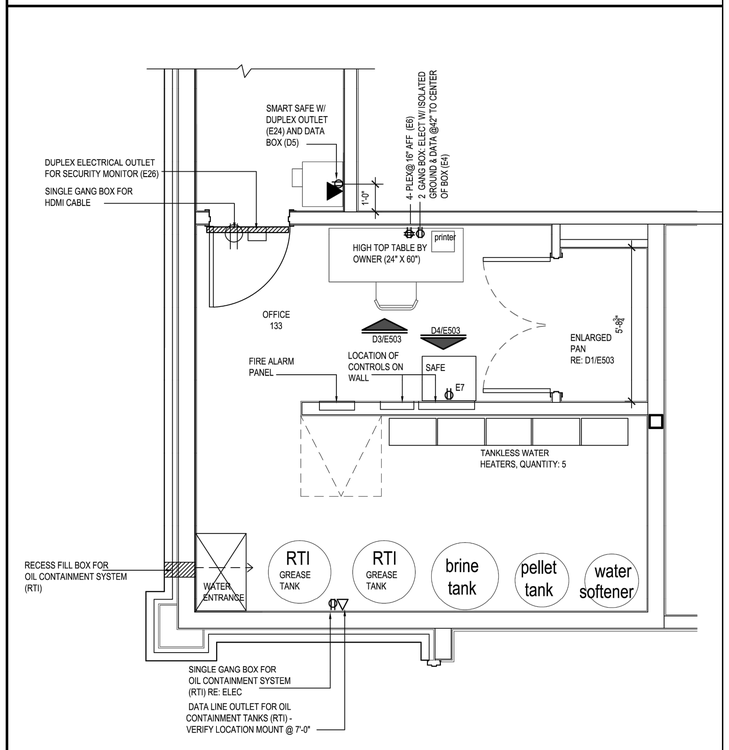
EXHAUST FAN TO BE CONSTANT ON - NO SWITCH

PROVIDE TEMPLATE OF EQUIPMENT ON WALL FOR OWNER APPROVAL PRIOR TO INSTALLATION OF EQUIPMENT

D1 DATA CLOSET 134 PLAN

3/8" = 1'-0"

B1 NOT USED



A1 ENLARGED OFFICE (133) & UTILITY PLAN (135)

3/8" = 1'-0"

10/9/2025

STATE OF MISSOURI
DARIN T. SEIDEL
NUMBER PE-2009030629
REGISTERED PROFESSIONAL ENGINEER

FIVE FOUR

Oldham Village - Lot 4

301 SW Oldham Parkway

Lee's Summit, Missouri

SHAW HOFSTRA + ASSOCIATES
1800 CENTRAL STREET, SUITE 203
KANSAS CITY, MISSOURI 64108
P: 816.421.0505

BC PROJECT #: 24606
MISSOURI PE COA #2009003629

This drawing has been prepared by the Engineer, or under his supervision. This drawing is provided as an instrument of service and is the property of the Engineer whether the project for which it is made is executed or not. It is to the Architectural Works Copyright Protection Act of 1990, all drawings, specifications, ideas and designs, including but not limited to architectural compositions, floor plans, and elevations prepared by the Engineer herein, constitute the original, copyrighted work of the Design/Engineer. Any reproduction, use or publication of this drawing without the express written permission of the Engineer is strictly prohibited. © 2020 BC Engineers, Inc.

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)260-1772

JOB NO.	
DRAWN BY:	TPF/PH

ISSUE	DATE
ISSUE FOR PERMIT REVIEW	10-06-2025

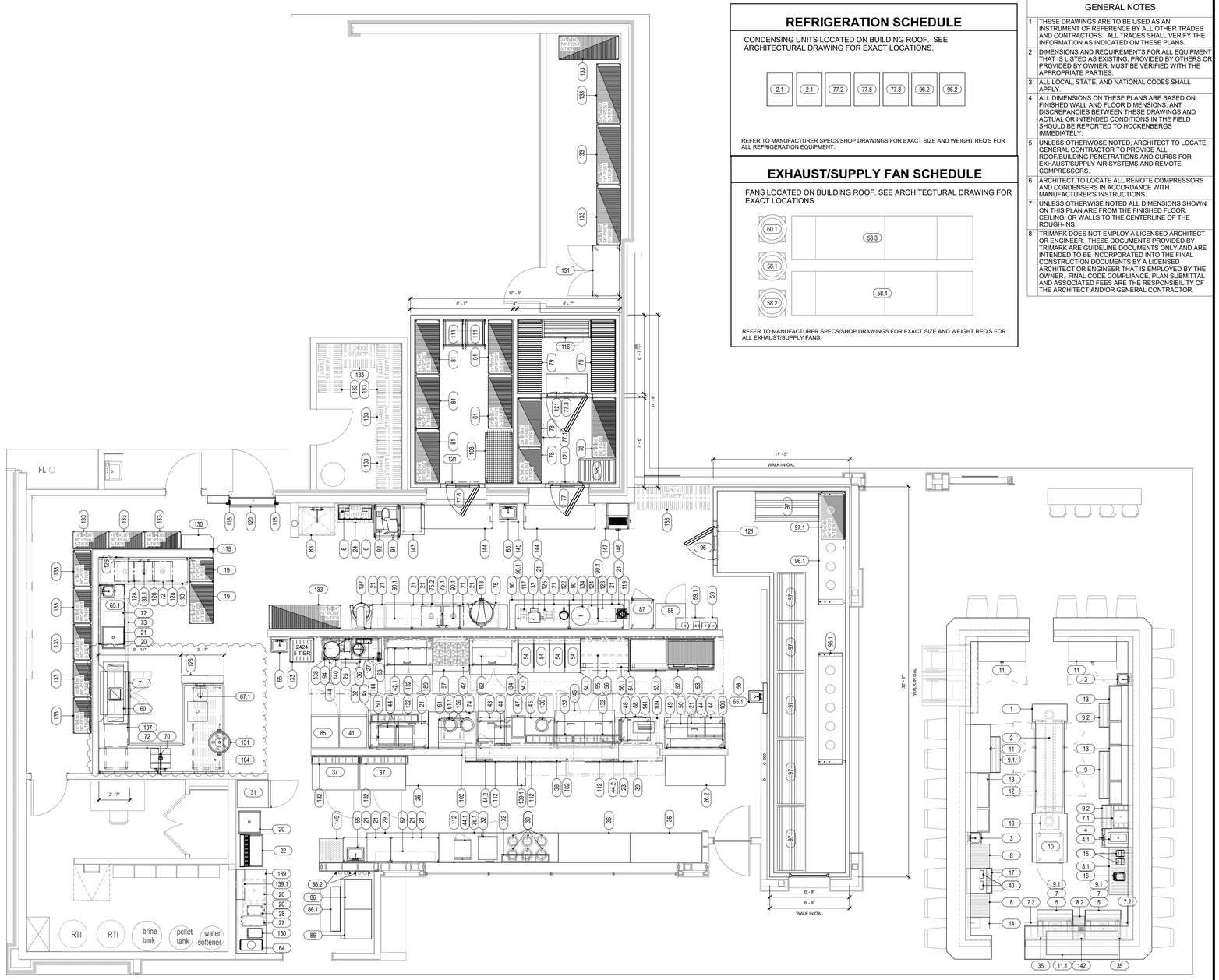
SHEET 24x36

COMMUNICATION PLAN DETAILS

E503

FOODSERVICE EQUIPMENT SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	REMARKS
1	1	CENTER ISLAND OF BAR	
2	1	BEER SYSTEM	
2.1	2	REMOTE COMPRESSOR, GLYCOL UNITS	
3	2	SPACE SAVER HAND SINK	
4	1	FROZEN DRINK MACHINE	
4.1	1	STAINLESS STEEL DOLLY W/ BUMPERS	
5	2	SODA GUN- BY OTHERS	BY OTHERS
6	2	CARBONATORS- BY OTHERS	BY OTHERS
7	2	UNDERBAR ICE CHEST- 36"	
7.1	1	UNDERBAR ICE CHEST- 24"	
7.2	2	ICE BINS & SHELF	
8	2	UNDERBAR DRAINBOARD- 24"	
8.1	1	UNDERBAR DRAINBOARD- 48"	
8.2	1	UNDERBAR DRAINBOARD- 12"	
9	1	UNDERBAR SPEED RAIL- 48"	
9.1	3	UNDERBAR SPEED RAIL- 36"	
9.2	2	UNDERBAR SPEED RAIL- 24"	
10	1	UNDERCOUNTER REFRIGERATOR	
11	3	BACK BAR CABINET- 48"	
11.1	1	DRAIN PAN, 24" X 64"	
12	1	PASS-THRU BACK BAR COOLER- 82"	
13	3	FROSTERS W/ CHILLERS- 60"	
14	1	DUMP SINK	
15	2	BAR/DRINK MIXER	
16	1	BAR BLENDER	
17	1	UNDERCOUNTER GLASSWASHER	
18	1	UNDERCOUNTER WINE COOLER- 18 BOTTLE	
19	2	SHELVING UNIT, 5 TIER, 86" GREEN EPOXY (1) 24" X 42" & (1) 24" X 24"	
20	5	DOLLY DISH RACKS	
21	17	WALL MOUNTED SHELVING (SOME STACKED)	
22	1	SODA/ICE DISPENSER- BY OTHERS, 32" WIDE	BY OTHERS
23	1	ICE PAN & SHELF	
24	1	STORAGE SHELVING- 5 TIER, 86" POSTS, GREEN EPOXY	
25	1	MICROWAVE SHELF- 20" X 60"	
26	1	STAINLESS STEEL WORKTABLE- 30" X 112"	
26.2	1	STAINLESS STEEL WORKTABLE- 30" X 60"	
27	1	COFFEE BREWER - BY OTHERS	BY OTHERS
28	1	ICED TEA BREWER- BY OTHERS	BY OTHERS
29	1	STAINLESS STEEL WORKTABLE- 30" X 96"	
30	6	INDUCTION RETHERMALIZER,DROP-IN	
31	1	REFRIGERATOR, REACH-IN GLASS DOOR	
32	2	MICROWAVE CONVECTION OVEN	
33	1	FOOD PROCESSOR	
34	1	SANDWICH/SALAD PREP REFRIGERATOR- 48"	
35	2	CONDIMENT PAN HOLDERS FOR ICE BINS	
36	2	WORK TABLE, 30" X 72"	
36.1	1	WORK COUNTER, 30" X 120"	
37	2	WORKTOP REFRIGERATOR, 48"	
38	1	PASS-THRU WITH OVERSHELF	
39	3	HEAT LAMP- 108", DUAL TANDEM	
40	2	SS PAPER TOWEL DISPENSER	
41	1	REACH-IN REFRIGERATOR	
42	1	EQUIPMENT STAND W/ CASTERS- 36"	
42.1	1	WALL MOUNTED SS SHELVING - 48" AFF	
43	1	27" MEGATOP COOLER	
44	7	MICROWAVE OVEN	
44.1	1	MICROWAVE OVEN	
44.2	2	MICROWAVE OVEN	
45	1	UNDERCOUNTER FREEZER W/ CUTTING BOARD TOP	
46	2	SANDWICH/SALAD PREP REFRIGERATOR- 60"	
47	2	FOOD WARMER (1) NOT SHOWN	
48	1	FRENCH FRY WARMER	
49	1	SANDWICH/SALAD PREP REFRIGERATOR- 60"	
50	2	MICROWAVE SHELF, (1) 36, (1) 54"	
51	1	DOLLY DISH RACKS	
52	1	REFRIGERATED EQUIPMENT BASE STAND	
53	1	CHARBROILER, GAS- 48"	
53.1	1	GRIDDLES, 36"	
54	4	FRYER W/ CASTERS & GAS HOSES	
54.1	3	SPLASH SHIELD	
55	1	CHEESMELTER, GAS- 48"	
56	1	GRIDDLE, GAS- 48"	
56.1	1	GRIDDLE STAND	
57	1	6 BURNER COUNTERTOP RANGE	
58	1	EXHAUST HOOD	
58.1	1	ROOF MOUNTED EXHAUST FAN	
58.2	1	ROOF MOUNTED EXHAUST FAN	
58.3	1	MUA UNIT	
58.4	1	MUA UNIT	
59	1	FIRE SUPPRESSION SYSTEM	
59.1	1	EXHAUST/MUA CONTROL PANEL	
60	1	PANT LEG DUCT	
60.1	1	ROOF MOUNTED EXHAUST FAN	
61	1	CHIP WARMER	
61.1	1	EQUIPMENT DOLLY	
62	1	WALL MOUNTED SHELF- 18" X 27"	
63	1	CAN OPENER	
64	1	TRASH CAN- BY OTHERS	BY OTHERS
65	3	HAND SINK	
65.1	2	SPACE SAVER HAND SINK	
66	1	SPARE NUMBER	NOT SHOWN
67	1	SOILED DISHTABLE W/ PRE-RINSE SINK	
67.1	1	SOILED DISHTABLE FAUCET	
68	1	WARMING DRAWER	
69	3	SMOKER POLES (NOT SHOWN)	
70	1	PRE-RINSE FAUCET ASSEMBLY	
71	1	CONVEYOR DISHWASHER	
72	3	WALL MOUNTED SHELVING (SOME STACKED)	
73	1	CLEAN DISHTABLE	
74	1	SS WORKTABLE- 30" X 36"	
75	1	2-COMPARTMENT SINK	
75.1	1	FAUCET	
76	1	SPARE NUMBER	
77	1	WALK-IN COOLER	
77.1	1	COOLER EVAPORATOR	
77.2	1	COOLER COMPRESSOR- REMOTE	
77.3	1	WALK-IN FREEZER	
77.4	1	FREEZER EVAPORATOR	
77.5	1	FREEZER COMPRESSOR- REMOTE	
77.6	1	WALK-IN COOLER	
77.7	1	COOLER EVAPORATOR	
77.8	1	COOLER COMPRESSOR- REMOTE	
77.9	1	WALK IN FREEZER HEAT TAPE - NOT SHOWN ON DRAWING	
78	3	WALK-IN COOLER SHELVING, 5 TIER, 86" GREEN EPOXY	
79	2	WALK-IN FREEZER SHELVING- 5 TIER, 86" POSTS, GREEN EPOXY	
80	1	SPARE NUMBER	
81	5	WALK-IN COOLER SHELVING - 5 TIER, 86" GREEN EPOXY	
82	1	WALL MOUNTED SHELF- 12" X 48"	
83	1	MOP SINK- BY GC	BY GC
83.1	1	MOP SINK FAUCET- BY GC	BY GC
85	1	REACH-IN FREEZER	
86	2	ICE MACHINE	
86.1	1	ICE BIN	
86.2	2	WATER FILTER	
87	1	COOK & HOLD OVEN, SMOKER	
88	1	DOUBLE STACK CONVECTION OVEN	
89	1	SANDWICH/SALAD PREP REFRIGERATOR- 48"	
90	2	SS WORKTABLE- 30" X 60"	
90.1	4	WALL MOUNTED SHELF- 12" X 60"	
91	1	CAN RACK	
92	1	ELECTRIC FOOD SLICER	
93	1	THREE COMPARTMENT SINK W/ DRAINBOARDS	
93.1	1	FAUCET	



FOODSERVICE EQUIPMENT PLAN

1/4" = 1'-0"

FOODSERVICE EQUIPMENT SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	REMARKS
94	1	WALL MOUNTED SHELF- 12" X 60"	
95	2	SPLASH SHIELD	
96	1	WALK-IN KEG COOLER	
96.1	2	BEER COOLER EVAPORATORS	
96.2	2	BEER COOLER COMPRESSOR - GLYCOL UNITS	
97	6	KEG RACK	
97.1	1	SHELVING UNIT, 5 TIER, 86" GREEN EPOXY (1) 24" X 42" & (1) 24" X 24"	
98	1	DUNNAGE RACK- 24" X 36"	
99	1	STAINLESS STEEL WALL PANELING, 7' L TO R, FLOOR TO CEILING	
100	1	WALL MOUNTED SHELF- 9" X 54"	
101	1	SPARE NUMBER	
102	2	HEAT LAMP HANGING SYSTEM	
103	2	SECURITY CART, 48	
104	1	DOUBLE SLANTED RACK SHELF	
105-106	1	SPARE NUMBER	
107	1	ELECTRIC BOOSTER HEATER	
108	2	WALL SHELVES, LID STORAGE UNITS, STACKED	
109	1	WORKTABLE- 30" X 45"	
110	1	MOP & BROOM WALL RACKS - NOT SHOWN	NOT SHOWN
111	4	BUN / SHEET PAN RACK - (2) NOT SHOWN	(2) NOT SHOWN
112	4	TICKET RACK- 48"	
113-114	1	SPARE NUMBER	
115	3	CORNER GUARD	
116	1	DUNNAGE RACK- 18" X 48"	(1) NOT SHOWN
117	1	FRUIT/ VEGETABLE SLICER, CUTTER, DICER- BY OTHERS	BY OTHERS
118	1	SALAD DRYER	
119	1	FOOD BLENDER	
120	1	BACK DOOR AIR CURTAIN	
121	4	DOOR STRIP CURTAINS	
122	1	ELECTRIC JUICER	

FOODSERVICE EQUIPMENT SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	REMARKS
123	1	WEDGER- BY OTHERS	BY OTHERS
124	1	TOMATO SLICER- BY OTHERS	BY OTHERS
125	1	FRUIT/VEGETABLE DICER- BY OTHERS	BY OTHERS
126	2	PEG BOARD- 24" X 48"	
127	1	DIPPER WELL	
128	5	SINK COVERS (2) AT 2 COMP, (3) AT 3 COMP	
129	1	SPARE NUMBER	
130	1	WALL MOUNT SHELF - EMPLOYEE STATION	
131	1	TRASH RECEPTACLE- BY OTHERS	BY OTHERS
132	7	SLANTED PAN SHELF	
133	16	STORAGE SHELF, 5-TIER, 86" POSTS, GREEN EPOXY, SIZES PER PLAN	
134	1	RICE COOKER- BY OTHERS	BY OTHERS
135	1	SPARE NUMBER	
136	4	COUNTERTOP RETHERMALIZER	
137	1	30 QT. FLOOR MIXER	
138	1	WORKTOP- 30" X 60", WITH OFFSET TOP	
139	1	WORK TABLE	
139.1	2	PAN SHELF, 30"	
140	1	TILT KETTLE	
141	1	ELECTRIC CONVEYOR TOASTER	
142	1	BAR GLASS RINSER	
143	1	STAINLESS STEEL WORKTABLE- 30" X 24"	
144	2	WALL MOUNTED SHELF- 24" X 72"	
145	1	CUSTOM MICROWAVE SHELF- 36"	
146	1	BREAD SLICER	
147	1	PORTABLE BREAD SLICER STAND	
148	1	SPARE NUMBER	
149	1	DRAINBOARD UNIT W/ RACK STORAGE	
150	1	REFRIGERATED BEVERAGE DISPENSER, BUBBLER	
151	1	Mobile Security Unit	

REFRIGERATION SCHEDULE

CONDENSING UNITS LOCATED ON BUILDING ROOF. SEE ARCHITECTURAL DRAWING FOR EXACT LOCATIONS.

REFER TO MANUFACTURER SPECS/SHOP DRAWINGS FOR EXACT SIZE AND WEIGHT REQ'S FOR ALL REFRIGERATION EQUIPMENT.

EXHAUST/SUPPLY FAN SCHEDULE

FANS LOCATED ON BUILDING ROOF. SEE ARCHITECTURAL DRAWING FOR EXACT LOCATIONS

REFER TO MANUFACTURER SPECS/SHOP DRAWINGS FOR EXACT SIZE AND WEIGHT REQ'S FOR ALL EXHAUST/SUPPLY FANS.

GENERAL NOTES

1	THESE DRAWINGS ARE TO BE USED AS AN INSTRUMENT OF REFERENCE BY ALL OTHER TRADES AND CONTRACTORS. ALL TRADES SHALL VERIFY THE INFORMATION AS INDICATED ON THESE PLANS.
2	DIMENSIONS AND REQUIREMENTS FOR ALL EQUIPMENT THAT IS LISTED AS EXISTING, PROVIDED BY OTHERS OR PROVIDED BY OWNER, MUST BE VERIFIED WITH THE APPROPRIATE PARTIES.
3	ALL LOCAL, STATE, AND NATIONAL CODES SHALL APPLY.
4	ALL DIMENSIONS ON THESE PLANS ARE BASED ON FINISHED WALL AND FLOOR DIMENSIONS. ANT DISCREPANCIES BETWEEN THESE DRAWINGS AND ACTUAL OR INTENDED CONDITIONS IN THE FIELD SHOULD BE REPORTED TO HOCKENBERGS IMMEDIATELY.
5	UNLESS OTHERWOSE NOTED, ARCHITECT TO LOCATE, GENERAL CONTRACTOR TO PROVIDE ALL ROOF/BUILDING PENETRATIONS AND CURBS FOR EXHAUST/SUPPLY AIR SYSTEMS AND REMOTE COMPRESSORS.
6	ARCHITECT TO LOCATE ALL REMOTE COMPRESSORS AND CONDENSERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
7	UNLESS OTHERWISE NOTED ALL DIMENSIONS SHOWN ON THIS PLAN ARE FROM THE FINISHED FLOOR, CEILING, OR WALLS TO THE CENTERLINE OF THE ROUGH-INS.
8	TRIMARK DOES NOT EMPLOY A LICENSED ARCHITECT OR ENGINEER. THESE DOCUMENTS PROVIDED BY TRIMARK ARE GUIDELINE DOCUMENTS ONLY AND ARE INTENDED TO BE INCORPORATED INTO THE FINAL CONSTRUCTION DOCUMENTS BY A LICENSED ARCHITECT OR ENGINEER THAT IS EMPLOYED BY THE OWNER. FINAL CODE COMPLIANCE, PLAN SUBMITTAL AND ASSOCIATED FEES ARE THE RESPONSIBILITY OF THE ARCHITECT AND/OR GENERAL CONTRACTOR.

ISSUE FOR PERMIT
REVIEW 10/6/2025

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION
2025.02.11	1	MEP Layout
2025.02.24	2	MEP Updated layout
2025.05.29	3	LAYOUT UPDATE
2025.06.02	4	MEP UPDATE

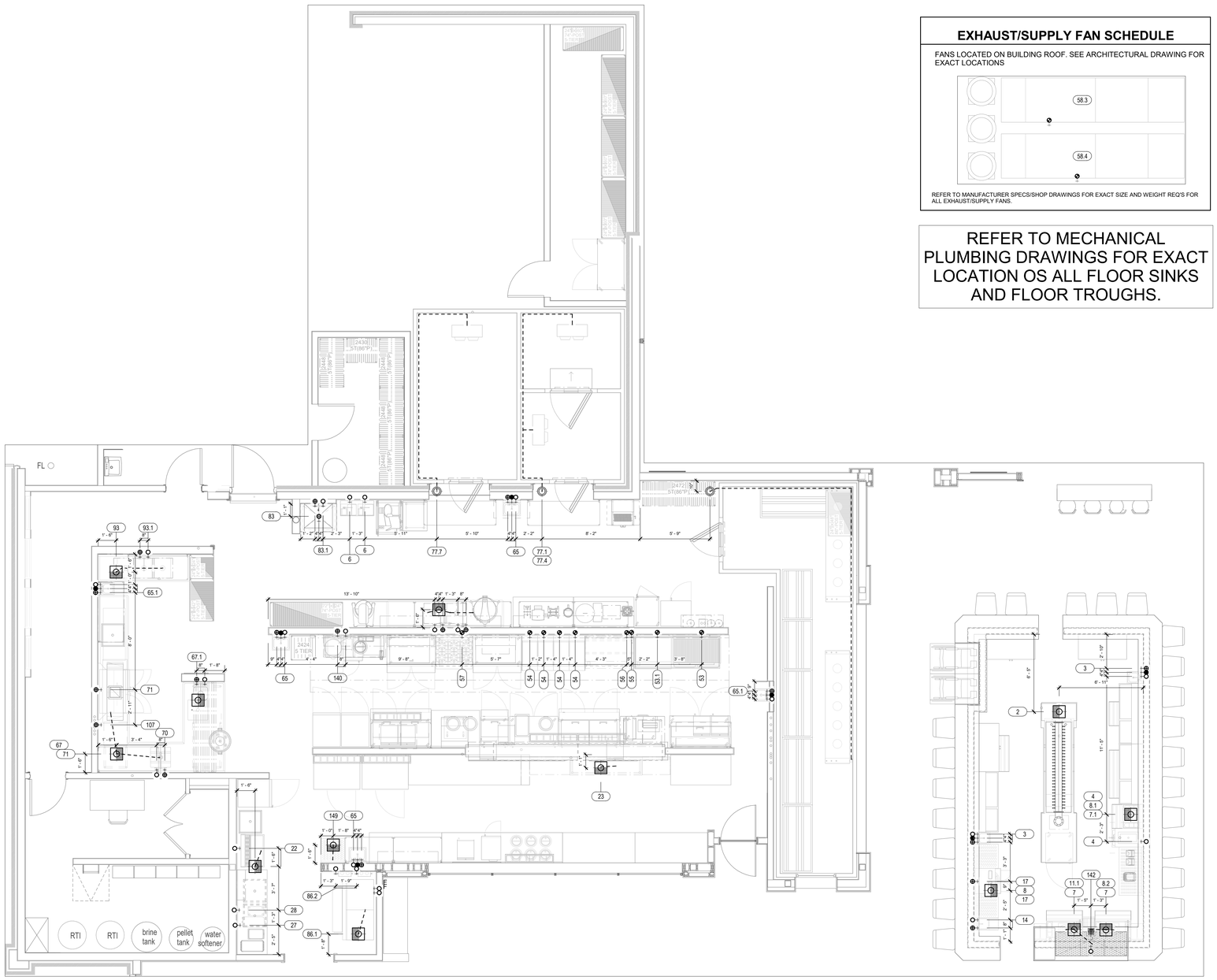
FIVE FOUR
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE: FOODSERVICE EQUIPMENT PLAN

SHEET NUMBER: QF101



PLUMBING ROUGH-IN PLAN

1/4" = 1'-0"

EXHAUST/SUPPLY FAN SCHEDULE

FANS LOCATED ON BUILDING ROOF. SEE ARCHITECTURAL DRAWING FOR EXACT LOCATIONS

REFER TO MANUFACTURER SPECS/SHOP DRAWINGS FOR EXACT SIZE AND WEIGHT REQ'S FOR ALL EXHAUST/SUPPLY FANS.

REFER TO MECHANICAL PLUMBING DRAWINGS FOR EXACT LOCATION OS ALL FLOOR SINKS AND FLOOR TROUGHS.

PLUMBING LEGEND

- HOT WATER
- HOT WATER - SOFTENED
- COLD WATER
- COLD WATER - SOFTENED
- FILTERED WATER
- DIRECT WASTE
- FLOOR SINK - THREE-QUARTER GRATE
- FLOOR SINK - HALF GRATE
- FLOOR SINK - NO GRATE
- FLOOR DRAIN
- FUNNEL FLOOR DRAIN
- HUB FLOOR DRAIN
- AREA FLOOR DRAIN - SLOPED PER CODE
- GAS DROP FROM MANIFOLD
- FIRE SUPPRESSION GAS SHUT-OFF VALVE
- CHILLED WATER (CS)
- CHILLED WATER RETURN (CR)
- STEAM SUPPLY (SS)
- CONDENSATE RETURN (CR)

PLUMBING NOTES (DIVISION 22)

NOTE: THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR (DIVISION 22) AND SHALL BE APPLICABLE ONLY WHERE NOTED ON THE PLUMBING ROUGH-IN PLAN(S). THE PLUMBING CONTRACTOR (DIVISION 22) SHALL VERIFY AND COORDINATE THE EXACT PLUMBING REQUIREMENTS FOR ALL NIC EQUIPMENT PRIOR TO FINAL ROUGH-IN.

A. INSTALL KEC (SECTION 114000) FURNISHED FLOOR TROUGH(S).
B. INSTALL KEC (SECTION 114000) FURNISH MOP SINK(S).
C. INSTALL KEC (SECTION 114000) FURNISHED FIRE SUPPRESSION SYSTEM GAS SHUT OFF VALVE. MUST BE ACCESSIBLE AND NOT CONCEALED IN WALL OR CEILING.
D. INSTALL KEC (SECTION 114000) FURNISHED DRAIN LINE TEMPERING KIT PER MANUFACTURER'S RECOMMENDATIONS.
E. MANIFOLD DRAINS TO SINGLE CONNECTION.
F. FURNISH AND INSTALL BALL VALVE IN DRAIN LINE. VALVE TO BE IN EASILY ACCESSIBLE LOCATION.
G. INTERPLUMB BETWEEN FILTER AND EQUIPMENT. PIPING FROM WATER FILTER OUTLET TO POINTS OF USE SHALL BE CONCEALED WITHIN WALLS AND CEILINGS. EXTEND DRAIN(S) TO FLOOR SINK/FLOOR DRAIN, IF REQUIRED.
H. CONNECT MIN. 110°F HOT WATER SUPPLY TO BUILT-IN OR EXTERNAL (70° RISE) BOOSTER HEATER. WHEN EXTERNAL, INSTALL TEMPERATURE/PRESSURE GAUGE(S) AS REQ'D AND EXTEND TO DISHWASHER INLET.
I. CONNECT DRAIN(S) WITH REFRIGERATION GRADE HARD COPPER USING 1" STANDOFFS. "P" TRAP DRAIN OUTSIDE WALK-IN COMPARTMENT(S). PROVIDE AND INSTALL SLEEVES THRU WALK-IN AND BUILDING WALLS FOR DRAIN LINE(S). FOAM & CAULK AROUND SLEEVES AND DRAIN LINES. WRAP WITH DRAIN LINE HEATER AND INSULATION WHERE SUBJECT TO FREEZING TEMPERATURES.
J. REFRIGERATION CONTRACTOR SHALL PROVIDE WALK-IN EVAPORATOR CONDENSATE DRAIN(S) PER REFRIGERATION GENERAL REQS.
K. PROVIDE GRAY WATER AND SLURRY PIPING TO AND FROM (SECTION 114000) FURNISHED PULPER, TROUGH, AND WATER EXTRACTOR. INSTALL KEC (SECTION 114000) FURNISHED TROUGH INLET NOZZLES AND PROVIDE SHUT OFF VALVE AT EACH NOZZLE.
L. PROVIDE "TEE" IN HOT WATER LINE AND CAP FOR FUTURE INSTALLATION OF CHEMICAL DISPENSING SYSTEM BY OTHERS.
M. PROVIDE CHROME PLATED PIPE AND FITTINGS WHERE EXPOSED.
N. PROVIDE AND INSTALL 3" MIN. DRAIN LINE TO 12"X12"X10" DEEP FLOOR SINK.
O. VERIFY EXACT LOCATION AND QUANTITY OF AREA FLOOR DRAIN(S) WITH THE PLUMBING ENGINEER.

ISSUE FOR PERMIT
REVIEW 10/6/2025

FOODSERVICE PLUMBING SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	HW SIZE	HW AFF	CW SIZE	CW AFF	DW SIZE	DW AFF	GAS SIZE	GAS AFF	GAS MBTU	PLUMBING REMARKS
2	1	BEER SYSTEM										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK FROM (2) BEER TOWERS. VERIFY ROUGH-IN REQUIREMENTS W/ PURVEYOR
3	2	SPACE SAVER HAND SINK	1/2"	14"	1/2"	14"	1 1/2"	16"				STUB UP IN DIE WALL
4	1	FROZEN DRINK MACHINE			1/2"	14"						IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
6	2	CARBONATORS- BY OTHERS			1/2"	72"						BY OTHERS. VERIFY ROUGH-IN REQUIREMENTS WITH PURVEYOR
7	2	UNDERBAR ICE CHEST- 36"										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
7.1	1	UNDERBAR ICE CHEST- 24"										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
7.2	2	ICE BINS & SHELF										
8	2	UNDERBAR DRAINBOARD- 24"										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
8.1	1	UNDERBAR DRAINBOARD- 48"										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
8.2	1	UNDERBAR DRAINBOARD- 12"										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
11.1	1	DRAIN PAN, 24" X 64"										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
14	1	DUMP SINK	1/2"	14"	1/2"	14"						IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
17	1	UNDERCOUNTER GLASSWASHER	1/2"	14"								IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
22	1	SODA/ICE DISPENSER- BY OTHERS, 32" WIDE			1/2"	24"						BY OTHERS VERIFY ROUGH-IN REQUIREMENTS
23	1	ICE PAN & SHELF										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
27	1	COFFEE BREWER - BY OTHERS			3/8"	48"						VERIFY ALL ROUGH-IN REQUIREMENTS W/ PURVEYOR
28	1	ICED TEA BREWER- BY OTHERS			1/2"	48"						BY OTHERS, VERIFY ROUGH-IN REQUIREMENTS W/ PURVEYOR
53	1	CHARBROILER, GAS- 48"							3/4"	24"	150.0	KEC TO PROVIDE GAS QUICK DISCONNETC
53.1	1	GRIDDLES, 36"							3/4"	24"	90.0	KEC TO PROVIDE GAS QUICK DISCONNECT
54	4	FRYER W/ CASTERS & GAS HOSES							3/4"	24"	110.0	KEC TO PROVIDE GAS QUICK DISCONNECT
55	1	CHEESMELTER, GAS- 48"							3/4"	24"	40.0	KEC TO PROVIDE GAS QUICK DISCONNECT
56	1	GRIDDLE, GAS- 48"							3/4"	24"	120.0	KEC TO PROVIDE GAS QUICK DISCONNECT
57	1	6 BURNER COUNTERTOP RANGE							3/4"	24"	192.0	KEC TO PROVIDE GAS QUICK DISCONNECT
58.3	1	MUA UNIT							3/4"		205.2	LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS WITH PURVEYOR

FOODSERVICE PLUMBING SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	HW SIZE	HW AFF	CW SIZE	CW AFF	DW SIZE	DW AFF	GAS SIZE	GAS AFF	GAS MBTU	PLUMBING REMARKS
58.4	1	MUA UNIT							3/4"		205.2	LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS WITH PURVEYOR
65	3	HAND SINK	1/2"	14"	1/2"	14"	1 1/2"	16"				
65.1	2	SPACE SAVER HAND SINK										
67	1	SOILED DISHTABLE W/ PRE-RINSE SINK										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
67.1	1	SOILED DISHTABLE FAUCET	1/2"	14"	1/2"	14"						
70	1	PRE-RINSE FAUCET ASSEMBLY	1/2"	14"	1/2"	14"						
71	1	CONVEYOR DISHWASHER	3/4"	60"								IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
73	1	CLEAN DISHTABLE										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
75	1	2-COMPARTMENT SINK										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
75.1	1	FAUCET	1/2"	14"	1/2"	14"						
77.1	1	COOLER EVAPORATOR										IW: PC TO CONNECT WASTE LINE TO FUNNEL FLOOR DRAIN
77.4	1	FREEZER EVAPORATOR										IW: PC TO CONNECT WASTE LINE TO FUNNEL FLOOR DRAIN
77.7	1	COOLER EVAPORATOR										IW: PC TO CONNECT WASTE LINE TO FUNNEL FLOOR DRAIN
83	1	MOP SINK- BY GC					2"					STUB UP, BY OTHERS, VERIFY ROUGH-IN REQUIREMENTS W/ PURVEYOR
83.1	1	MOP SINK FAUCET- BY GC	1/2"	36"	1/2"	36"						BY OTHERS. VERIFY ROUGH-IN REQUIREMENTS WITH PURVEYOR
86	2	ICE MACHINE										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
86.1	1	ICE BIN										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
86.2	2	WATER FILTER			1/2"	80"						VERIFY ROUGH-IN REQUIREMENTS WITH PURVEYOR
93.1	1	FAUCET	1/2"	14"	1/2"	14"						
96.1	2	BEER COOLER EVAPORATORS										IW: PC TO CONNECT WASTE LINE TO FUNNEL FLOOR DRAIN
107	1	ELECTRIC BOOSTER HEATER	3/4"	24"								PC TO CONNECT BOOSTER HEATER & CONNECT BOOSTER HEATER TO DISH MACHINE
140	1	TILT KETTLE	1/2"	24"	1/2"	24"						FILL FAUCET
142	1	BAR GLASS RINSER			1/2"	24"						IW: PC TO CONNECT WASTE LINE TO FLOOR SINK
149	1	DRAINBOARD UNIT W/ RACK STORAGE										IW: PC TO CONNECT WASTE LINE TO FLOOR SINK

FOODSERVICE DRAWINGS INDICATE PLUMBING ROUGH-IN/CONNECTION POINTS ONLY FOR EQUIPMENT SPECIFIED UNDER THE KITCHEN EQUIPMENT (SECTION 114000) CONTRACT. ANY ADDITIONAL PLUMBING REQUIREMENTS ARE NOT INDICATED ON FOODSERVICE DRAWINGS. THE PLUMBING CONTRACTOR (DIVISION 22) SHALL FURNISH AND INSTALL PRESSURE REDUCING VALVES, FLOW CONTROLS, BACK FLOW PREVENTION, RPZ (REDUCED PRESSURE ZONE) VALVES, WATER HAMMER ARRESTOR, GATE VALVES, FOR WATER CONNECTIONS AS REQUIRED PER LOCAL CODES.

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION
2025.02.11	1	MEP Layout
2025.02.24	2	MEP Updated layout
2025.06.02	4	MEP UPDATE

FIVE FOUR

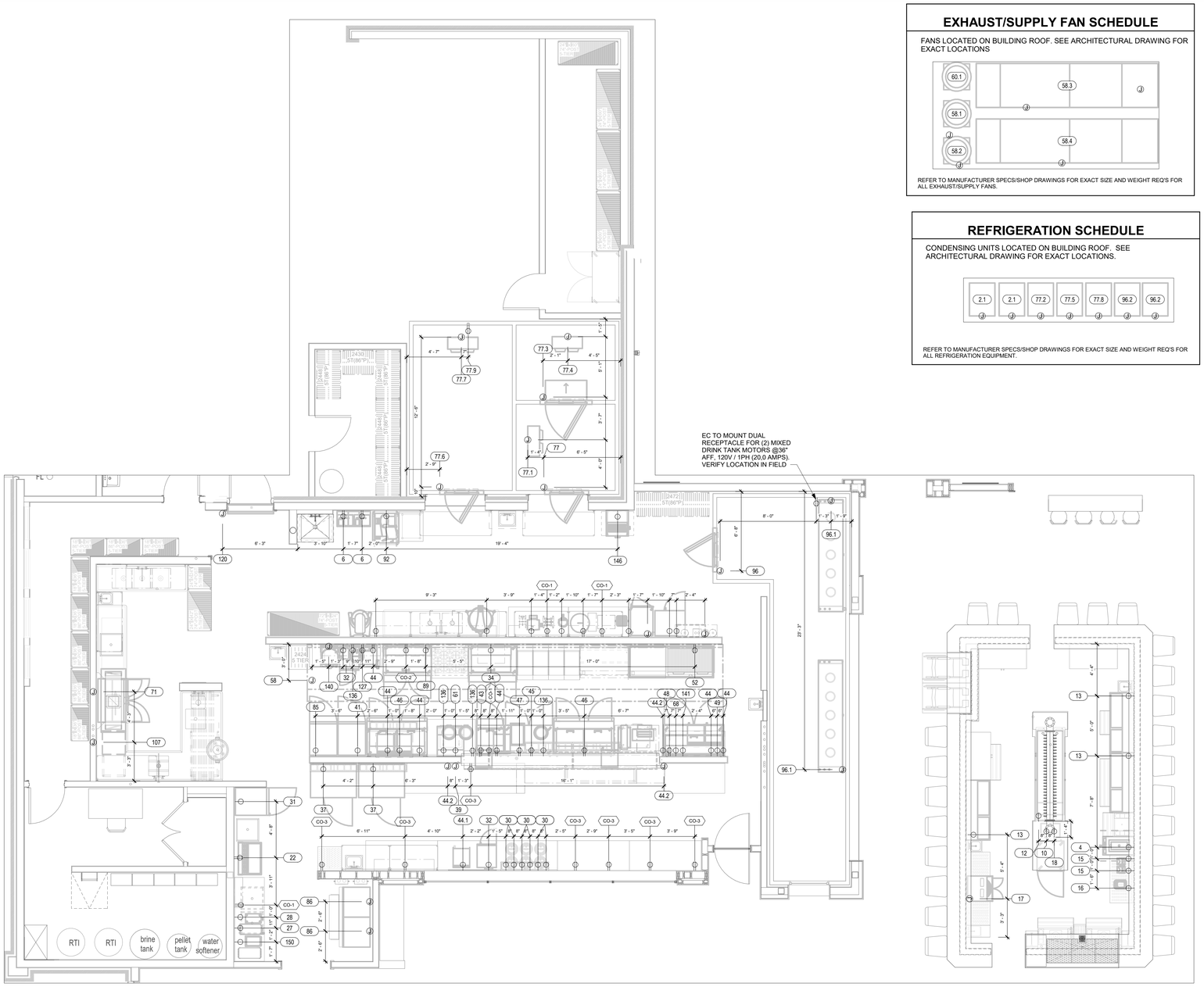
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE: FOODSERVICE PLUMBING ROUGH-IN PLAN

SHEET NUMBER: QF201



FOODSERVICE ELECTRICAL ROUGH-IN PLAN

1/4" = 1'-0"

EXHAUST/SUPPLY FAN SCHEDULE

FANS LOCATED ON BUILDING ROOF. SEE ARCHITECTURAL DRAWING FOR EXACT LOCATIONS

REFER TO MANUFACTURER SPECS/SHOP DRAWINGS FOR EXACT SIZE AND WEIGHT REQ'S FOR ALL EXHAUST/SUPPLY FANS.

REFRIGERATION SCHEDULE

CONDENSING UNITS LOCATED ON BUILDING ROOF. SEE ARCHITECTURAL DRAWING FOR EXACT LOCATIONS.

REFER TO MANUFACTURER SPECS/SHOP DRAWINGS FOR EXACT SIZE AND WEIGHT REQ'S FOR ALL REFRIGERATION EQUIPMENT.

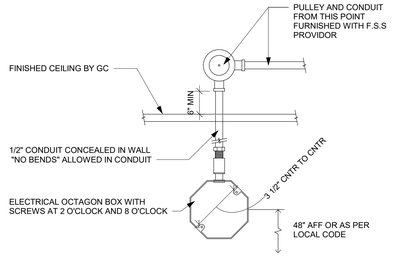
ELECTRICAL LEGEND

- DUPLEX RECEPTACLE
- SINGLE RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE
- QUAD RECEPTACLE
- FLUSH FLOOR MOUNT RECEPTACLE
- JUNCTION BOX - FLOOR/CLG MOUNTED
- JUNCTION BOX - WALL MOUNTED
- JUNCTION BOX - WALL MOUNTED (HORIZONTAL)
- SWITCH
- DATA CONNECTION
- MANUAL FIRE PULL STATION
- DROP CORD MOUNTED FROM CEILING
- CONDUIT STUB UP
- CONDUIT STUB OUT OF WALL
- DEFROST TIME CLOCK
- DISCONNECT
- LIGHT - RECTANGULAR
- LIGHT - ROUND
- MOTOR
- SENSOR (EXHAUST HOOD, TEMP, CO2, LIGHT)
- PLUG MOLD
- ELECTRIC PANEL

ELECTRICAL NOTES (DIVISION 26)

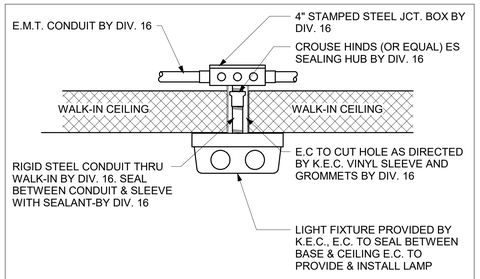
NOTE: THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE ELECTRIC CONTRACTOR (DIVISION 26) AND SHALL BE APPLICABLE ONLY WHERE NOTED ON THE ELECTRIC ROUGH-IN PLAN(S). THE ELECTRIC CONTRACTOR (DIVISION 26) SHALL VERIFY AND COORDINATE THE EXACT ELECTRICAL REQUIREMENTS FOR ALL NIC EQUIPMENT PRIOR TO FINAL ROUGH-IN.

A. FURNISH AND INSTALL CORD AND PLUG SET(S).
B. FURNISH AND INSTALL DEVICE & COVER IN KEC (SECTION 114000) FURNISHED JUNCTION BOX.
C. FURNISH AND INSTALL JUNCTION BOX(S), DEVICE(S), AND COVER(S) IN KEC (SECTION 114000) FURNISHED EQUIPMENT.
D. CONNECT THRU DISPOSER CONTROL TO SOLENOID VALVE AND MOTOR.
E. CONNECT FROM KEC (SECTION 114000) FURNISHED ICE MACHINE TO REMOTE CONDENSER AS REQ'D.
F. CONNECT THRU KEC (SECTION 114000) FURNISHED AIR CURTAIN TO DOOR ACTIVATED MICROSWITCH.
G. CONNECT THRU KEC (SECTION 114000) FURNISHED REMOTE CONTROL SWITCH(ES).
H. FURNISH AND INSTALL SWITCH. CONNECT TO LIGHTS FURNISHED BY KEC (SECTION 114000).
I. CONNECT POWER SUPPLY TO KEC (SECTION 114000) FURNISHED LOAD CENTER. COUNTER SHALL BE PREWIRED AND SHIPPED IN SECTIONS. CONNECT BETWEEN SECTIONS.
J CONNECT TO KEC (SECTION 114000) FURNISHED JUNCTION BOX AT WALK-IN DOOR ASSEMBLY. LIGHT FIXTURE AT DOOR IS PREWIRED TO FACTORY MOUNTED LIGHT SWITCH. MOUNT ADDITIONAL KEC (SECTION 114000) FURNISHED LIGHTS WHERE INDICATED AND CONNECT TO SWITCH. CONDUIT SHALL BE INSTALLED ABOVE WALK-IN AND NOT EXPOSED ON INTERIOR UNLESS REQ'D. CONDUIT PENETRATING WALK-IN SHALL BE NON-METALLIC OR PVC.
K CONNECT KEC (SECTION 114000) FURNISHED TEMPERATURE ALARM SYSTEM. COORDINATE WITH BUILDING SYSTEM(S).
L. INSTALL KEC (SECTION 114000) FURNISHED DEFROST TIMER. CONNECT THRU TIMER TO EVAPORATOR COIL.
M. CONNECT FROM KEC (SECTION 114000) FURNISHED CONDENSING UNIT, THRU DEFROST TIMER, TO EVAPORATOR COIL.
N. FURNISH AND INSTALL NEMA RECEPTACLE WITH WEATHER COVER.
O. CONNECT EXHAUST FAN THRU FAN CONTROL CONTACTS IN DISHWASHER.
P. CONNECT TABLE LIMIT SWITCH TO DRY CONTACT ON KEC (SECTION 114000) FURNISHED DISH MACHINE.
Q. CONNECT DRAIN WATER TEMPERING DEVICE PER MANUFACTURER'S RECOMMENDATIONS.
R. CONNECT TO EXHAUST HOOD LIGHT(S), CONTROL(S), AND EXHAUST FAN(S)/MAKE-UP AIR UNIT(S) AS REQ'D. INTERWIRE HOOD SECTIONS, MOTOR STARTER(S)/DRIVES, AND OVERLOAD PROTECTION AS REQ'D. INSTALL COMPONENTS AND SENSORS SHIPPED LOOSE. REFER TO SYSTEM SHOP DRAWING(S) FOR ADDITIONAL SCHEMATICS.
S. CONNECT 120 VOLT FROM KEC (SECTION 114000) FURNISHED MICRO SWITCH IN FIRE SUPPRESSION SYSTEM CONTROL PANEL TO SHUNT TRIP BREAKER(S) FOR SHUT DOWN OF POWER TO ALL ELECTRICAL DEVICES UNDER HOOD(S) AND 18" OUTSIDE PERIMETER OF HOOD(S). CONNECT FROM MICRO SWITCH TO DIVISION 26 FURNISHED RELAY(S) OR SWITCHES FOR SHUT DOWN/CONTROL OF HOOD LIGHTS, MAKE-UP AIR FAN, AND FIRE ALARM SYSTEM.
T. CONNECT 120 VOLT FROM KEC (SECTION 114000) FURNISHED MICRO SWITCH IN FIRE SUPPRESSION SYSTEM CONTROL PANEL THRU MANUAL RESET RELAY TO ELECTRIC GAS VALVE. PROVIDE CONTROL/INTERWIRING BETWEEN THE FIRE SUPPRESSION SYSTEM AND ASSOCIATED ELECTRICAL GAS SOLENOID VALVES, RESET RELAYS, AND PULL STATIONS AS REQ'D.
U. FURNISH AND INSTALL CONCEALED CONDUIT AND RECESSED OCTAGONAL JUNCTION BOX IN WALL AT 42"-48" AFF FOR REMOTE MANUAL PULL STATION(S). COORDINATE LOCATION(S) WITH FIRE SUPPRESSION SYSTEM CONTRACTOR AND AUTHORITIES HAVING JURISDICTION PRIOR TO ROUGH-IN.
V. PROVIDE 3/4" EMPTY CONDUIT AND JUNCTION BOX FOR DATA CONNECTION. VERIFY EXACT REQS AND TERMINATION POINTS PRIOR TO ROUGH-IN.
W. PROVIDE DEVICE MOUNTED HORIZONTALLY IN BUILDING WALL.



FIRE SUPPRESSION REMOTE PULL STATION - TYP

3/4" = 1'-0"



1. ALL CONDUIT TO BE RUN ON EXTERIOR OF WALK-IN BY DIV. 16 UNLESS BOX IS LOCATED OUTDOORS. THEN CONDUIT IS RUN BELOW CEILING.
2. ALL PENETRATIONS THRU WALK-IN TO BE THOROUGHLY SEALED.
3. ALL LIGHT FICTURES TO BE FURNISHED BY K.E.C.
4. MOUNTING FIXTURES, ALL CONDUIT AND ALL INTER-WIRING BY DIV. 16.
5. ALL LAMPS (BULBS) TO BE FURNISHED BY OTHERS.

WALK-IN LIGHT DETAIL

NOT TO SCALE

FOODSERVICE DRAWINGS INDICATE ELECTRICAL ROUGH-IN/CONNECTION POINTS ONLY FOR EQUIPMENT SPECIFIED UNDER THE KITCHEN EQUIPMENT (SECTION 114000) CONTRACT. ANY ADDITIONAL ELECTRICAL REQUIREMENTS ARE NOT INDICATED ON FOODSERVICE DRAWINGS.

ISSUE FOR PERMIT
REVIEW 10/6/2025

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION
2025.02.11	1	MEP Layout
2025.02.24	2	MEP Updated layout
2025.06.02	4	MEP UPDATE

FIVE FOUR
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE: FOODSERVICE ELECTRICAL ROUGH-IN PLAN

SHEET NUMBER: QF301

FOODSERVICE ELECTRICAL SCHEDULE

ITEM NO.	QTY.	DESCRIPTION	VOLTS	PHASE	AMPS	TYPE	TYPE AFF	ELECTRICAL REMARKS
2.1	2	REMOTE COMPRESSOR, GLYCOL UNITS	208	1	13.4	SR		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
4	1	FROZEN DRINK MACHINE	120	1	30.0	SR	18"	EC TO SUPPLY CORD & PLUG
6	2	CARBONATORS- BY OTHERS	120	1	6.2	DR	105"	BY OTHERS. VERIFY ROUGH-IN REQUIREMENTS
10	1	UNDERCOUNTER REFRIGERATOR	120	1	2.7	SR		STUB UP
12	1	PASS-THRU BACK BAR COOLER- 82"	120	1	4.2	SR	24"	
13	3	FROSTERS W/ CHILLERS- 60"	120	1	3.8	SR	24"	
15	2	BAR/DRINK MIXER	120	1	1.2	DR	38"	
16	1	BAR BLENDER	120	1	15.0	DR	38"	
17	1	UNDERCOUNTER GLASSWASHER	120	1	20.0	JB	24"	
18	1	UNDERCOUNTER WINE COOLER- 18 BOTTLE	120	1	3.9	SR	24"	
22	1	SODA/ICE DISPENSER- BY OTHERS, 32" WIDE	120	1	15.0	DR	24"	BY OTHERS. VERIFY ROUGH-IN REQUIREMENTS. EC TO PROVIDE CORD & PLUG
27	1	COFFEE BREWER - BY OTHERS	120	1	14.0	SR	48"	BY OTHERS. VERIFY ROUGH-IN REQUIREMENTS
28	1	ICED TEA BREWER- BY OTHERS	120	1	16.0	SR	48"	BY OTHERS. VERIFY ROUGH-IN REQUIREMENTS. HORIZONTAL OUTLET. EC TO PROVIDE CORD & PLUG
30	6	INDUCTION RETHERMALIZER,DROP-IN	120	1	6.7	SR	24"	
31	1	REFRIGERATOR, REACH-IN GLASS DOOR	120	1	5.0	SR	24"	
32	2	MICROWAVE CONVECTION OVEN	208	1	16.0	SR	48"	
33	1	FOOD PROCESSOR	120	1	12.0	SR	48"	
34	1	SANDWICH/SALAD PREP REFRIGERATOR- 48"	120	1	3.0	SR	24"	
37	2	WORKTOP REFRIGERATOR, 48"	120	1	1.0	SR	24"	
39	3	HEAT LAMP- 108", DUAL TANDEM	208	1	24.0	JB	62"	EC TO INTERCONNECT FROM JB TO CONTROL BOX MOUNTED UNDER PASS-THRU SHELF, EXACT LOCATION TBD
41	1	REACH-IN REFRIGERATOR	120	1	5.0	SR	84"	
43	1	27" MEGATOP COOLER	120	1	2.3	SR	24"	
44	7	MICROWAVE OVEN	208	1	16.3	SR	78"	
44.1	1	MICROWAVE OVEN	208	1	16.3	JB	60"	EC TO WIRE JB MOUNTED ON PASS-THRU SHELF
44.2	2	MICROWAVE OVEN	208	1	16.3	JB	60"	EC TO WIRE JB MOUNTED ON PASS-THRU SHELF
45	1	UNDERCOUNTER FREEZER W/ CUTTING BOARD TOP	120	1	3.6	SR	24"	
46	2	SANDWICH/SALAD PREP REFRIGERATOR- 60"	120	1	4.0	SR	24"	
47	2	FOOD WARMER (1) NOT SHOWN	120					
48	1	FRENCH FRY WARMER	120	1	5.0	DR	48"	HORIZONTAL
49	1	SANDWICH/SALAD PREP REFRIGERATOR- 60"	120	1	4.0	SR	24"	
52	1	REFRIGERATED EQUIPMENT BASE STAND	120	1	3.0	SR	24"	
58	1	EXHAUST HOOD	120	1	15.0	JB		JB DOWN FROM ABOVE. EC TO WIRE JB TO TOP OF HOOD. VERIFY ALL EQUIPMENT REQUIREMENTS W. MANUFACTURER'S SHOP DRAWINGS
58.1	1	ROOF MOUNTED EXHAUST FAN	208	3	7.5	JB		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
58.2	1	ROOF MOUNTED EXHAUST FAN	208	3	16.7	JB		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
58.3	1	MUA UNIT	208	3	50.0	JB		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
58.4	1	MUA UNIT	208	3	50.0	JB		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
59.1	1	EXHAUST/MUA CONTROL PANEL	120	1	16.0	JB		JB DOWN FROM ABOOVE. VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS.
60.1	1	ROOF MOUNTED EXHAUST FAN	120	1	9.0	JB		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
61	1	CHIP WARMER	120	1	7.0	DR	24"	
71	1	CONVEYOR DISHWASHER	208	3	60.0	JB	67"	EC TO CONNECT DISHWASHING MACHINE. EC TO PROVIDE RELAY BOX, EC TO WIRE EXHAUST FAN TO RELAY BOX THEN TO DISH MACHINE FAN CONTROL
77	1	WALK-IN COOLER	120	1	15.0	JB		JB DOWN FROM ABOVE, VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS
77.1	1	COOLER EVAPORATOR	120	1	1.6	JB	104"	
77.2	1	COOLER COMPRESSOR- REMOTE	208	1	7.0	JB		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
77.3	1	WALK-IN FREEZER	120	1	15.0	JB		JB DOWN FROM ABOVE, VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS
77.4	1	FREEZER EVAPORATOR	208	1	9.8	JB	104"	
77.5	1	FREEZER COMPRESSOR- REMOTE	208	1	13.4	SR		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
77.6	1	WALK-IN COOLER	120	1	15.0	JB		JB DOWN FROM ABOVE, VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS
77.7	1	COOLER EVAPORATOR	208	1	1.6	JB	104"	
77.8	1	COOLER COMPRESSOR- REMOTE	208	1	11.4	JB		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
77.9	1	WALK IN FREEZER HEAT TAPE - NOT SHOWN ON DRAWING	120	1	0.8	DR		WRAP DRAIN WITH HEAT TAPE AND INSULATE
85	1	REACH-IN FREEZER	120	1	9.0	SR	84"	
86	2	ICE MACHINE	208	1	13.2	JB	80"	
87	1	COOK & HOLD OVEN, SMOKER	208	1	31.4	SR	48"	EC TO FURNISH CORD & PLUG, EC TO VERIFY UNIT IS SWITCHED TO THE 208V MODE
88	1	DOUBLE STACK CONVECTION OVEN	208	1	27.0	SR	40"	
89	1	SANDWICH/SALAD PREP REFRIGERATOR- 48"	120	1	3.0	SR	24"	
92	1	ELECTRIC FOOD SLICER	120	1	2.5	SR	48"	
96	1	WALK-IN KEG COOLER	120	1	15.0	JB		JB DOWN FROM ABOVE, VERIFY ALL ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS
96.1	2	BEER COOLER EVAPORATORS	120	1	2.9	JB	104"	
96.2	2	BEER COOLER COMPRESSOR - GLYCOL UNITS	208	1	13.4	SR		LOCATION TBD BY ARCHITECT. VERIFY ROUGH-IN REQUIREMENTS
107	1	ELECTRIC BOOSTER HEATER	208	3	75.0	JB	24"	
118	1	SALAD DRYER	120	1	2.7	SR	24"	
119	1	FOOD BLENDER	120	1	15.0	SR	48"	
120	1	BACK DOOR AIR CURTAIN	120	1	9.0	JB	96"	ELECTRICAL CONTRACTOR TO INTERCONNECT WITH DOOR PLUNGER
122	1	ELECTRIC JUICER	120	1	4.3	SR	48"	
127	1	DIPPER WELL	120	1	3.3	DR	46"	
134	1	RICE COOKER- BY OTHERS	120	1	16.0	DR	48"	BY OTHERS. VERIFY ROUGH-IN REQUIREMENTS
136	4	COUNTERTOP RETHERMALIZER	120	1	6.7	DR	48"	HORIZONTAL
137	1	30 QT. FLOOR MIXER	120	1	16.0	DR	12"	
140	1	TILT KETTLE	208	3	27.2	JB	24"	
141	1	ELECTRIC CONVEYOR TOASTER	120	1	12.5	SR	48"	HORIZONTAL
146	1	BREAD SLICER	120	1	12.0	SR	24"	NEED MODEL # FOR ACCURATE ELECTRICAL SPECS
150	1	REFRIGERATED BEVERAGE DISPENSER, BUBBLER	120	1	2.8	SR	24"	

CONVENIENCE OUTLET SCHEDULE

ITEM NO.	QTY.	TYPE	NEMA	TYPE AFF	ELECTRICAL REMARKS
CO-1	5		5-15R		
CO-2	1	ELECTRICAL RECEPTACLE	5-15R	78"	
CO-3	7	ELECTRICAL RECEPTACLE	5-15R		

ISSUE FOR PERMIT
REVIEW 10/6/2025

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION
2025.06.02	4	MEP UPDATE

FIVE FOUR

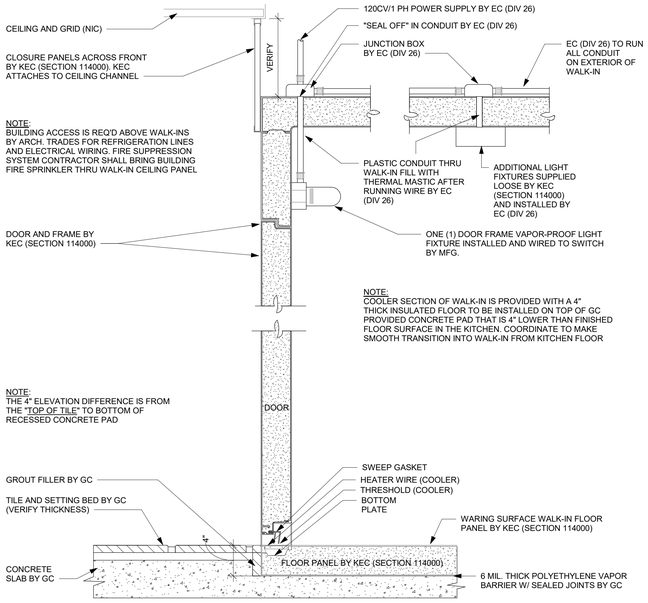
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

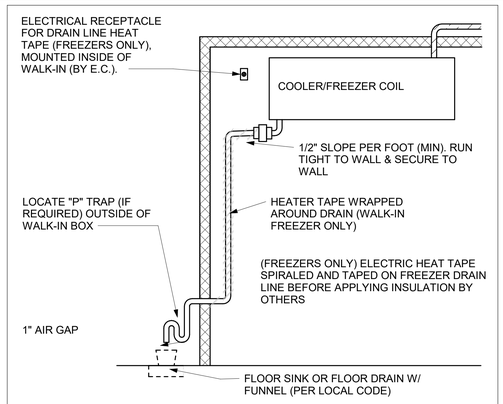
SHEET TITLE: FOODSERVICE ELECTRICAL SCHEDULES

SHEET NUMBER: QF302



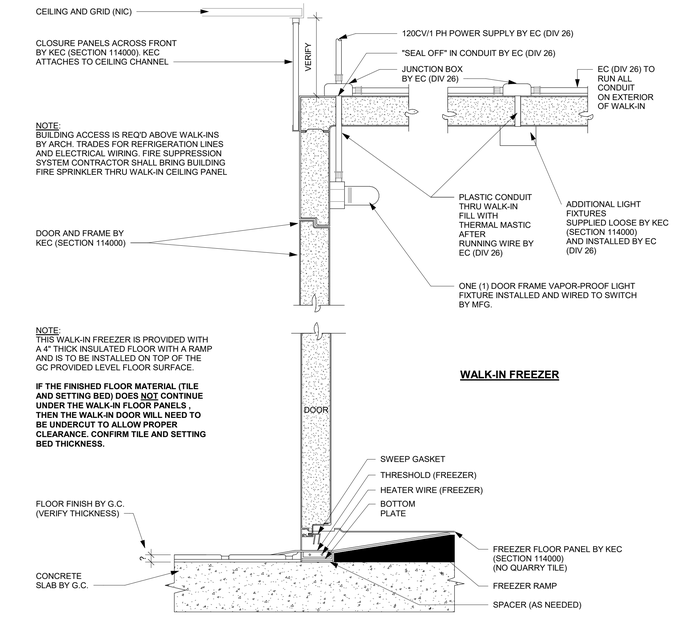
WALK-IN COOLER ONLY IN 4" RECESS - TYP

1 1/2" = 1'-0"



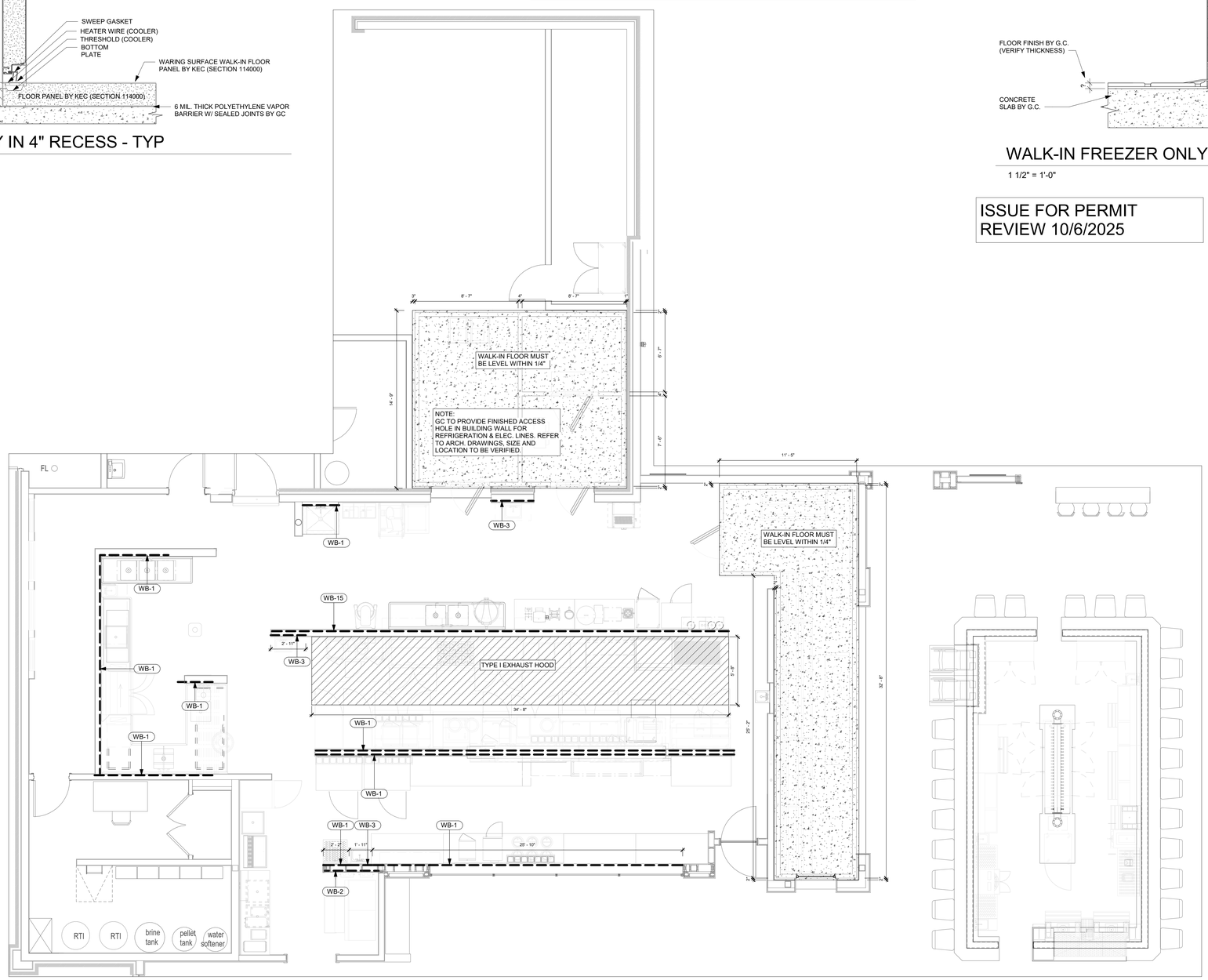
WALK-IN DRAIN LINE DETAIL

NOT TO SCALE



WALK-IN FREEZER ONLY IN 4" RAMP - TYP

1 1/2" = 1'-0"



FOODSERVICE SPECIAL CONDITIONS PLAN

1/4" = 1'-0"

ISSUE FOR PERMIT
REVIEW 10/6/2025

SPECIAL CONDITIONS LEGEND

- WB-# — WALL BLOCKING
- PROPOSED STRUCTURAL SUPPORT
- NON-COMBUSTIBLE WALL

SPECIAL CONDITIONS NOTES

NOTE: THE FOLLOWING ADDITIONAL REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR (OR AS SPECIFIED OTHERWISE) AND SHALL BE APPLICABLE ONLY WHERE NOTED ON THE PLAN(S). THE GENERAL CONTRACTOR SHALL VERIFY AND COORDINATE THE EXACT BUILDING REQUIREMENTS FOR ALL N/C EQUIPMENT PRIOR TO CONSTRUCTION.

A. BUILDING FLOOR BENEATH WALK-IN MUST BE LEVEL WITHIN PLUS OR MINUS 1/8". REFER TO DETAIL #X/QFXXX.
B. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE X" DEEP FLOOR DEPRESSION FROM TOP OF FINISHED FLOOR FOR WALK-IN. REFER TO DETAIL #X/QFXXX.
C. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE PRESSURE TREATED WOOD THERMAL BARRIER CENTERED BENEATH WALK-IN WALLS. REFER TO DETAIL #X/QFXXX.
D. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE INSULATED FLOOR SLAB BENEATH WALK-IN. REFER TO DETAIL #X/QFXXX.
E. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE X" DEEP FLOOR DEPRESSION FROM FINISHED FLOOR FOR INSTALLATION OF FLOOR TROUGH BY PLUMBING CONTRACTOR (DIVISION 26). GENERAL CONTRACTOR TO BACK-FILL WITH GROUT. REFER TO DETAIL #X/QFXXX.
F. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL FURNISH AND INSTALL ROOF PAD FOR KEC (SECTION 114000) FURNISHED REFRIGERATION RACK.
G. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL FURNISH AND INSTALL CONCRETE PAD FOR KEC (SECTION 114000) FURNISHED REFRIGERATION RACK/CONDENSING UNITS.
H. REFRIGERATION CONTRACTOR SHALL FURNISH AND COORDINATE LOCATION OF EQUIPMENT RAILS AND PIPE CURBS FOR ROOFTOP CONDENSING UNIT(S).
I. HVAC/MECHANICAL CONTRACTOR (DIVISION 23) SHALL INSTALL KEC (SECTION 114000) FURNISHED RAILS & ROOF CURBS FOR EXHAUST FAN(S) AND MAKE-UP AIR UNIT(S).
J. KEC (SECTION 114000) SHALL FURNISH AND INSTALL RAILS AND ROOF CURBS FOR EXHAUST FAN(S) AND MAKE-UP AIR UNIT(S). GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL FLASH-IN RAILS AND ROOF CURBS.
K. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE STRUCTURAL REINFORCEMENT ABOVE CEILING AS REQ'D FOR KEC (SECTION 114000) FURNISHED EQUIPMENT.
L. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE MINIMUM VERTICAL CLEARANCE OF X'-X" AT WALK-IN.
M. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE MINIMUM VERTICAL CLEARANCE OF X'-X" AT EXHAUST HOOD.
N. GENERAL CONTRACTOR AND/OR SUBDIVISIONS SHALL PROVIDE MINIMUM VERTICAL CLEARANCE OF X'-X" AT ICE MAKER.

WALL BLOCKING NOTES (DIVISION 6)

WB-1	24" AFF TO 96" AFF FOR GENERAL PURPOSE
WB-2	18" AFF TO 30" AFF FOR WATER FILTER
WB-3	30" AFF TO 60" AFF FOR HAND SINK
WB-4	48" AFF TO 60" AFF FOR WALL SHELF/MOP RACK/POT FILL/PRE-RINSE
WB-5	48" AFF TO 78" AFF FOR 2-TIER WALL SHELVES
WB-6	48" AFF TO 84" AFF FOR RACK SHELF
WB-7	54" AFF TO 90" AFF FOR WALL CABINET/SALAMANDER
WB-8	60" AFF TO 78" AFF FOR WATER FILTER
WB-9	66" AFF TO 84" AFF FOR POT RACK
WB-10	72" AFF TO CEILING FOR FIRE SUPPRESSION/HOOD CONTROL
WB-11	78" AFF TO 114" AFF FOR EXHAUST HOOD
WB-12	84" AFF TO 102" AFF FOR WATER FILTER/AIR CURTAIN
WB-13	102" AFF TO 114" AFF FOR CLG MOUNT AIR CURTAIN
WB-14	VERIFY WITH ARCHITECT FOR BACK BAR SUPERSTRUCTURE
WB-15	FINISHED FLOOR TO FINISHED CEILING

NOTE: GENERAL CONTRACTOR AND/OR SUBDIVISIONS TO PROVIDE 3/4" WALL BACKING FOR WALL MOUNTED EQUIPMENT. MATERIAL MUST MEET THE SIZE AND LOAD REQ'S OF THE SPECIFIED EQUIPMENT AND SHALL BE COMPLIANT WITH ALL LOCAL CODES, LAWS, AND REGULATIONS. PROVIDE METAL BACKING OR OTHER ACCEPTABLE MATERIAL AT EXHAUST HOODS AND FIRE RATED WALLS/ASSEMBLIES AS REQ'D BY THE AUTHORITY HAVING JURISDICTION. ALL WALL BACKING SHALL BE CONCEALED BEHIND WALL FINISH. NO EXPOSED WALL BACKING SHALL BE ACCEPTED. IN THE EVENT THE KEC MUST REPAIR OR REPLACE THE PROVIDED BACKING, THE KEC WILL NOT BE LIABLE FOR ANY DELAYS OR ADDED COSTS.

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION
2025.02.11	1	MEP Layout
2025.02.24	2	MEP Updated layout
2025.06.02	4	MEP UPDATE

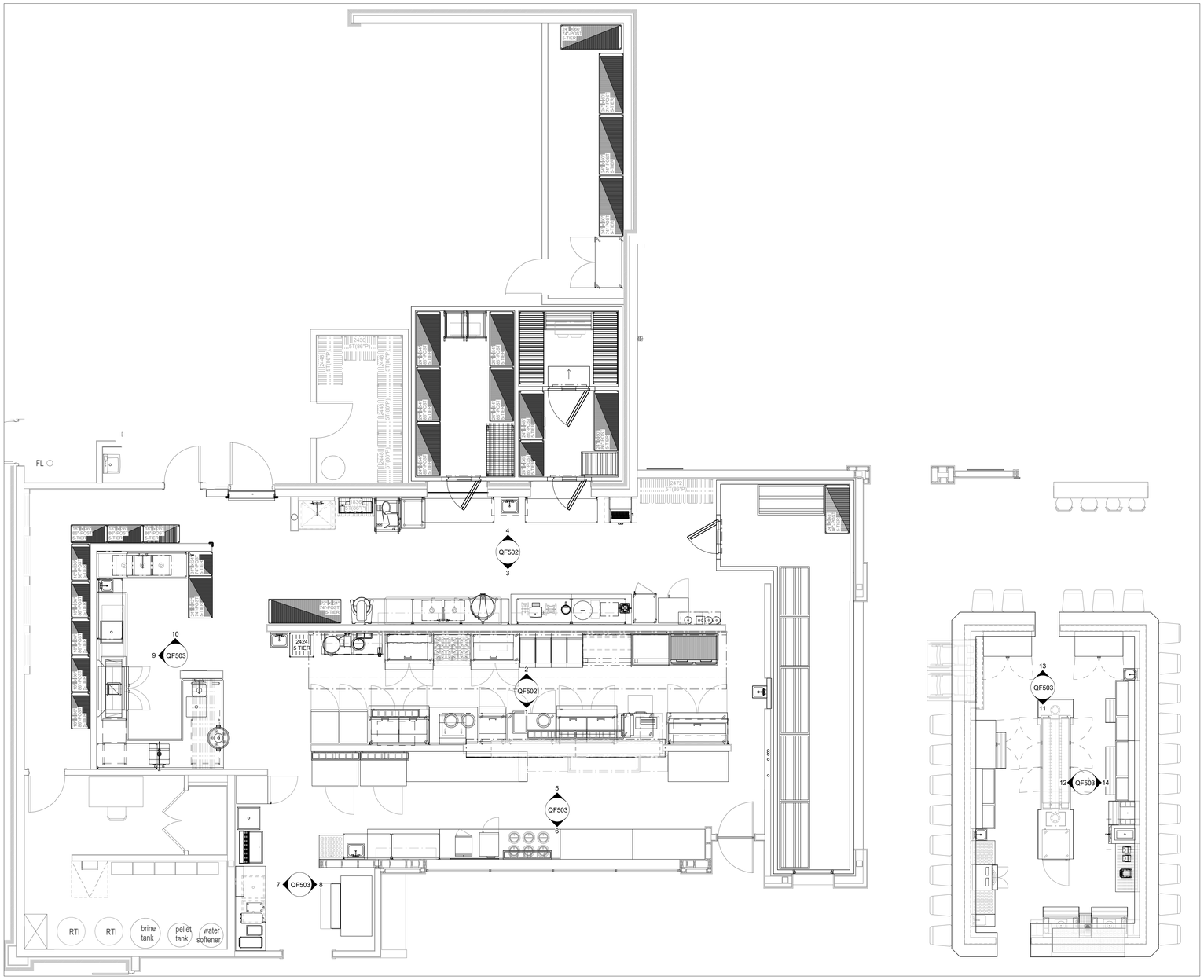
FIVE FOUR
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE:
FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE:
FOODSERVICE SPECIAL CONDITIONS PLAN

SHEET NUMBER:
QF401



FOODSERVICE KEY ELEVATION PLAN

1/4" = 1'-0"

ISSUE FOR PERMIT
REVIEW 10/6/2025

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION
2025.02.11	1	MEP Layout
2025.02.24	2	MEP Updated layout
2025.06.02	4	MEP UPDATE

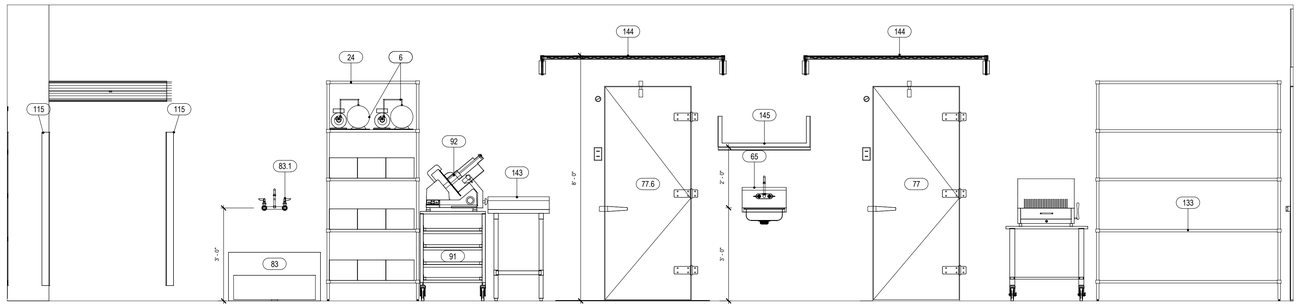
FIVE FOUR

301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE:	
FOODSERVICE EQUIPMENT	
DATE: 11/12/2024	PROJECT #: 2024136
DRAWN BY: JLH	APPROVED BY: NLB

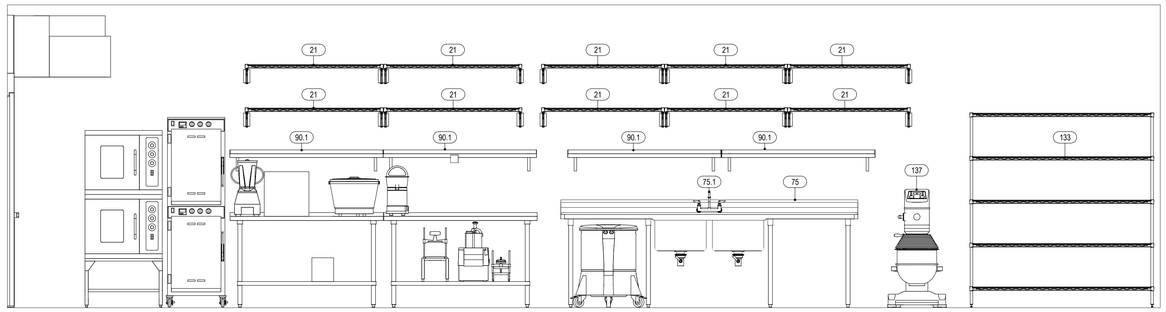
SHEET TITLE:
FOODSERVICE KEY ELEVATION PLAN

SHEET NUMBER:
QF501



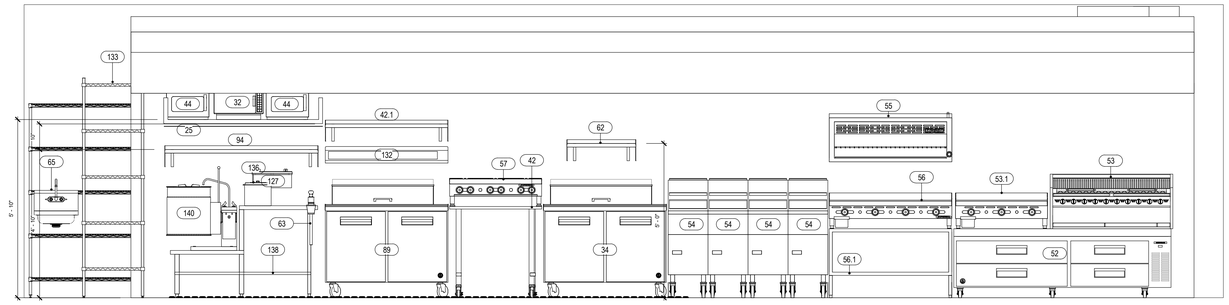
4 ELEVATION- MOP/WALK-IN AREA

1/2" = 1'-0"



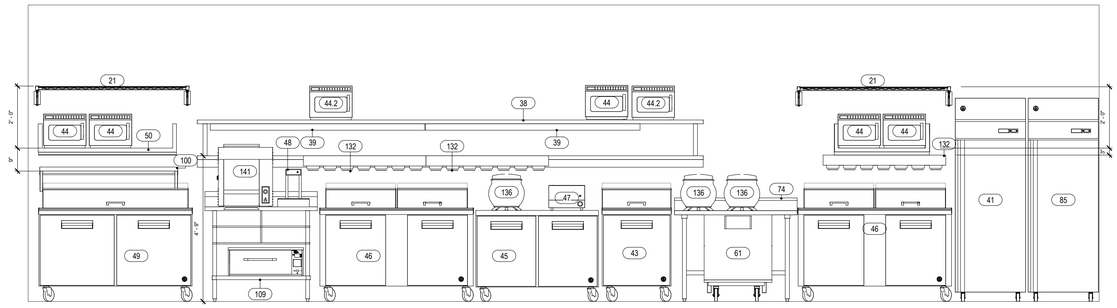
3 ELEVATION- PREP AREA

1/2" = 1'-0"



2 ELEVATION- COOKLINE

1/2" = 1'-0"



1 ELEVATION- COOKLINE/PASS-THRU

1/2" = 1'-0"

ISSUE FOR PERMIT
REVIEW 10/6/2025

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION
2025.02.11	1	MEP Layout
2025.02.24	2	MEP Updated layout
2025.06.02	4	MEP UPDATE

FIVE FOUR

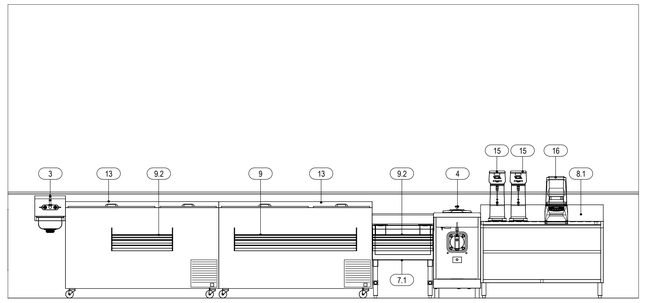
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

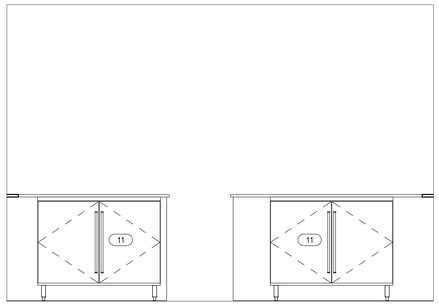
SHEET TITLE: FOODSERVICE ELEVATIONS

SHEET NUMBER: QF502



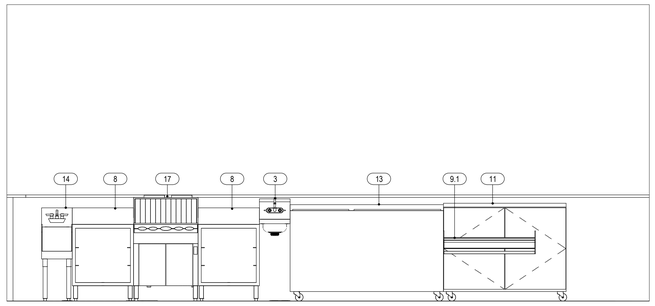
14 BAR AREA- EAST

1/2" = 1'-0"



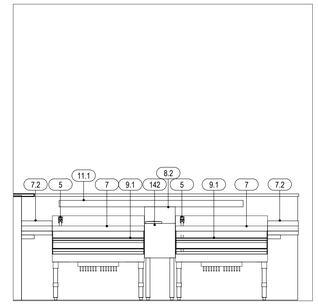
13 BAR AREA- NORTH

1/2" = 1'-0"



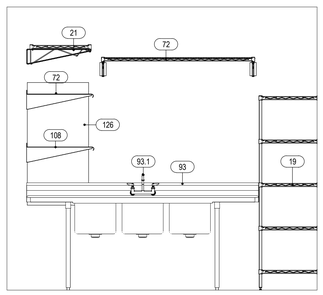
12 BAR AREA- WEST

1/2" = 1'-0"



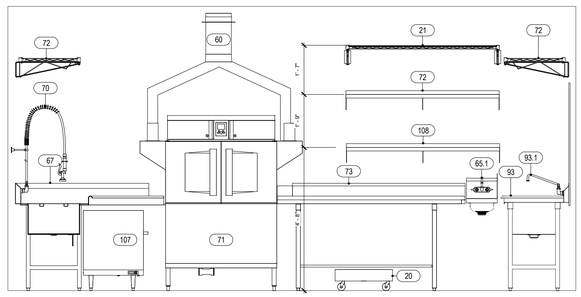
11 BAR AREA- SOUTH

1/2" = 1'-0"



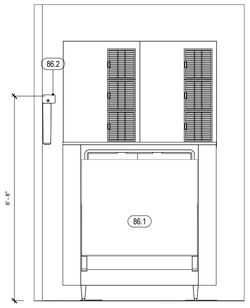
10 DISH AREA- B

1/2" = 1'-0"



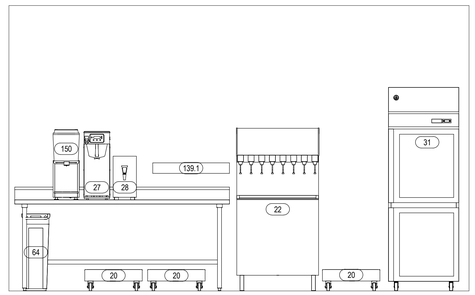
9 DISH AREA

1/2" = 1'-0"



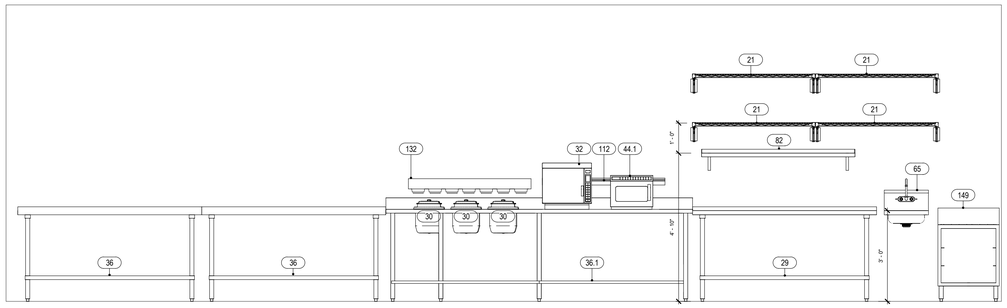
8 ICE MACHINE AREA

1/2" = 1'-0"



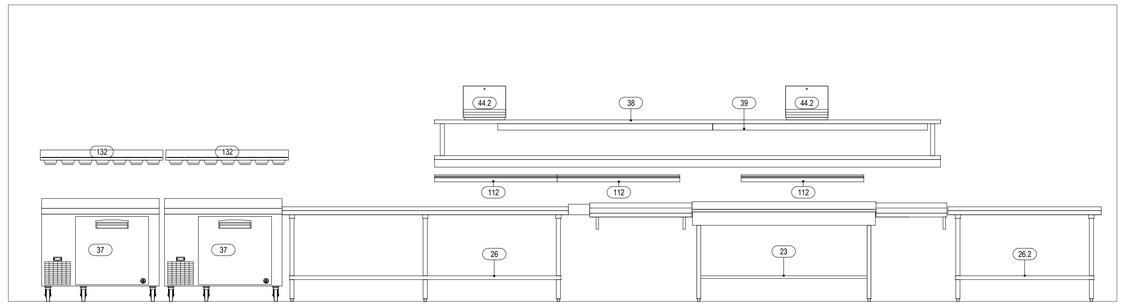
7 SERVER BEVERAGE AREA- A

1/2" = 1'-0"



6 ELEVATION- EXPO AREA

1/2" = 1'-0"



5 ELEVATION- EXPO/PASS-THRU AREA

1/2" = 1'-0"

ISSUE FOR PERMIT
REVIEW 10/6/2025

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION
2025.02.11	1	MEP Layout
2025.02.24	2	MEP Updated layout
2025.06.02	4	MEP UPDATE

FIVE FOUR

301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT	
DATE: 11/12/2024	PROJECT #: 2024136
DRAWN BY: JLH	APPROVED BY: NLB

SHEET TITLE:
FOODSERVICE ELEVATIONS

SHEET NUMBER:
QF503

HOOD INFORMATION

HOOD NO.	MARK	MODEL	HOOD DIMENSIONS (IN.)			HOOD CONSTR.	COOKING LOAD / DUTY RATING	EXHAUST						SUPPLY		HANGING WEIGHT LBS.	SECTION LOCATION
			LENGTH	WIDTH	HEIGHT			TOTAL CFM	COLLAR(S)					MUA CFM	AC CFM		
									WIDTH	LENGTH	DIA.	CFM	S.P.				
1	KEH-1	XBEW-138.67-S	138.67	54	24	430 SS WHERE EXPOSED	HEAVY	2427	10	23		2427	0.394	1955		405	LEFT
2	KEH-1	XBEW-138.67-S	138.67	54	24	430 SS WHERE EXPOSED	HEAVY	2305	10	22		2305	0.379	1955		405	MIDDLE
3	KEH-1	XBEW-138.67-S	138.67	54	24	430 SS WHERE EXPOSED	HEAVY	2600	9	25		2600	0.467	1955		405	RIGHT

HOOD INFORMATION

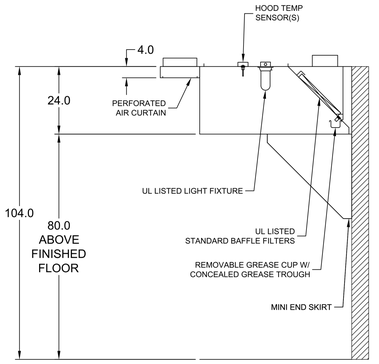
HOOD NO.	MARK	LIGHTING DETAILS			GREASE FILTRATION DETAILS				UTILITY CABINET(S)				
		FIXTURE TYPE BULB / LAMP INFO	QTY	FOOT CANDLES	TYPE / MODEL MATERIAL	QTY	SIZE (IN.)		LOCATION	FIRE SYSTEM		CONTROLS	
							L	H		TYPE	SIZE	MODEL	INTERFACE
1	KEH-1	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	6	49.77	BAFFLE STAINLESS STEEL	6	16	20					
						2	20						
2	KEH-1	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	6	49.77	BAFFLE STAINLESS STEEL	6	16	20					
						2	20						
3	KEH-1	INCANDESCENT (GLOBE) 100W A19 (BULBS NOT INCL.)	6	49.77	BAFFLE STAINLESS STEEL	6	16	20					
						2	20						

SUPPLY PLENUM INFORMATION

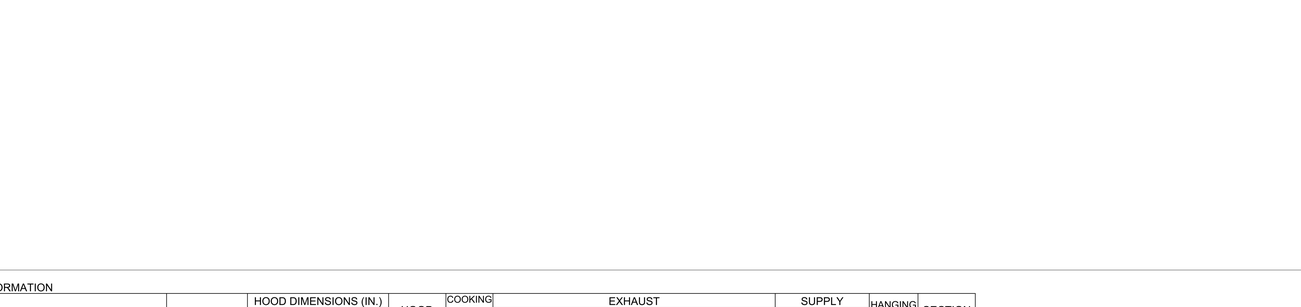
HOOD NO.	MARK	POS.	TYPE	SIZE (IN.)			INSULATED	DAMPER(S)	LED LIGHT(S)		TOTAL CFM	TOTAL S.P.	COLLARS							
				L	W	H			SUPPLIED	QTY			TYPE	MOUNTING	QTY	W	L	DIA.	CFM	VEL.
1	KEH-1	FRONT	ASP	138.67	14	4	NO	YES	NO		1955	0.01	MUA	FACTORY	4	12	24		489	245
2	KEH-1	FRONT	ASP	138.67	14	4	NO	YES	NO		1955	0.01	MUA	FACTORY	4	12	24		489	245
3	KEH-1	FRONT	ASP	138.67	14	4	NO	YES	NO		1955	0.01	MUA	FACTORY	4	12	24		489	245

HOOD OPTIONS

UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625
BACK INTEGRAL AIR SPACE - 3 IN WIDE
CONTINUOUS CAPTURE
FACTORY MOUNTED EXHAUST COLLAR(S)
LEFT MINI END SKIRT - 30.00 IN HIGH 30.00 IN TOP WIDTH 4.0 IN BOTTOM WIDTH
RIGHT MINI END SKIRT - 30.00 IN HIGH 30.00 IN TOP WIDTH 4.0 IN BOTTOM WIDTH
PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY
STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH



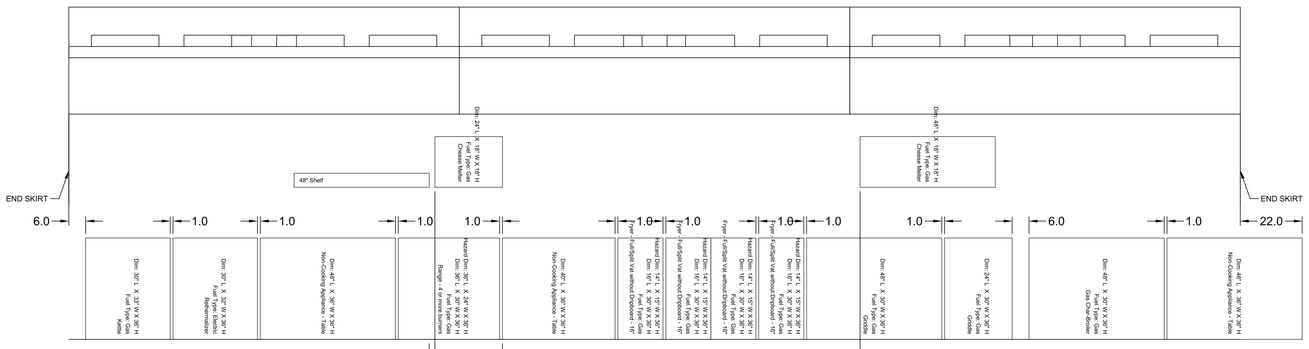
MARK: KEH-1 (LAST HOOD IN ROW)
SECTION VIEW



MARK: KEH-1 - SECTION 1
PLAN VIEW

MARK: KEH-1 - SECTION 2
PLAN VIEW

MARK: KEH-1 - SECTION 3
PLAN VIEW

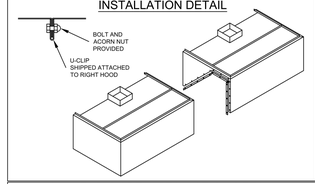


MARK: KEH-1 - SECTION 1
ELEVATION VIEW

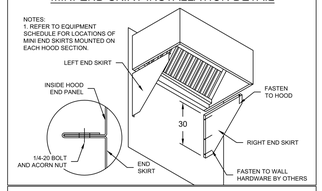
MARK: KEH-1 - SECTION 2
ELEVATION VIEW

MARK: KEH-1 - SECTION 3
ELEVATION VIEW

CONTINUOUS CAPTURE PLENUM INSTALLATION DETAIL



MINI-END SKIRT INSTALLATION DETAIL



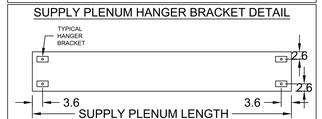
HOOD HANGING HEIGHT FOR FIRE SYSTEMS

VERIFICATION OF HOOD HANGING HEIGHT ABOVE FINISHED FLOOR (A.F.F.) IS REQUIRED FOR CORRECT PLACEMENT OF FIRE SYSTEM NOZZLES.

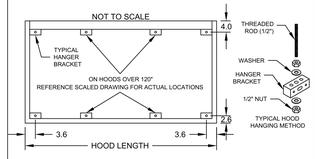
☐ RECOMMENDED HANGING HEIGHT = 80" FROM FINISHED FLOOR TO LOWER FRONT EDGE OF HOOD.

☐ OTHER HANGING HEIGHT = _____" FROM FINISHED FLOOR TO LOWER EDGE OF HOOD.

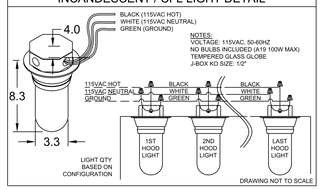
SUPPLY PLENUM HANGER BRACKET DETAIL



HOOD HANGER BRACKET DETAIL



INCANDESCENT / CFL LIGHT DETAIL



FIRE SYSTEM MARK: 0

ACCUREX

FIVE FOUR
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE: HOODS

SHEET NUMBER: QF800

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

PROJECT 9/10/2025 | MARK KEH-1

FIVE FOUR LEES SUMMIT R1

UL NSF

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

Direct Drive Upblast Centrifugal Roof Exhaust Fan

MARK INFORMATION		FAN INFORMATION									SOUND INFORMATION					MOTOR INFORMATION								
MARK	QTY	MODEL	DRIVE TYPE	VOLUME (CFM)	EXTERNAL SP (IN. WG)	TOTAL EXTERNAL SP (IN. WG)	FAN SPEED (RPM)	OUTLET VELOCITY (FT/MIN)	FEI	TOTAL WEIGHT (LB)	INLET dBA	INLET SONES	INLET SONES (SPHERICAL)	OUTLET dBA	OUTLET SONES	OPERATING POWER (HP)	MOTOR SIZE (HP)	FEP INPUT POWER (KW)	ENCLOSURE	VOLTAGE	CYCLE	PHASE	EC MOTOR	NEC FLA*
KEF-1	1	XCUE-200HP-A	Direct	4,732	1.75	2.097	1,725	1,773.26	1.05	169	78.8	28.06	0	0	0	3.61	5	2.99	OP	208	60	3	No	16.7

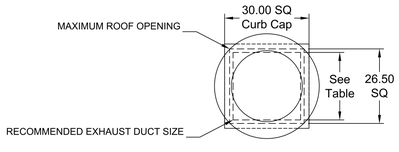
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

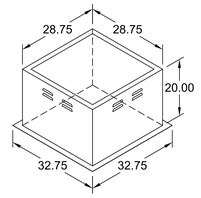
KEF-1 : SELECTED OPTIONS AND ACCESSORIES
Motor VFD Rated without Shaft Grounding Protection
One piece fully welded windband
Tapered bushing wheel hub
Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95)
Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480)
Curb Cap Size - 30 Square
UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762)
Switch, NEMA-3R, Toggle,
Hinge, Factory Installed
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
Grease Trap (PN 475538)
Aluminum Wheel Material

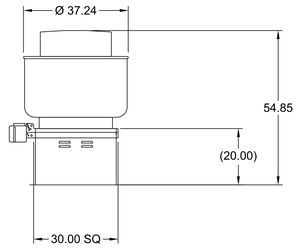
DUCT TYPE	SIZE
STANDARD	24 SQ
FIRE-WRAPPED	16 SQ

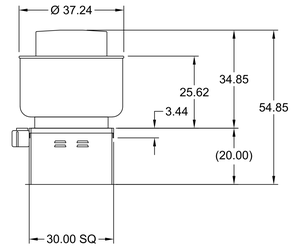
DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.









Direct Drive Upblast Centrifugal Roof Exhaust Fan

MARK INFORMATION		FAN INFORMATION									SOUND INFORMATION					MOTOR INFORMATION								
MARK	QTY	MODEL	DRIVE TYPE	VOLUME (CFM)	EXTERNAL SP (IN. WG)	TOTAL EXTERNAL SP (IN. WG)	FAN SPEED (RPM)	OUTLET VELOCITY (FT/MIN)	FEI	TOTAL WEIGHT (LB)	INLET dBA	INLET SONES	INLET SONES (SPHERICAL)	OUTLET dBA	OUTLET SONES	OPERATING POWER (HP)	MOTOR SIZE (HP)	FEP INPUT POWER (KW)	ENCLOSURE	VOLTAGE	CYCLE	PHASE	EC MOTOR	NEC FLA*
KEF-2	1	XCUE-160-A	Direct	2,600	1.5	2.08	1,725	1,780	1.28	117	76.02	25.37	0	0	0	1.77	2	1.53	OP	208	60	3	No	7.5

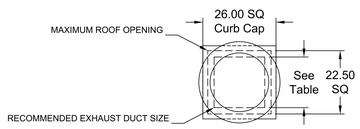
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

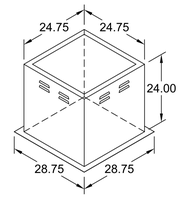
KEF-2 : SELECTED OPTIONS AND ACCESSORIES
Motor VFD Rated without Shaft Grounding Protection
One piece fully welded windband
Tapered bushing wheel hub
Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95)
Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480)
Curb Cap Size - 26 Square
UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762)
Switch, NEMA-3R, Toggle,
Hinge, Factory Installed
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)
Fastener Material: Stainless
Grease Trap (PN 475538)
Aluminum Wheel Material

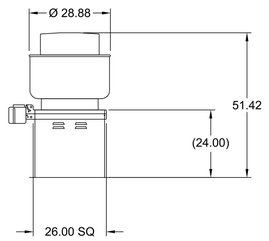
DUCT TYPE	SIZE
STANDARD	18 SQ
FIRE-WRAPPED	12 SQ

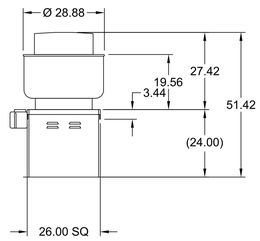
DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB.
CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.









ACCUREX

FIVE FOUR
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT FIVE FOUR LEES SUMMIT R1
9/10/2025
MARK KEF-1 & KEF-2

UL NSF

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE: HOODS

SHEET NUMBER: QF900

EQUIPMENT SCHEDULE

Tempered Make-Up Air Unit

Mark: MUA-1

Qty	Accurex Model	Volume	External SP	Total SP	MCA	MOP	Weight	SCCR
1	XDGX-P122-H22-D1-10	5,864 CFM	0.5 in. wg	1.773	53.2	70	2,551 lb	NA

Motor Information

Size	V/C/P	Enclosure	Motor with Shaft Gounding	Motor RPM	Operating Power
5 hp	208/60/3	OP	No	1200	2.71 hp

Heating

Type	Gas Type	Temperature			Energy			Connection Gas (IN)	Building Gas Pressure	Control Access	Gas Pressure	
		Winter DB	Max Δ	Max LAT	Input	Output	Efficiency				Min	Max
DirectGas	Natural	5 F	58.1 F	63.3 F	400.0 MBH	368.0 MBH	92%	09a	1_2_PSI	No		5 PSI

Cooling

Cooling Type	Coil Model	Rows Deep	Fins Per Inch	Face Velocity	Total Energy	Sensible Energy	Entering Air (F)		Leaving Air (F)	
							Dry	Wet	Dry	Wet
0	DX38S02S10-36x55-RH	2	10	NA	135.1 MBH	129.3 MBH	97 F	79 F		

Coil SP	Refrigerant	Suction Temp	Liquid Temp	Super Heat	Code 18/19	Suction Conn Qty / Size	Liquid Conn Qty / Size
NA	R_454b	55 F			0	NA	NA

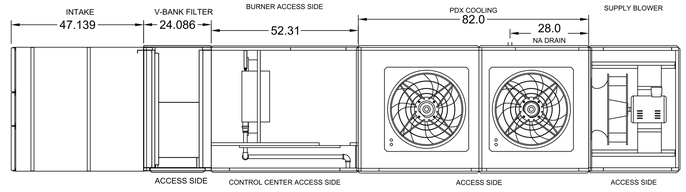
Outlet Sound Power By Octave Band

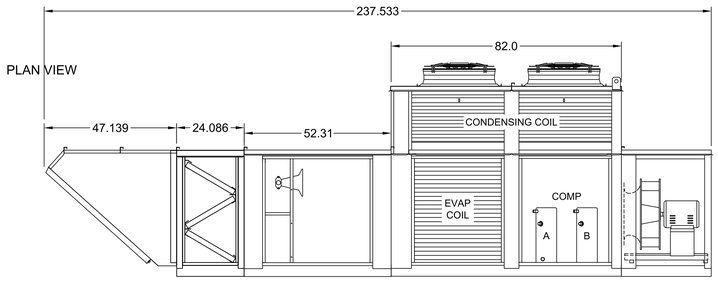
62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
0	0	0	0	0	0	0	0	0	0	0

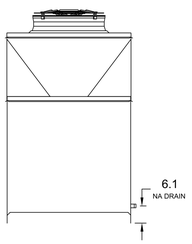
- LwA - A weighted sound power level based on ANSI S1.4
- dBA - A weighted sound pressure level base on 11.1 dB attenuation per octabe band at 5.0 ft.
- Noise Criteria (NC) based on an average attenuation of 11.5 dB per octabe band at 5.0 ft.

OPTIONS AND ACCESSORIES

Make Up Air
Air Flow Arrangement: Variable Volume
Weatherhood: Aluminum Mesh, 16x25x2 - (4), 12x25x2 - (2)
Filter Section: Aluminum, 20x20x2 - (6)
Damper: Inlet
Outdoor Air Intake Position: End
Return Air Intake Position: None
Discharge Position: Bottom
Coating: Galvanized
Cooling Coil Coating - None
Insulation: Double Wall - Tempering On
Supply Fan Control: VFD
VFD Control: 0-10 VDC By Others
Hinged Access
Access Side: Right-Hand
Unit Weight: 2,551 lb
Control Center
Freeze Protection
Heat Inlet Air Sensor
Cool Inlet Air Sensor
Unit Controls: Microprocessor







ELEVATION VIEW

END VIEW

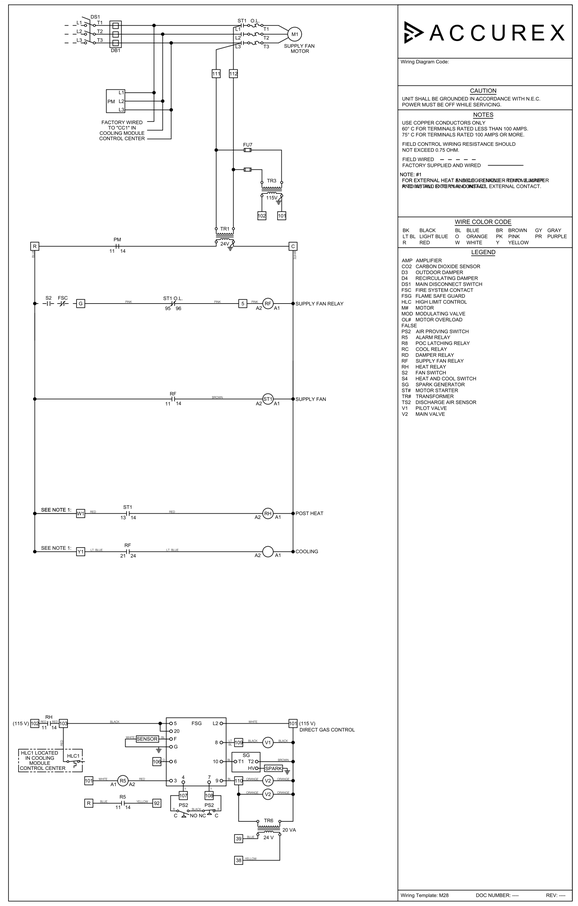
NOTE: Roof Opening Requirements:

Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides.
For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.

Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb.
For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.

NOTE: The weatherhood and filter sections of the make-up air unit are not supported by the curb.
This is by design, in order to help alleviate water infiltration issues.

FOOTPRINT



ACCUREX

Wiring Diagram Code:

CAUTION
UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES
USE COPPER CONDUCTORS ONLY
60° C FOR TERMINALS RATED LESS THAN 100 AMPS.
75° C FOR TERMINALS RATED 100 AMPS OR MORE.

FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM.

FIELD WIRED
FACTORY SUPPLIED AND WIRED

NOTE #1
FOR EXTERNAL HEAT INHIBIT/DISABLE SIGNAL USE TERMINALS JL-BUMPER AND JR-BUMPER. FOR EXTERNAL ENABLE SIGNAL USE TERMINALS, EXTERNAL CONTACT.

WIRE COLOR CODE

BK	BLACK	BL	BLUE	BR	BROWN	GY	GRAY
LT BL	LIGHT BLUE	O	ORANGE	PK	PINK	PR	PURPLE
R	RED	W	WHITE	Y	YELLOW		

LEGEND

AMP AMPLIFIER
CO2 CARBON DIOXIDE SENSOR
D3 OUTDOOR DAMPER
D4 RECIRCULATING DAMPER
DS1 MAIN DISCONNECT SWITCH
FSC FIRE SYSTEM CONTACT
FSG FLAME SAFE GUARD
HLC HOA CONTROL
M1 MOTOR
MOD MODULATING VALVE
OLR MOTOR OVERLOAD
FAILSE
PS2 AIR PROVING SWITCH
PSC PRESSURE
R9 PDC LATCHING RELAY
RC COOL RELAY
RD DAMPER RELAY
RF SUPPLY FAN RELAY
RH HEAT RELAY
S2 FAN SWITCH
SC COOL CONTROL SWITCH
SG SPARK GENERATOR
STR MOTOR STARTER
TR6 TRANSFORMER
TS2 DISCHARGE AIR SENSOR
V1 PILOT VALVE
V2 MAIN VALVE

Wiring Template: M2B DOC NUMBER: ---- REV: ----

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

PROJECT 9/10/2025

FIVE FOUR LEES SUMMIT R1

MARK MUA-1

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

FIVE FOUR

301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE: HOODS

SHEET NUMBER: QF1000

CONTROL INFORMATION

MARK	MAIN ELECTRICAL CONTROL PACKAGE		MAIN USER INTERFACE		FANS CONTROLLED											
	MODEL	LOCATION	TYPE	LOCATION	FAN #	TYPE	FAN	FAN MARK	ZONE	CFM	MOTOR HP	MOTOR VOLT	CYCLE	MOTOR PHASE	MOTOR STARTER IN PANEL	VFD IN PANEL
CONTROLS VARIABLE VOLUME	XKC-DCV-S-20-3-1-0	SHIP LOOSE ENCLOSURE	FULL COLOR TOUCHSCREEN	FACE MOUNT ON CONTROL PACKAGE	1	EXHAUST	E1	KEF-2	2	3062	2	208	60	3	NO	YES
					2	EXHAUST	E2	KEF-1	1	5178	5	208	60	3	NO	YES

CONTROL FEATURES

- HOOD LIGHT CONTROL
- TEMP SENSORS (FACTORY INSTALLED) - QTY. 3
- DRY FIRE CONTACTS - QTY. 1
- LIGHTS OFF DURING FIRE
- EXHAUST MAX DURING FIRE

ACCUREX

DOC NUMBER: ---- REV: ----

CAUTION
UNIT MUST BE GROUNDED IN ACCORDANCE WITH N.E.C. POWER MUST BE OFF WHILE SERVICING.

ATTENTION
L'APPAREIL DOIT ÊTRE MIS À LA TERRE CONFORMÉMENT AU CODE C.E. L'ALIMENTATION DOIT ÊTRE COUPÉE DURANT L'ENTRETIEN.

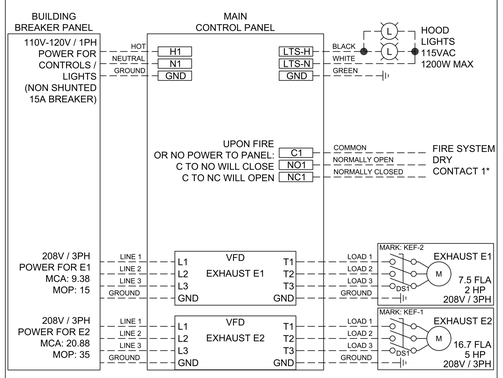
c UL us LISTED 43BM
COMMERCIAL APPLIANCE OUTLET CENTER
ELECTRICAL RATINGS: 110-240V,1PHASE, 50-60HZ,15A
BASE FILE #E200616, ML FILE #E313951

THESE DRAWINGS SHALL NOT BE REMOVED FROM THIS EQUIPMENT. USE COPPER CONDUCTORS RATED TO 90°C UNLESS SPECIFIED. TORQUE CONTROL & GROUND BLOCKS TO 6 LBS. IN. TORQUE POWER LUGS/SCREWS TO COMPONENT RATINGS LISTED. TORQUE CONTROL BOARD SCREW TERMINALS TO 3.5 LBS. IN. FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM. SEE IOM FOR ADDITIONAL INFORMATION, OR CALL FACTORY AT 1-800-371-6858.
PRG VERSION: V5
FIELD WIRED (CÂBLÉ LOCALEMENT) - - - -
FACTORY WIRED (CÂBLÉ À L'USINE) ———

NE PAS RETIRER CES DESSINS DE CET EQUIPEMENT. SAUF INDICATION CONTRAIRE, UTILISER DES CONDUCTEURS EN CUIVRE CLASSÉS 90 °C. SERRER LES BORNES DE COMMANDE ET DE MISE À LA TERRE À 6 LB-PO. SERRER LES COSSES/VIS D'ALIMENTATION AUX COUPLES INDIQUÉS POUR LE COMPOSANT. SERRER LES BORNES À VIS DE LA CARTE DE COMMANDE À 3,5 LB-PO. LA RÉSISTANCE DU CÂBLAGE DE COMMANDE LOCAL NE DOIT PAS DÉPASSER 0,75 OHM. POUR PLUS D'INFORMATION, CONSULTER LE MANUEL OU APPELER 1-800-371-6858

WIRING DIAGRAM CODE: WDC#
JOB NAME: FIVE FOUR LEES SUMMIT R1
MODEL: XKC-DCV-S-20-3-1-0
SERIAL NUMBER: WDSN#
MARK: CONTROLS VARIABLE VOLUME

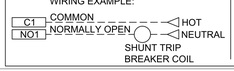
POWER WIRING FOR KITCHEN CONTROLS
(WIRING TO BE DONE BY ELECTRICIAN)



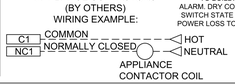
*FIRE SYSTEM DRY CONTACT WIRING EXAMPLES

DO NOT USE CONTACTS FOR PROVIDING SIGNALS TO BUILDING FIRE ALARM. DRY CONTACTS SWITCH STATE DURING POWER LOSS TO PANEL.

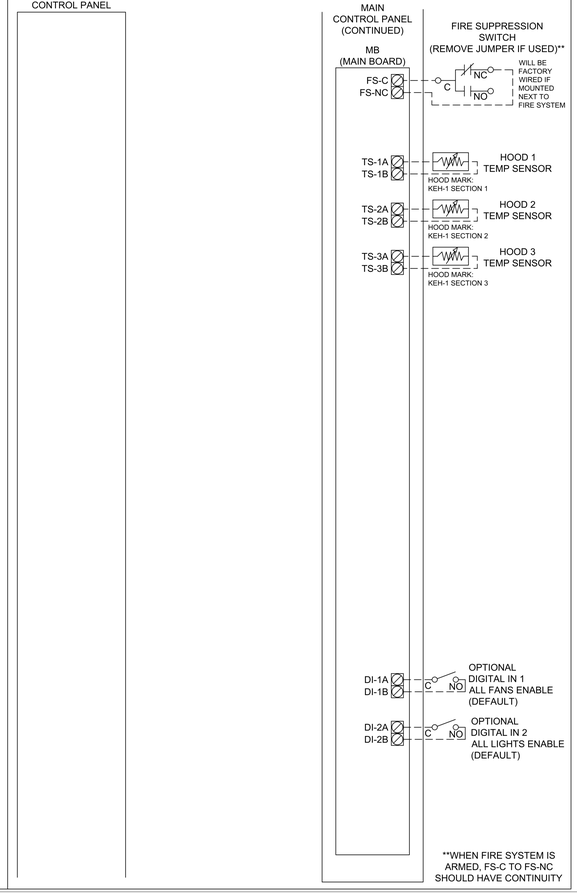
SHUNT TRIP (BY OTHERS) WIRING EXAMPLE:



APPLIANCE CONTACTORS (BY OTHERS) WIRING EXAMPLE:



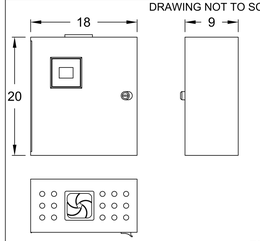
CONTROL WIRING FOR KITCHEN CONTROLS
(WIRING TO BE DONE BY ELECTRICIAN, IF NO CONTROLS CONTRACTOR. USE 18-22GA WIRE UNLESS SPECIFIED.)



**WHEN FIRE SYSTEM IS ARMED, FS-C TO FS-NC SHOULD HAVE CONTINUITY

CABINET DETAILS

DRAWING NOT TO SCALE



MOUNTING LOCATION:
SHIP LOOSE ENCLOSURE

TOTAL WEIGHT: 35 LBS

NOTES:
1) WHEN CONTROLS ARE MOUNTED IN HOOD-MOUNTED OR WALL-MOUNTED UTILITY CABINET, FOR HOOD OR WALL CABINET DIMENSIONS SEE HOOD SUBMITTAL.
2) MINIMUM OF 36" OF CLEARANCE RECOMMENDED IN FRONT OF CONTROL CABINET

MAIN USER INTERFACE DETAILS

MOUNTING TYPE
FACTORY MOUNTED:
FACE MOUNT ON CONTROL PACKAGE

USER INTERFACE CONTROL
FANS AND LIGHTS

INTERFACE CABLE LENGTH
4FT (FACTORY PROVIDED)

DEFAULT SETTINGS

FACTORY SETTINGS
TYPE: VAV
CONFIGURATION: STANDARD
ZONES: 2
HOODS: 3
EXHAUST FANS: 2
SUPPLY FANS: 0
MB ROOM SENSOR: NO
MB TEMP SENSORS: 3
HIGH TEMP FAULT: NO
FREEZE PROTECTION: YES
MB GAS RESET: NO
FAN PROVING: NO
BMS: NONE

ZONE SETTINGS
SEE ZONE CONFIGURATION TABLE BELOW

HOOD SETTINGS
SEE HOOD CONFIGURATION TABLE BELOW

EXHAUST FAN SETTINGS
SEE FAN CONFIGURATION TABLE BELOW

SUPPLY FAN SETTINGS
SEE FAN CONFIGURATION TABLE BELOW

SENSOR SETTINGS
SEE HOOD CONFIGURATION TABLE BELOW

USER INTERFACE SETTINGS (MB)
FAN & LIGHT BUTTONS: SHOW BOTH (SEPERATE)

GENERAL SETTINGS
TIME ZONE: CENTRAL DAYLIGHT (DEFAULT)

MB FIRE/FAULT SETTINGS
EXHAUST DURING FIRE: MAX
SUPPLY DURING FIRE: OFF
LIGHTS DURING FIRE: OFF

WIRING DIAGRAM CODE: WDC#
JOB NAME: FIVE FOUR LEES SUMMIT R1
MODEL: XKC-DCV-S-20-3-1-0
SERIAL NUMBER: WDSN#
MARK: CONTROLS VARIABLE VOLUME
DOC NUMBER: ---- REV: ----
PRG VERSION: V5

ZONE CONFIGURATION

ZONE #	ZONE	ROOM TEMP
1	Z1	PRESET
2	Z2	PRESET

HOOD CONFIGURATION

HOOD #	HOOD	HOOD MARK	ZONE	EXH A	EXH B	SUPPLY		MB-TEMP SENSORS	
1	H1	KEH-1 SECTION 1	Z1	E2	-	-		TS1	
2	H2	KEH-1 SECTION 2	Z1	E2	-	-		TS2	
3	H3	KEH-1 SECTION 3	Z2	E1	-	-		TS3	

FAN CONFIGURATION

FAN #	TYPE	FAN	FAN MARK	ZONE	MIN CFM	MAX CFM	MODBUS VFD	VFD ADDRESS	MIN FREQ.	MAX FREQ.	MIN VDC	MAX VDC
1	EXHAUST	E1	KEF-2	Z2	1531	3062	YES	1	30	60	-	-
2	EXHAUST	E2	KEF-1	Z1	2589	5178	YES	2	30	60	-	-

PROJECT 9/28/2025
MARK
FIVE FOUR LEES SUMMIT R1
CONTROLS VARIABLE VOLUME
UL NSF

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

ACCUREX

FIVE FOUR
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT
DATE: 11/12/2024
PROJECT #: 2024136
DRAWN BY: JLH
APPROVED BY: NLB

SHEET TITLE: HOODS

SHEET NUMBER: QF1100

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

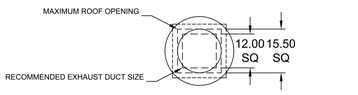
DATE	NO.	DESCRIPTION

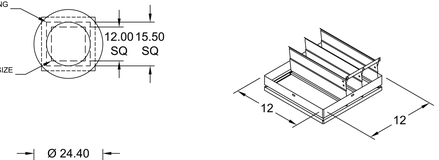
Direct Drive Centrifugal Roof Exhaust Fan

MARK INFORMATION		FAN INFORMATION									SOUND INFORMATION					MOTOR INFORMATION								
MARK	QTY	MODEL	DRIVE TYPE	VOLUME (CFM)	EXTERNAL SP (IN. WG)	TOTAL EXTERNAL SP (IN. WG)	FAN SPEED (RPM)	OUTLET VELOCITY (FT/MIN)	FEI	TOTAL WEIGHT (LB)	INLET dBA	INLET SONES	INLET SONES (SPHERICAL)	OUTLET dBA	OUTLET SONES	OPERATING POWER (HP)	MOTOR SIZE (HP)	FEP INPUT POWER (KW)	ENCLOSURE	VOLTAGE	CYCLE	PHASE	EC MOTOR	NEC FLA*
DWEF-1	1	XRED-100-A	Direct	1,050	0.6	0.702	1,725	1,262.05	0	50	60.44	10.18	0	0	0	0.28	0.333	0	OP	115	60	1	No	7.2

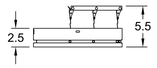
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

DWEF-1 : SELECTED OPTIONS AND ACCESSORIES
Curb Cap Size - 19 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-1, Toggle,
Foam Curb Seal (Factory Applied)
Damper Shipped Loose, BD-100-PB-12X12, Gravity Operated, Not Coated, Nominal Size
Birdscreen: Aluminum, nom. 86% Free Area
Aluminum Wheel Material
Conduit Chase Qty 1

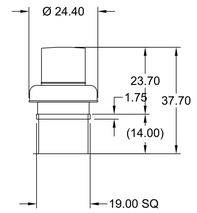


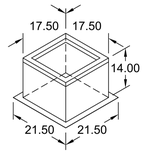


DAMPER



TYP. SECTION VIEW





DUCT DIMENSIONS ARE LARGEST POSSIBLE DUCT TO FIT THROUGH CURB. CONSULT SYSTEM DESIGN ENGINEER FOR RECOMMENDED DUCT SIZE.

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

FIVE FOUR LEES SUMMIT R1

DWEF-1

PROJECT 9/10/2025

MARK

ACCUREX KS NE WESTERN MO
ROBERT KNUST
ROBERT.KNUST@ACCUREX.COM
(816)888-9742

ACCUREX

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

FIVE FOUR

301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE:
FOODSERVICE EQUIPMENT

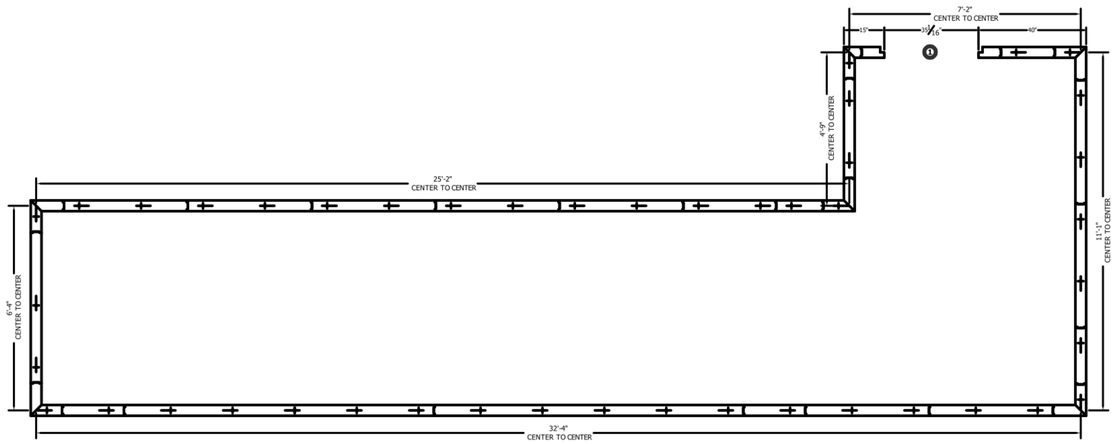
DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE:
HOODS

SHEET NUMBER:
QF1200

WALK - IN SPECIFICATIONS

c UL us LISTED NSF



SCREEDS LAYOUT

ATTENTION

1. **SUBMITTAL DRAWING NOT INTENDED FOR INSTALLATION**
   AS-BUILT DRAWING FOR INSTALLATION WILL BE AVAILABLE AFTER ORDER IS PLACED. HARD COPY OF AS-BUILT DRAWING WILL BE IN HARDWARE BOX WITH WALK-IN SHIPMENT TO JOBSITE. ALL AS-BUILT DRAWINGS SHOW PART NUMBERS AND ID LABELS ON PLAN VIEWS.
2. ALL WALK-INS ARE DESIGNED FOR INDOOR APPLICATION UNLESS NOTED OTHERWISE
3. PANELS WITH NON-TEXTURED AND/OR NO-PROFILE PANEL FINISHES (SMOOTH FINISHES) ON THE EXTERIOR AND INTERIOR FACES MAY EXHIBIT "OIL CANNING" AND FLATNESS IMPERFECTIONS ON THE SURFACE. OUR STANDARD PANELS HAVE A STUCCO EMBOSSED TEXTURE ON BOTH FACES THAT HELPS TO REDUCE "OIL CANNING" AND ANY OTHER IRREGULARITIES IN THE EXPOSED SURFACE. PLEASE BE AWARE OF THIS POTENTIAL SITUATION IN YOUR SPECIFICATION
4. ALL FIELD WIRING, PIPING, CONDUIT, CONNECTIONS, MATERIAL AND ARE NOT COVERED UNDER STANDARD WARRANTIES.
   PENETRATIONS AND SEALING OF ARE THE RESPONSIBILITY OF OTHERS.
5. ALLOW 2" MINIMUM CLEARANCE WITH AIRFLOW OF 5 CFM PER 100 SQ FT AROUND ENTIRE PANEL SURFACES. INDOOR WALK-INS REQUIRE A 75°F AMBIENT AND 55% RELATIVE HUMIDITY OR LESS AROUND THE EXTERIOR OF THE WALK-IN.
6. GENERAL CONTRACTOR TO REFER TO DESIGN AND SPECIFICATION MANUAL FOR FLOOR DETAIL INFORMATION
7. CONCRETE FLOORS MUST BE ADEQUATELY SEALED TO PREVENT DAMAGE TO INSULATION AND FLOORING DUE TO EXCESSIVE MOISTURE CREATED BY THE HYDRATION OF CONCRETE TYPE MATERIALS. IT IS ABSOLUTELY NECESSARY THAT EACH ROOM BE PROPERLY VENTILATED.
   SPECIAL PRECAUTIONS MUST ALSO BE TAKEN WHEN USING MURIATIC ACID DUE TO EFFECTS HYDROCHLORIC FUMES HAVE ON METAL MATERIALS
8. WALK-IN FLOORS ARE DESIGNED FOR UNIFORM LOADING OF 150 LBS PER SQ FT
9. WALK-IN TOP IS NOT DESIGNED FOR FOOT TRAFFIC OR STORAGE UNLESS NOTED OTHERWISE
10. IF CONDENSING UNIT IS LOCATED IN THE INTERIOR OF BUILDING A MINIMUM OF 24" OF CLEARANCE IS REQUIRED AROUND TOP AND SIDES
11. FLOOR, CURB, AND PIT DETAILS ARE FOR GENERAL REFERENCE ONLY. THESE DRAWINGS SHOULD NOT BE USED OR INCORPORATED IN THE DESIGN OR PREPARATION OF THE INSULATED FLOOR, SUB-SLAB OR CURBS, WITHOUT HAVING THE DESIGN REVIEWED BY A QUALIFIED ENGINEER. THE DESIGN OF THE FLOOR SYSTEM IS THE RESPONSIBILITY OF THE OWNER, GENERAL CONTRACTOR, ENGINEER OR ARCHITECT.
12. THE FOAM PLASTIC USED IN THIS PRODUCT COMPLIES TO THE IBC SECTION 2603 AS FOLLOWS: FLAME SPREAD RATING 20; SMOKE DEVELOPED RATING: 250 - 400; FLASH IGNITION TEMPERATURE RATING: 910°F; SPONTANEOUS IGNITION TEMPERATURE RATING: 950°F.
13. KOLPAK COMPLIES WITH INTERNATIONAL ENERGY CONSERVATION CODE (IECC) SECTION C403.11, US DEPARTMENT OF ENERGY, AND NRCAN. R-VALUES ARE ASTM C518 TESTED. COOLER R-VALUES ARE R-29 FOR 4" THICK, R-36 FOR 5" THICK, AND R-44 FOR 6" THICK PANELS. FREEZER R-VALUES ARE R-32 FOR 4" THICK, R-40 FOR 5" THICK, AND R-48 FOR 6" THICK PANELS. AND R-29 FOR 4" FLOORS.
14. FLOORS NOT DESIGNED FOR WET MOPPING, PALLET JACKS, OR FORKLIFT TRAFFIC.
15. KOLPAK AND HARFORD WALK-INS ARE COMPLIANT WITH UL STANDARDS. THE PANELS ARE UL723, UL FILE LISTING REF#S: THE DOORS ARE UL471. UL CUL LISTING #:QCLU2. STANDARD EVAPORATOR COILS ARE UL413 CONDENSING UNITS ARE UL1995.

FOR APPROVAL	KOLPAK INSTALLATION MANUAL
YOU MUST REVIEW ALL NOTES, DETAILS, DIMENSIONS, FINISHES, DOORS SIZES, LOCATIONS AND SWINGS	
☐ **APPROVAL:** NO CHANGE REQUIRED, MANUFACTURE AS DRAWN.	
☐ **APPROVED AS NOTED:** MAKE REQUIRED CHANGES AND MANUFACTURE AS DRAWN.	
☐ **NOT APPROVED:** DESIGN CHANGES REQUIRE DRAWING REVISION AND RESUBMISSION.	
DATE: _____ BY:_____	

DRAWING #: A27990984
UNIT #: 001
ORDER #:

KOLPAK

FIVE FOUR DISPLAY COOLER
N/A
LEES SUMMIT,MO 64002 USA

TRIMARK - HOCKENBERG'S EQUIPMENT & SUPPLY CO

REVISIONS		
DATE	NO.	DESCRIPTION

SHEET #
AD-3 of 5

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

FIVE FOUR

301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE:
FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE:
WALK-IN

SHEET NUMBER:
QF1300

WALK - IN SPECIFICATIONS

c UL us LISTED NSF

BEER COOLER
OVERALL SIZE: 32'-8" X 11'-5" X 9'-6 1/4" (INDOOR)

PANELS
FOAMED IN PLACE URETHANE FOAM 4"

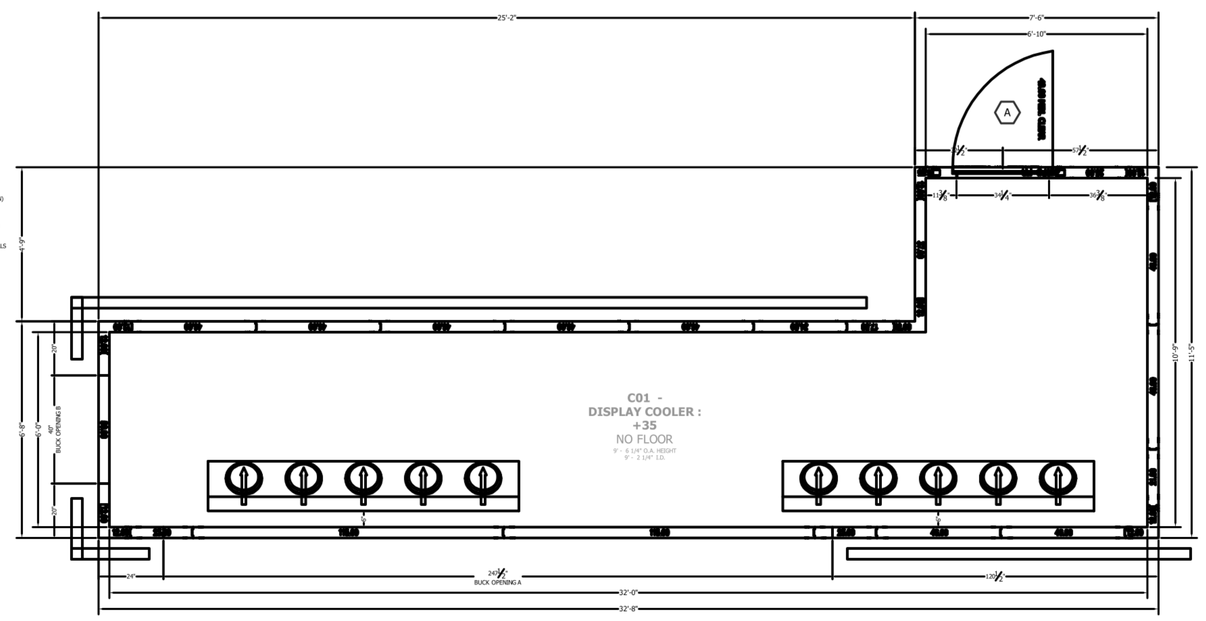
EXTERIOR FINISH
WALL: GALVALUME - EMBOSSED 26 GA
TOP: GALVALUME - EMBOSSED 26 GA

INTERIOR FINISH
WALL: GALVALUME - EMBOSSED 26 GA
TOP: GALVALUME - EMBOSSED 26 GA

FLOOR TYPE
C01 DISPLAY COOLER : SCREED, VINYL 4" X 4" HIGH

WALK-IN ACCESSORIES
(1) 20'-7 1/2" X 6'-7" FINISHED OPENING @ 15" A.F.F.
(1) 3'-4" X 6'-7" FINISHED OPENING @ 15" A.F.F.
(1) ANGLE BOX MODIFICATION
(100) LF COVE BASE, GALVALUME EMBOSSED 26 GA 1.25 X 4.25
(1) HEATER WIRE FOR COOLER
(7) J BOX 2X4 - INTERIOR CONNECTION (INDOOR OR OUTDOOR APPLICATION)
* PLACEMENT PER MARKED UP DRAWING
(1) THRESHOLD, STAINLESS STEEL 14 GA
(276) SF WAINSCOT ALUMINUM DIAMOND TREAD .063
(NSF REQUIREMENT FOR FOOD IN ORIGINAL SEALED PACKAGES ONLY)
* WAINSCOT FULL LENGTH, FULL HEIGHT ON 19' WALL OPPOSITE
BUCK OPENING AND FULL LENGTH, FULL HEIGHT ON ADJACENT
WALL W/ 4" BUCK OPENING. WAINSCOT ON INTERIOR ON BOTH WALLS
(1) LOT BUCK OPENING RACKING CLIPS
(1) SUSPENDED CEELING AT OPENING ADDER

REFRIGERATION
C01 DISPLAY COOLER:
(2) KPC148M2DP-2E, R448A, VOLTS: 208-230-60-1
(2) KASLA55-122-1EC-PR-4 VOLTS: 115-60-1



WALLS LAYOUT

⚠ATTENTION

1. **SUBMITTAL DRAWING NOT INTENDED FOR INSTALLATION.**
AS-BUILT DRAWING FOR INSTALLATION WILL BE AVAILABLE AFTER ORDER IS PLACED. HARD COPY OF AS-BUILT DRAWING WILL BE IN HARDWARE BOX WITH WALK-IN SHIPMENT TO JOBSITE. ALL AS-BUILT DRAWINGS SHOW PART NUMBERS AND BUILDING PLAN VIEWS.
2. ALL WALK-INS ARE DESIGNED FOR INDOOR APPLICATION UNLESS NOTED OTHERWISE.
3. PANELS ARE SUBJECT TO NORMAL MANUFACTURING TOLERANCES. SURFACE UNEVENNESS ON THE EXTERIOR AND INTERIOR FACES MAY EXHIBIT "OIL CANNING" AND FLATNESS IMPERFECTIONS ON THE SURFACE. OUR STANDARD PANELS HAVE A STUCCO EMBOSSED TEXTURE ON BOTH FACES THAT HELPS TO REDUCE "OIL CANNING" AND ANY OTHER IRREGULARITIES IN THE EXPOSED SURFACE. PLEASE BE AWARE OF THIS POTENTIAL SITUATION IN YOUR SPECIFICATION PROCESS. SUCH "OIL CANNING" AND FLATNESS ISSUES ARE TYPICAL AND ARE NOT COVERED UNDER STANDARD WARRANTIES.
4. PENETRATIONS AND SEALING OF ARE THE RESPONSIBILITY OF OTHERS
5. COOLER IS DESIGNED FOR A MAXIMUM OF 1 GRAIN PER POUND OF DRY AIR OR 50 FT SQ FT AROUND ENTIRE PANEL SURFACES. INDOOR WALK-INS REQUIRE A 75°F AMBIENT AND 55% RELATIVE HUMIDITY OR LESS AROUND THE EXTERIOR OF THE WALK-IN.
6. GENERAL CONTRACTOR TO REFER TO DESIGN AND SPECIFICATION MANUAL FOR FLOOR DETAIL INFORMATION
7. QUARRY TILE OR CONCRETE FLOOR APPLICATIONS: METAL PANEL FACING MAY BE SUSCEPTIBLE TO STAINING DUE TO EXCESSIVE MOISTURE CREATED BY THE HYDRATION OF CONCRETE TYPE MATERIALS. IT IS ABSOLUTELY NECESSARY THAT EACH ROOM BE PROPERLY VENTILATED.
8. KOLPAK WILL NOT BE RESPONSIBLE FOR ANY DAMAGE TO PANELS OR FLOORS DUE TO EFFECTS HYDROCARBO FUMES HAVE ON METAL PATERIALS
9. PANEL LAYOUT MAY CHANGE BASED ON OPTIMAL MANUFACTURING STANDARDS
10. WALK-IN TOP IS NOT DESIGNED FOR FOOT TRAFFIC OR STORAGE UNLESS NOTED OTHERWISE
11. FLOOR CONSTRUCTION IS THE RESPONSIBILITY OF BUILDING OWNER OR BUILDING ARCHITECT. CLEARANCE IS REQUIRED AROUND TOP AND SIDES
12. FLOOR, CEILING, AND LIFT GATES ARE FOR GENERAL PURPOSE USE ONLY. THESE PANELS OR SHELLS NOT BE USED OR INCORPORATED IN THE DESIGN OR PREPARATION OF THE INSULATED FLOOR, SUB-SLAB OR CURBS, WITHOUT HAVING THE DESIGN REVIEWED BY A QUALIFIED ENGINEER. ALL FOOTINGS, FOUNDATION WALLS AND CONCRETE WASH SLABS ARE THE RESPONSIBILITY OF THE BUILDING ENGINEER OR ARCHITECT.
13. THE FOAM PLASTIC USED IN THIS PRODUCT COMPLIES TO THE IBC SECTION 2603 AS FOLLOWS: FLAME SPREAD RATING: 25; SMOKE DEVELOPED RATING: 450 OR LESS. THE FOAM PLASTIC IS PROTECTED BY THE PANEL SKIN AND NOT EXPOSED TO THE INTERIOR OF THE ROOM.
14. KOLPAK COMPLIES WITH INTERNATIONAL ENERGY CONSERVATION CODE (IECC) SECTION C403.11, US DEPARTMENT OF ENERGY, AND NRCAN. R-VALUES ARE ASTM C518 TESTED. COOLER R-VALUES ARE R-29 FOR 4" THICK, R-36 FOR 5" THICK, AND R-44 FOR 6" THICK PANELS. FREEZER R-VALUES ARE R-22 FOR 4" THICK, R-40 FOR 5" THICK, R-48 FOR 6" THICK PANELS, AND R-29 FOR 4" FLOORS.
15. FLOORS NOT DESIGNED FOR WET MOPPING, PALLET JACKS, OR FORKLIFT TRAFFIC
16. ALL PLACE LISTING BEFORE STANDARD EVAPORATOR COILS ARE ULC/CSA CONDENSING UNITS ARE UL/NRL. ALL PLACE LISTING BEFORE STANDARD EVAPORATOR COILS ARE ULC/CSA CONDENSING UNITS ARE UL/NRL. PANELS ARE UL723, UL FILE LISTING R8180. THE DOORS ARE UL471.

FOR APPROVAL	KOLPAK INSTALLATION MANUAL
YOU MUST REVIEW ALL NOTES, DETAILS, DIMENSIONS, FINISHES, DOORS SIZES, LOCATIONS AND SWINGS	
☐ APPROVAL: NO CHANGE REQUIRED, MANUFACTURE AS DRAWN.	
☐ APPROVED AS NOTED: MAKE REQUIRED CHANGES AND MANUFACTURE AS DRAWN.	
☐ NOT APPROVED: DESIGN CHANGES REQUIRE DRAWING REVISION AND RESUBMISSION.	
DATE:_____ BY:_____	

DRAWING #: A27909084
UNIT #: 001
ORDER #:

KOLPAK

FIVE FOUR DISPLAY COOLER
R/A
LEES SUMMIT,MO 64002 USA

TRIMARK - HOCKENBERG'S
EQUIPMENT & SUPPLY CO

MARK	REVISIONS	DATE
A		
B		
C		
D		
E		

SHEET #
AD-1 of 5

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

FIVE FOUR
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

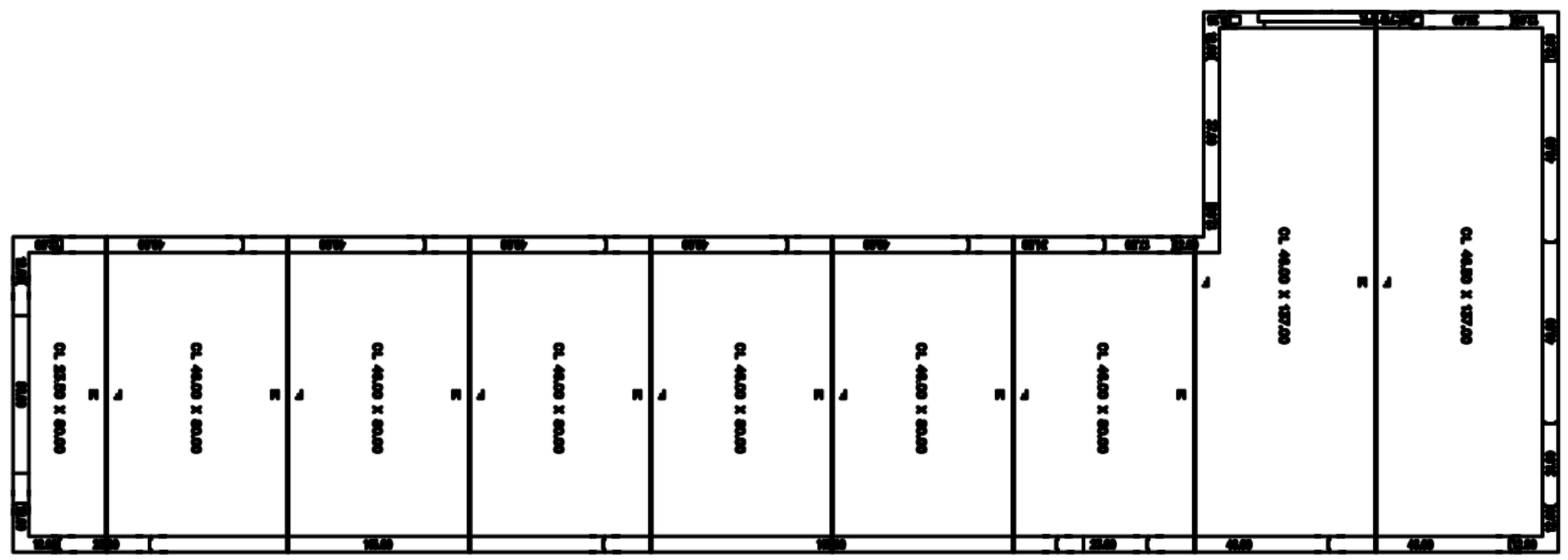
DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE: WALK-IN

SHEET NUMBER: QF1400

WALK - IN SPECIFICATIONS

c UL us LISTED NSF



CEILINGS LAYOUT

ATTENTION

1. **SUBMITTAL DRAWING NOT INTENDED FOR INSTALLATION.**
   AS-BUILT DRAWING FOR INSTALLATION WILL BE AVAILABLE AFTER ORDER IS PLACED. HARD COPY OF AS-BUILT DRAWING WILL BE IN HARDWARE BOX WITH WALK-IN SHIPMENT TO JOBSITE. ALL AS-BUILT DRAWINGS SHOW PART NUMBERS AND ID LABELS ON PLAN VIEWS.
2. ALL WALK-INS ARE DESIGNED FOR INDOOR APPLICATION UNLESS NOTED OTHERWISE
3. PANELS WITH NON-TEXTURED AND/OR NO-PROFILE PANEL FINISHES (SMOOTH FINISHES) ON THE EXTERIOR AND INTERIOR FACES MAY EXHIBIT "OIL CANNING" AND FLATNESS IMPERFECTIONS ON THE SURFACE. OUR STANDARD PANELS HAVE A STUCCO EMBOSSED TEXTURE ON BOTH FACES THAT HELPS TO REDUCE "OIL CANNING" AND ANY OTHER IRREGULARITIES IN THE EXPOSED SURFACE. PLEASE BE AWARE OF THIS POTENTIAL SITUATION IN YOUR SPECIFICATION PROCESS. SUCH "OIL CANNING" AND FLATNESS ISSUES ARE TYPICAL AND ARE NOT COVERED UNDER STANDARD WARRANTIES.
4. PENETRATIONS AND SEALING OF ARE THE RESPONSIBILITY OF OTHERS
5. ALLOW 2" MINIMUM CLEARANCE WITH AIRFLOW OF 5 CFM PER 100 SQ FT AROUND ENTIRE PANEL SURFACES. INDOOR WALK-INS REQUIRE A 75°F AMBIENT AND 55% RELATIVE HUMIDITY OR LESS AROUND THE EXTERIOR OF THE WALK-IN.
6. GENERAL CONTRACTOR TO REFER TO DESIGN AND SPECIFICATION MANUAL FOR FLOOR DETAIL INFORMATION
7. QUARRY TILE OR CONCRETE FLOOR APPLICATIONS: METAL PANEL FACING MAY BE SUSCEPTIBLE TO STAINING DUE TO EXCESSIVE MOISTURE CREATED BY THE HYDRATION OF CONCRETE TYPE MATERIALS. IT IS ABSOLUTELY NECESSARY THAT EACH ROOM BE PROPERLY VENTILATED. SPECIAL PRECAUTIONS MUST ALSO BE TAKEN WHEN USING MURIATIC ACID DUE TO EFFECTS HYDROCHLORIC FUMES HAVE ON METAL MATERIALS
8. PANEL LAYOUT MAY CHANGE BASED ON OPTIMAL MANUFACTURING STANDARDS
9. WALK-IN TOP IS NOT DESIGNED FOR FOOT TRAFFIC OR STORAGE UNLESS NOTED OTHERWISE
10. IF CONDENSING UNIT IS LOCATED IN THE INTERIOR OF BUILDING A MINIMUM OF 24" OF CLEARANCE IS REQUIRED AROUND TOP AND SIDES
11. FLOOR, CURB, AND PIT DETAILS ARE FOR GENERAL REFERENCE ONLY. THESE DRAWINGS SHOULD NOT BE USED OR INCORPORATED IN THE DESIGN OR PREPARATION OF THE INSULATED FLOOR, SUB-SLAB OR CURBS, WITHOUT HAVING THE DESIGN REVIEWED BY A QUALIFIED ENGINEER. ALL FOOTINGS, FOUNDATION WALLS AND CONCRETE WEAR SLABS ARE THE RESPONSIBILITY OF THE BUILDING ENGINEER OR ARCHITECT.
12. THE FOAM PLASTIC USED IN THIS PRODUCT COMPLIES TO THE IBC SECTION 2603 AS FOLLOWS: FLAME SPREAD RATING: 20; SMOKE DEVELOPED RATING: 250 - 400; FLASH IGNITION TEMPERATURE RATING: 915°F; SPONTANEOUS IGNITION TEMPERATURE RATING: 950°F.
13. KOLPAK COMPLIES WITH INTERNATIONAL ENERGY CONSERVATION CODE (IECC) SECTION C403.11, US DEPARTMENT OF ENERGY, AND NRCAN. R-VALUES ARE ASTM C518 TESTED. COOLER R-VALUES ARE R-29 FOR 4" THICK, R-36 FOR 5" THICK, AND R-44 FOR 6" THICK PANELS. FREEZER R-VALUES ARE R-32 FOR 4" THICK, R-40 FOR 5" THICK, R-48 FOR 6" THICK PANELS, AND R-29 FOR 4" FLOORS.
14. FLOORS NOT DESIGNED FOR WET MOPPING, PALLET JACKS, OR FORKLIFT TRAFFIC.
15. KOLPAK AND HARFORD WALK-INS ARE COMPLIANT WITH UL STANDARDS. THE PANELS ARE UL723, UL FILE LISTING R8160. THE DOORS ARE UL471, UL FILE LISTING E46140. STANDARD EVAPORATOR COILS ARE UL412. CONDENSING UNITS ARE UL1995.

FOR APPROVAL

YOU MUST REVIEW ALL NOTES, DETAILS, DIMENSIONS, FINISHES, DOORS SIZES, LOCATIONS AND SWINGS

- ☐ **APPROVAL**- NO CHANGE REQUIRED, MANUFACTURE AS DRAWN.
- ☐ **APPROVED AS NOTED**- MAKE REQUIRED CHANGES AND MANUFACTURE AS DRAWN.
- ☐ **NOT APPROVED**- DESIGN CHANGES REQUIRE DRAWING REVISION AND RESUBMISSION.

DATE:____________ BY:________________________

KOLPAK INSTALLATION MANUAL

DRAWING #: A279090R4
UNIT #: 001
ORDER #:

KOLPAK

FIVE FOUR DISPLAY COOLER
N/A
LEES SUMMIT,MO 64002 USA

TRIMARK - HOCKENBERG'S EQUIPMENT & SUPPLY CO

DRAWN BY:	DATE:	CHECK BY:	DATE:	QUOTE REVISION	DATE:
LTW	07/30/2025				
LTW	08/04/2025				

SHEET # AD-2 of 5

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

FIVE FOUR

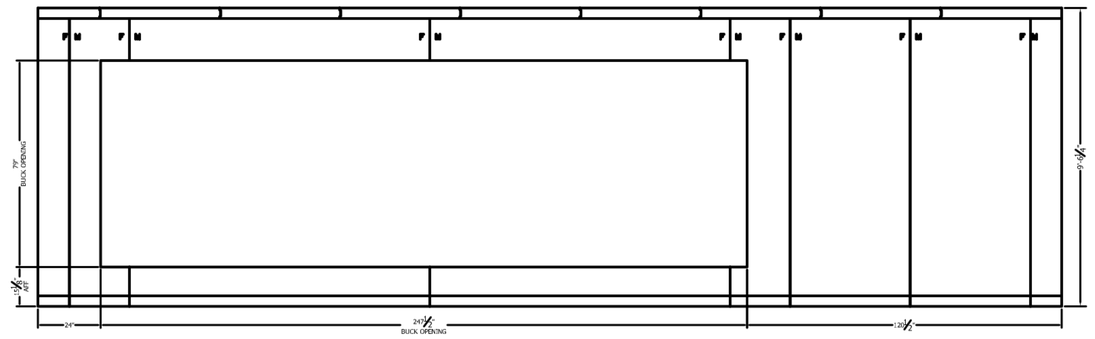
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE:	
FOODSERVICE EQUIPMENT	
DATE: 11/12/2024	PROJECT #: 2024136
DRAWN BY: JLH	APPROVED BY: NLB

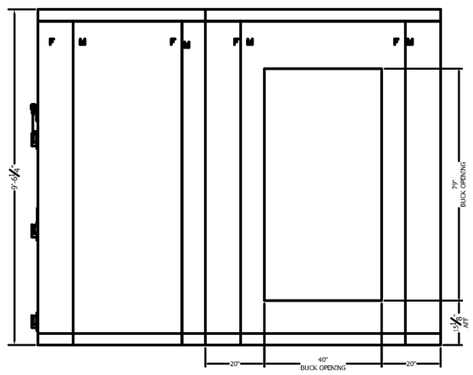
SHEET TITLE: WALK-IN

SHEET NUMBER: QF1500

THIS DOCUMENT WAS ORIGINALLY PRINTED ON A 30" x 42" SIZE SHEET



BUCK OPENING A LAYOUT



BUCK OPENING B LAYOUT

DRAWING #:x27909084
UNIT #:001
ORDER #:

KOLPAK

FIVE FOUR DISPLAY COOLER
N/A
LEES SUMMIT,MO 64002 USA

TRIMARK - HOCKENBERG'S
EQUIPMENT & SUPPLY CO

MARK	DESCRIPTION	DATE
A		
B		
C		
D		
E		
F		

SHEET #
AD-4 of 5

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

FIVE FOUR

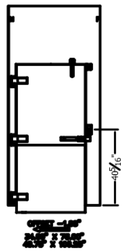
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE:
FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE:
WALK-IN

SHEET NUMBER:
QF1600



FRAME:
RECESSED 0" WITH 0" LEVELING SAND AND 0" TILE AND GROUT
EXT: GALVALUME - EMBOSSED 26 GA
INT: GALVALUME - EMBOSSED 26 GA

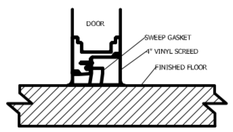
PLUG:
EXT: GALVALUME - EMBOSSED 26 GA
EXT: KCOUPLATE, ALUM .063 DIAMOND TREAD 36" HIGH
INT: GALVALUME - EMBOSSED 26 GA

HARDWARE AND ACCESSORIES:
(1) 115/60/1 ELECTRICAL
(1) DOOR CLOSER - KASON 1094 (STD)
(1) HANDLE - KASON 27C BRUSHED CHROME
(3) HINGE - KASON 1346 BRUSHED CHROME
ADJUSTABLE / SPRING ASSISTED (STD)
(1) LIGHT FIXTURE - KASON 1803 LED W/BULB,
GLOBE AND NIGHTLIGHT 120V 50/60HZ (STD)
(1) SWITCH THERMOMETER COMBO - KASON 1967-A2,
20FT LEAD, 120V 50/60HZ F/C (WEATHERPROOF 3-WAY)
(1) VENT - PRESSURE RELIEF, HEATED 120V 50/60HZ (STD)

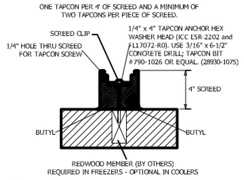
DW-1

A

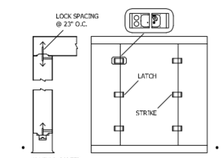
DOOR ELECTRICAL INFORMATION				
DESCRIPTION	QTY	VOLT	AMP	AMP LOAD
HEATED AIR VENT	1	115	0.04	0.04
KASON 1967 SWITCH/THERMOMETER COMBO	1	115	0.02	0.02
LED LIGHT	1	115	0.1	0.1
115 VOLT, SINGLE PHASE, 60 Hz, TOTAL DOOR AMPS:				0.16



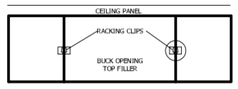
1 DETAIL - 4IN VSCD
Scale: N.T.S



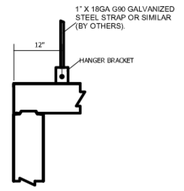
2 DETAIL - 4IN VINYL SCREED MOUNTING
Scale: N.T.S



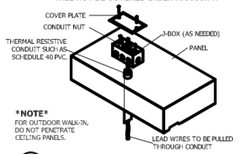
3 DETAIL - PANEL CONNECTION AT 4IN VINYL SCREEDS
Scale: N.T.S



4 DETAIL - BUCK OPENING RACKING CLIP
Scale: N.T.S



5 DETAIL - CEILING SUSPENSION AT OPENING
Scale: N.T.S

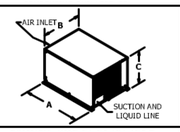


6 DETAIL - ELECTRICAL CONDUIT PENETRATION
Scale: N.T.S

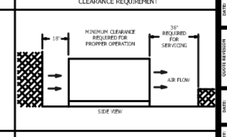
COMPARTMENT		CONDENSING UNIT																					
						DIMENSIONS				COMPRESSOR						CONDENSER FAN MTR			TOTAL AMPS	MX AMP DISC	CONNECTIONS O.D.		RCV CAP
DESCRIPTION	TEMP F WI	QTY	MODEL #	REFRIGERANT	COMPRESSOR TYPE	L (A)	W (B)	H (C)	LBS	HP	RLA	LRA	V	HZ	Φ	FLA	V	Φ			SUCT	LIQ	@ 90% FULL (lbs)
C01 DISPLAY COOLER		2	KPC148M2OP-2E	R448A	SCROLL	33	25.5	19.25	163	1 1/2	12	56	208-230	60	1	1.2	208-230	1	13.4	25	7/8	3/8	10.4

COMPARTMENT		UNIT COOLER													
					DIMENSIONS				FAN		HEATER			CONNECTIONS O.D.		
DESCRIPTION	TEMP F WI	QTY	MODEL # (DEFROST: A-AIR E-ELECTRIC)	REFRIGERANT	L (D)	W (E)	H (F)	LBS	TOTAL AMPS	V	TOTAL AMPS	V	Φ	SUCT	LIQ	DRAIN
C01 DISPLAY COOLER		2	KASLS55-122-1EC-PR-4	R404A	115.1875	19.8125	9.1875	185	2.9	115	0	N/A	0	1 1/8	1/2	3/4

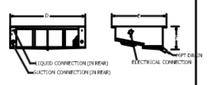
CONDENSING UNIT ASSEMBLY



CLEARANCE REQUIREMENT



EVAPORATOR - MODEL SLA, SLE, ASLA, ASLE, TL



DRAWING #: A27909084
UNIT #: 001
ORDER #:

KOLPAK

FIVE FOUR DISPLAY COOLER
NEW
LEES SUMMIT,MO 64002 USA

TRIMARK - HOCKENBERG'S EQUIPMENT & SUPPLY CO

ISSUED	
PERMIT	
CONSTRUCTION	
AS-BUILT	
LTR	

SHEET #
AD-5 of 5

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

FIVE FOUR

301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE:
FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE:
WALK-IN

SHEET NUMBER:
QF1700

WALK - IN SPECIFICATIONS

c UL us NSF LISTED

COOLER/FREEZER/COOLER

OVERALL SIZE: 17'-6" X 14'-5 1/2" X 8'-6 1/4" (OUTDOOR)

PANELS
FOAMED IN PLACE URETHANE FOAM 4"

EXTERIOR FINISH
WALL: GALVALUME - EMBOSSED 26 GA
TOP: GALVALUME - EMBOSSED 26 GA
FLOOR: GALVALUME - EMBOSSED 26 GA

INTERIOR FINISH
WALL: GALVALUME - EMBOSSED 26 GA
TOP: GALVALUME - EMBOSSED 26 GA

FLOOR TYPE
F01 FREEZER :
STANDARD 1000# ERA
ALUMINUM - SMOOTH ALUMINUM .100

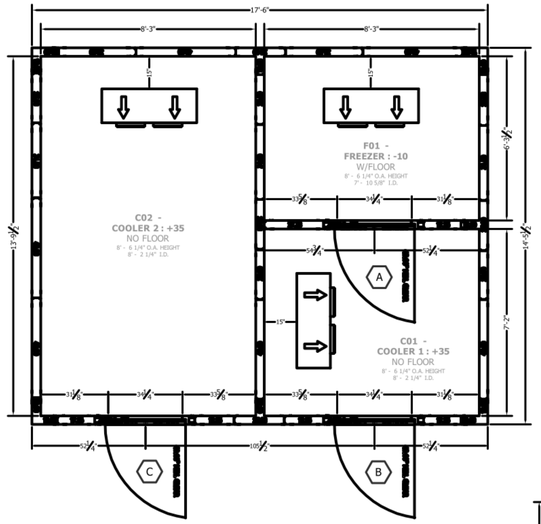
C01 COOLER 1 : SCREED, VINYL 4" X 4" HIGH
C02 COOLER 2 : SCREED, VINYL 4" X 4" HIGH

WALK-IN ACCESSORIES
(1) CROSS PARTITION TOPS ADDER
(1) LOT, RACKING CLIP
(1) LOT, TAPCON FASTENERS
(7) TRIM ANGLED 3" X 3" X 6IIT GALVALUME EMBOSSED 26 GA

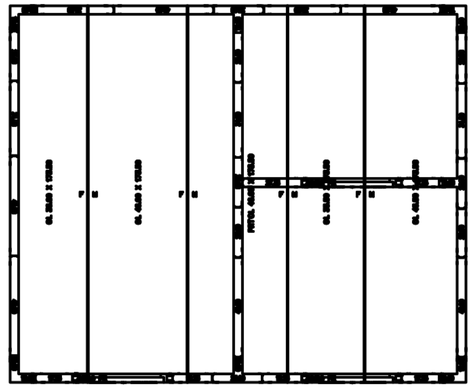
REFRIGERATION
C02 COOLER 2 :
KPC98MZDP-2E, R448A, VOLTS: 208-230-60-1,BTU:9260
KAM26-094-1EC-PR-8 VOLTS: 115-60-1,BTU:10876
TEMP: WALK-IN 35, AMBIENT TEMP: 110

C01 COOLER 1 :
KPC68MZDP-2E, R448A, VOLTS: 208-230-60-1,BTU:7580
KAM26-073-1EC-PR-8 VOLTS: 115-60-1,BTU:8818
TEMP: WALK-IN 35, AMBIENT TEMP: 110

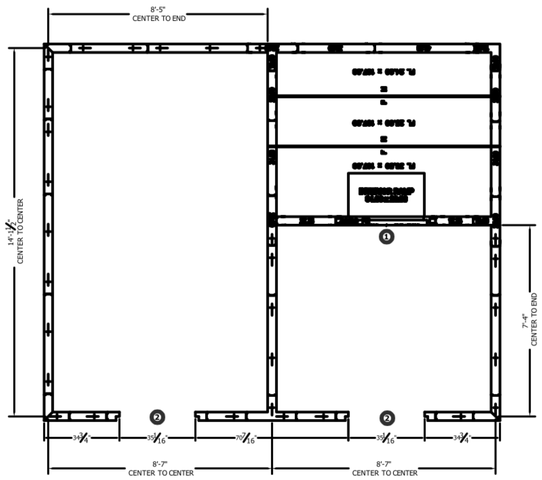
F01 FREEZER :
KPC94BLZDP-2E, R448A, VOLTS: 208-230-60-1,BTU:7570
KEL26-066-2EC-PR-8 VOLTS: 208-230-60-1,BTU:8397
TEMP: WALK-IN -10, AMBIENT TEMP: 110



WALLS LAYOUT



CEILINGS LAYOUT



FLOORS & SCREEDS LAYOUT

⚠ATTENTION

1. **SUBMITTAL DRAWING NOT INTENDED FOR INSTALLATION**
AS- BUILT DRAWING FOR INSTALLATION WILL BE AVAILABLE AFTER ORDER IS PLACED. HARD COPY OF AS-BUILT DRAWING WILL BE IN HARDWARE BOX WITH WALK-IN SHIPMENT TO JOBSITE. ALL AS-BUILT DRAWINGS SHOW PART NUMBERS AND ID LABELS ON PLAN VIEWS.
2. ALL WALK-INS ARE DESIGNED FOR INDOOR APPLICATION UNLESS NOTED OTHERWISE.
3. CONDENSATION MAY FORM ON EXPOSED SURFACES. PANELS WITH WOOD FINISHES ON THE EXTERIOR AND INTERIOR FACES MAY EXHIBIT "OIL CANNING" AND FLATNESS IMPERFECTIONS ON THE SURFACE. OUR STANDARD PANELS HAVE A STUCCO EMBOSSED TEXTURE ON BOTH FACES THAT HELPS TO REDUCE "OIL CANNING" AND ANY OTHER IRREGULARITIES IN THE EXPOSED SURFACE. PLEASE BE AWARE OF THIS POTENTIAL SITUATION IN YOUR SPECIFICATION PROCESS. SUCH "OIL CANNING" AND FLATNESS ISSUES ARE TYPICAL AND ARE NOT COVERED UNDER STANDARD WARRANTIES.
4. PENETRATIONS AND SEALING OF ARE THE RESPONSIBILITY OF OTHERS.
5. FLOOR LOADING SHALL NOT EXCEED 250 LBS PER SQ FT AROUND ENTIRE PANEL SURFACES. INDOOR WALK-INS REQUIRE A 75°F AMBIENT AND 55% RELATIVE HUMIDITY OR LESS AROUND THE EXTERIOR OF THE WALK-IN.
6. GENERAL CONTRACTOR TO REFER TO DESIGN AND SPECIFICATION MANUAL FOR FLOOR DETAIL INFORMATION.
7. QUARRY TILE OR CONCRETE FLOOR APPLICATIONS: METAL PANEL FLOORS MAY BE SUSCEPTIBLE TO STAINING DUE TO EXCESSIVE MOISTURE CREATED BY THE HYDRATION OF CONCRETE TYPE MATERIALS. IT IS ABSOLUTELY NECESSARY THAT EACH ROOM BE PROPERLY VENTILATED.
8. WALK-IN FLOORS ARE NOT DESIGNED FOR FORK TRUCK TRAFFIC. DAMAGE DUE TO EFFECTS HYDROSTATIC FORCES HAVE ON METAL PATERIALS
9. PANEL LAYOUT MAY CHANGE BASED ON OPTIMAL MANUFACTURING STANDARDS.
10. WALK-IN TOP IS NOT DESIGNED FOR FOOT TRAFFIC OR STORAGE UNLESS NOTED OTHERWISE.
11. ALL WALK-INS REQUIRE A MINIMUM OF 2" CLEARANCE FOR AIR FLOW. ADDITIONAL CLEARANCE IS REQUIRED AROUND TOP AND SIDES
12. FLOOR, CURB, AND FIT DETAILS ARE FOR GENERAL REFERENCE ONLY. THESE DRAWINGS SHOULD NOT BE USED OR INCORPORATED IN THE DESIGN OR PREPARATION OF THE INSULATED FLOOR, SUB-SLAB OR CURBS, WITHOUT HAVING THE DESIGN REVIEWED BY A QUALIFIED ENGINEER. ALL FOOTINGS, FOUNDATION WALLS AND CONCRETE WEAR SLABS ARE THE RESPONSIBILITY OF THE BUILDING ENGINEER OR ARCHITECT.
13. THE FOAM PLASTIC USED IN THIS PRODUCT COMPLIES TO THE IBC SECTION 2603 AS FOLLOWS: FLAME SPREAD RATING: 25; SMOKE DEVELOPED RATING: 450 OR LESS. THE FOAM PLASTIC IS PROTECTED BY A THERMAL BARRIER AS REQUIRED BY IBC SECTION 2603.4
14. KOLPAK COMPLIES WITH INTERNATIONAL ENERGY CONSERVATION CODE (IEC) SECTION C403.11, US DEPARTMENT OF ENERGY, AND NRCAN. R-VALUES ARE ASTM C518 TESTED. COOLER R-VALUES ARE R-29 FOR 4" THICK, R-36 FOR 5" THICK, AND R-44 FOR 6" THICK PANELS. FREEZER R-VALUES ARE R-32 FOR 4" THICK, R-40 FOR 5" THICK, R-48 FOR 6" THICK PANELS, AND R-29 FOR 4" FLOORS.
15. FLOORS NOT DESIGNED FOR WET MOPPING, PALLET JACKS OR FORKLIFT TRAFFIC.
16. ULTRA LIGHTING CERTIFIED STANDARD ILLUMINATION UNITS ARE LISTED CONDENSED UNITS ARE UL195.

FOR APPROVAL	KOLPAK INSTALLATION MANUAL
YOU MUST REVIEW ALL NOTES, DETAILS, DIMENSIONS, FINISHES, DOORS SIZES, LOCATIONS AND SWINGS	
☐ APPROVAL: NO CHANGE REQUIRED, MANUFACTURE AS DRAWN.	
☐ APPROVED AS NOTED: MAKE REQUIRED CHANGES AND MANUFACTURE AS DRAWN.	
☐ NOT APPROVED: DESIGN CHANGES REQUIRE DRAWING REVISION AND RESUBMISSION.	
DATE:_____ BY:_____	

DRAWING #: A270808R2
UNIT #: 001
ORDER #:

KOLPAK

FIVE FOUR COMBO
LEES SUMMIT,MO 64082 USA

TRIMARK - HOCKENBERG'S EQUIPMENT & SUPPLY CO

NO.	DESCRIPTION
1	ADD 2 DOORS
2	ADD 1 DOOR
3	ADD 1 DOOR
4	REVISIONS

SHEET #
AD-1 of 2

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

FIVE FOUR

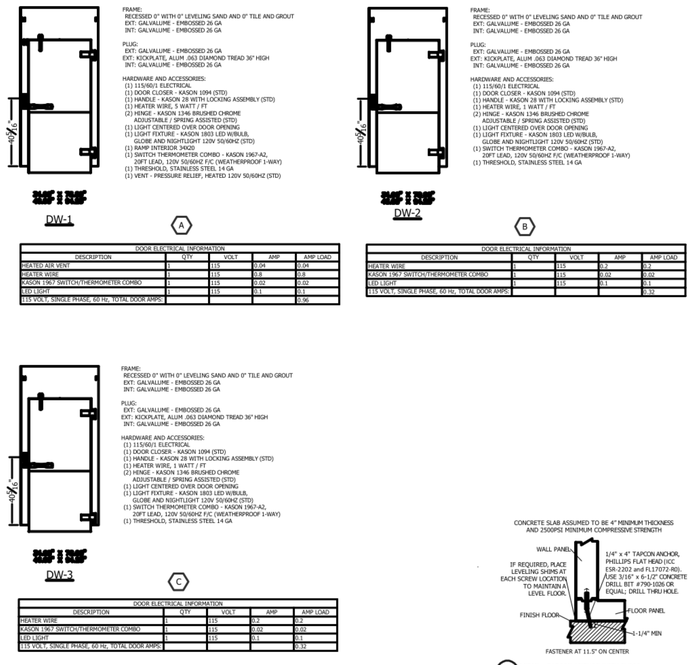
301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE:
FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY:	APPROVED BY:
JLH	NLB

SHEET TITLE:
WALK-IN

SHEET NUMBER:
QF1800

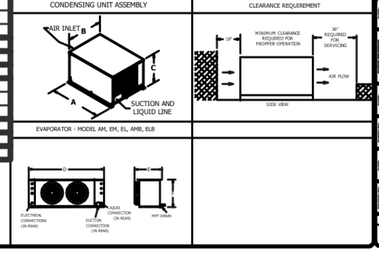


COMPARTMENT / CONDENSING UNIT

DESCRIPTION	TEMP F	QTY	MODEL #	REFRIGERANT	COMPRESSOR TYPE	DIMENSIONS L (A)	W (B)	H (C)	LBS	COMPRESSOR HP	RLA	LRA	V	HZ	Φ	CONDENSER FAN MTR FLA	V	Φ	TOTAL AMPS	MX AMP DISC	CONNECTIONS O.D. SUCT	LIQ	RCV CAP @ 90% FULL (lbs)
C02 COOLER 2	35	1	KPC98MZOP-2E	R448A	SCROLL	33	25.5	19.25	169	1	10	40.3	208-230	60	1	1.2	208-230	1	11.4	20	5/8	3/8	10.4
C01 COOLER 1	35	1	KPC68MZOP-2E	R448A	SCROLL	33	25.5	19.25	152	3/4	6.3	48	208-230	60	1	0.5	208-230	1	7	15	5/8	3/8	5.8
F01 FREEZER	-10	1	KPC24BLZOP-2E	R448A	SCROLL	33	40.125	22.25	213	2 1/2	16.5	73	208-230	60	1	2.4	208-230	1	19.1	35	7/8	3/8	13.6

COMPARTMENT / UNIT COOLER

DESCRIPTION	TEMP F	QTY	MODEL # (DEFROST: A-AIR E-ELECTRIC)	REFRIGERANT	DIMENSIONS L (D)	W (E)	H (F)	LBS	FAN TOTAL AMPS	V	HEATER TOTAL AMPS	V	Φ	CONNECTIONS O.D. SUCT	LIQ	DRAIN
C02 COOLER 2	35	1	KAM26-094-1EC-PR-8	R448A	43.625	15.5	16.75	55	1.6	115	0	N/A	0	5/8	3/8	3/4
C01 COOLER 1	35	1	KAM26-073-1EC-PR-8	R448A	43.625	15.5	16.75	52	1.6	115	0	N/A	0	5/8	3/8	3/4
F01 FREEZER	-10	1	KEL26-066-2EC-PR-8	R448A	43.625	15.5	16.75	52	1	208-230	9.8	208-230	1	7/8	3/8	3/4



DRAWING #: A2790809K2
UNIT #: 001
ORDER #:

KOLPAK

FIVE FOUR COMBO
LEES SUMMIT,MO 64002 USA

TRIMARK - HOCKENBERG'S EQUIPMENT & SUPPLY CO

NO.	DESCRIPTION
1	ADD ELEVATION
2	ADD PLAN
3	ADD ELEVATION
4	ADD ELEVATION
5	ADD ELEVATION
6	ADD ELEVATION

SHEET 2

AD-2 of 2

TriMark
Foodservice Equipment, Supplies and Design

North : Hockenbergs
14603 W. 112th Street
Lenexa, KS 66215

p. 913-491-4999

trimarkusa.com

This document contains confidential information, is an instrument of a professional service, and the property of TriMark. It shall not be used on other projects or for the extension of this project without TriMark's written approval.

Owner and all Contractors to check and verify existing dimensions and conditions in the field before starting construction and to notify TriMark of any material or detail changes.

REVISIONS

DATE	NO.	DESCRIPTION

FIVE FOUR

301 SW OLDHAM PARKWAY
LEE'S SUMMIT, MO

PROJECT PHASE: FOODSERVICE EQUIPMENT

DATE:	PROJECT #:
11/12/2024	2024136
DRAWN BY: JLH	APPROVED BY: NLB

SHEET TITLE: WALK-IN

SHEET NUMBER: QF1900