

ULLSWATER COMMUNITY CENTRE KITCHEN VENTILATION SYSTEM UPGRADES

**TOWNSHIP OF MUSKOKA LAKES
1503 OLD PARRY SOUND ROAD, UTTERSON**



INDEX

DRAWING	DESCRIPTION
TP.1	TITLE PAGE
M.1	MECHANICAL SCHEDULES, LEGEND, SPECIFICATIONS AND DETAILS
M.2	MECHANICAL DEMOLITION AND INSTALLATION LAYOUTS
E.1	ELECTRICAL LEGEND AND DETAILS
E.2	ELECTRICAL BUILDING LAYOUTS
E.3	ELECTRICAL SPECIFICATIONS

MECHANICAL LEGEND	
DOMESTIC COLD WATER PIPING	----
DOMESTIC HOT WATER PIPING	----
DOMESTIC HOT WATER RE--CIRCULATION PIPING	----
NATURAL GAS PIPING PIPING	----
SANITARY WASTE PIPING (ABOVE GRADE)	----
SANITARY WASTE PIPING (BELOW GRADE)	----
SANITARY VENT	----
STORM WASTE PIPING (ABOVE GRADE)	----
STORM WASTE PIPING (BELOW GRADE)	----
HEATING WATER SUPPLY PIPING	----
HEATING WATER RETURN PIPING	----
REFRIGERANT LIQUID PIPING	----
REFRIGERANT SUCTION PIPING	----
FUEL OIL SUPPLY	----FOS----
FUEL OIL RETURN	----FOR----
FUEL OIL FILL	----FOF----
FUEL OIL VENT	----FOV----
PIPE UP	○
PIPED DOWN	○
ISOLATION VALVE	✕
FLOW BALANCING VALVE	✕
CHECK VALVE	✕
BACKFLOW PREVENTER	✕
PRESSURE RELIEF VALVE (PRV)	✕
WATER METER	Ⓜ
NATURAL GAS METER	Ⓜ
CLEANOUT AT ABOVE	CO
CLEANOUT AT BELOW	CO
CONNECT TO EXISTING	—C—
AIR FLOW DIRECTION	←
FLEXIBLE DUCT CONNECTOR	≡
EXISTING SERVICES OR EQUIPMENT	▬
EXISTING SERVICES OR EQUIPMENT TO BE REMOVED	▬
CIRCULATOR	⊙
FLOOR DRAIN C/W TRAP	⊙
SUPPLY DUCT UP/DOWN	✕
RETURN DUCT UP/DOWN	✕
EXHAUST DUCT UP/DOWN	✕
ROUND DUCT UP/DOWN	⊕
FIRE DAMPER	FD
BALANCING DAMPER	BD
MOTORIZED DAMPER	Ⓜ
FIRE EXTINGUISHER (FE-1), 6-LITER A-K	Ⓜ
MANUAL PULL STATION	Ⓜ
THERMOSTAT	Ⓜ
THERMOSTAT HEATING (DIV. 16)	Ⓜ
THERMOSTAT VENTILATION (DIV. 16)	Ⓜ
HUMIDISTAT (DIV. 16)	Ⓜ
CARBON DIOXIDE SENSOR	Ⓜ
CARBON MONOXIDE SENSOR	Ⓜ
NITROGEN DIOXIDE SENSOR	Ⓜ
CONTROL WIRE (LOW VOLTAGE)	Ⓜ
DRAWING REVISION	Ⓜ
SYMBOL INDICATES A REVISION, (# DENOTES REVISION NUMBER)	Ⓜ
SYMBOL INDICATES MODIFICATION OR NEW WORK	Ⓜ
SYMBOL INDICATES NOTE DEMOLITION/ REMOVAL WORK	Ⓜ
DETAIL NUMBER	2
SHEET NUMBER/ DETAIL LOCATION	M.2
TYPE OF DIFFUSER/GRILLE OR (SEE SCHEDULE)	XX
SIZE- IMPERIAL: IN. METRIC: MM	XX
AIR FLOW- IMPERIAL: CFM, METRIC: L/S	XX

MASTER MECHANICAL LEGEND

ALL SYMBOLS/DEVICES LISTED MAY NOT APPLY

GENERAL SPECIFICATIONS:

- REVIEW WORK AREA AND REU. DRAWINGS IN CONJUNCTION WITH ALL DISCIPLINES BEFORE COMMENCING WORK. NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN PLANS AND POTENTIAL ISSUES ON WORK-SITE. NO ADDITIONAL PAYMENTS WILL BE MADE RELATED TO CLAIMS FOR ITEMS THAT WOULD HAVE BEEN APPARENT IF THE WORK AREA AND ALL PLANS WERE REVIEWED PRIOR TO PRICING THE WORKS.
- THE GENERAL CONTRACTOR SHALL OBTAIN AND PAY FOR NECESSARY PERMITS PERTAINING TO THE INSTALLATION OF THEIR WORK AND PROVIDE ANY CERTIFICATES AND SIGN-OFFS AS CIRCUMSTANCES REQUIRE.
- WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE, ONTARIO FIRE CODE, OCCUPATIONAL HEALTH AND SAFETY ACT, AND AUTHORITIES HAVING JURISDICTION. MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE CANADIAN STANDARDS ASSOCIATION, AND AUTHORITIES HAVING JURISDICTION. STANDARDS SET OUT IN DESIGN DRAWINGS SHALL NOT BE REDUCED BY CONFORMANCE TO APPLICABLE CODES AND STANDARDS. MAKE ALL MINOR MODIFICATIONS AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AT NO COST TO THE OWNER.
- SUBMIT ELECTRONIC SHOP DRAWINGS FOR EQUIPMENT LISTED ON THE SCHEDULES FOR REVIEW PRIOR TO ORDERING. REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES TO PROVIDE A COMPLETE WORKING SYSTEM CONSISTENT WITH THE INTENT OF THE DESIGN DRAWINGS. CONTRACTOR SHALL REVIEW DESIGN DRAWINGS, EQUIPMENT SCHEDULES AND SHOP DRAWINGS FOR ERRORS AND OMISSIONS AND ELEMENTS RELATING TO WORKS/ASSEMBLY ON-SITE.
- AT THE COMPLETION OF THE PROJECT THE CONTRACTOR SHALL PROVIDE MARKED UP RECORD DRAWINGS AND OPERATION AND MAINTENANCE MANUALS. THE FIRST PAGE OF THE OPERATION AND MAINTENANCE MANUAL SHALL BE A TYPE WRITTEN DOCUMENT EXPLAINING THE DETAILED MAINTENANCE REQUIREMENTS AND SCHEDULE FOR THE SYSTEM AND ANY OTHER INFORMATION THAT IS SPECIFIC TO THIS PROJECT. GENERIC OPERATIONS AND MAINTENANCE MANUALS WITH NO PROJECT SPECIFIC INFORMATION WILL NOT BE ACCEPTED.
- PROVIDE TRAINING FOR THE OPERATOR OR OWNER'S REPRESENTATIVE. PROVIDE COMMISSIONING SERVICES AS REQUIRED.
- LABEL ALL EQUIPMENT, PIPING, CONDUIT ETC.
- THE CONTRACTOR IS RESPONSIBLE FOR STORAGE AND SECURITY OF MATERIALS AND EQUIPMENT ON THE JOB SITE.
- THE OWNER'S PROPERTY MUST BE KEPT IN TIDY CONDITION, PROMPTLY REMOVE GARBAGE FROM THE SITE. CLEAN WORK AREA PRIOR TO ALL INSPECTIONS AND KEEP SITE IN A SAFE CONDITION.
- DESIGN DRAWINGS ILLUSTRATE THE GENERAL LAYOUT OF THE WORK ONLY. COORDINATE THE INSTALLATION OF WORK WITH OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER LAYOUT OF EQUIPMENT AND MATERIALS AND ENSURING THERE ARE NO INTERFERENCES WITH OTHER SYSTEMS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THEIR WORK.
- EQUIPMENT SHALL BE INSTALLED, STARTED, TESTED, AND ADJUSTED AS PER THE MANUFACTURERS' INSTRUCTIONS, AND AS NECESSARY TO ENSURE OPTIMUM PERFORMANCE. EQUIPMENT SHALL BE INSTALLED TO ALLOW FOR EASY ACCESS AND MAINTENANCE.
- THE CONTRACTOR SHALL GUARANTEE WORK PERFORMED UNDER THIS CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. ENSURE THAT ALL EQUIPMENT IS WARRANTED BY THE MANUFACTURER FOR A MINIMUM OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
- MATERIALS AND EQUIPMENT SHALL BE NEW, TOP QUALITY AND SPECIFICATION GRADE, EXCEPT WHERE NOTED OTHERWISE.
- THIS SPECIFICATION SHALL BE CONSIDERED TO BE THE BASE BID SPECIFICATION AND CONTRACTORS MUST CARRY THE BASE BID MANUFACTURERS IN THEIR QUOTATION. ALTERNATE MANUFACTURERS OF EQUIPMENT CAN ONLY BE OFFERED AS PROPOSED ALTERNATES WITH THE CORRESPONDING PRICE REDUCTIONS PASSED ALONG TO OWNER.
- THE CONTRACTOR SHALL NOT WELD TO OR MAKE A HOLE IN A STRUCTURAL MEMBER WITHOUT REVIEW FROM THE STRUCTURAL ENGINEER. ATTACHMENTS TO STRUCTURAL MEMBERS SHALL BE MADE WITH SUITABLE CLAMPS OR CLIPS.
- THE GENERAL CONTRACTOR SHALL PROVIDE ALL OPENINGS AND REINFORCEMENT FRAMING AS REQUIRED.
- ALL MATERIALS IN CEILING SPACE USED FOR RETURN AIR PLENUM MUST BE PLENUM RATED.
- CONFIRM FIRE SEPARATIONS WITH ARCHITECTURAL DRAWINGS AND GENERAL CONTRACTOR. ALL PENETRATIONS THROUGH FIRE SEPARATIONS SHALL BE FITTED WITH EXPANSION SLEEVES AND ULC CERTIFIED FIRE STOPPING. ACCEPTABLE MATERIAL: HILT OR APPROVED EQUIVALENT.
- THE OWNER RESERVES THE RIGHT TO MAKE MINOR ALTERATIONS TO THE LOCATION OF EQUIPMENT ETC AT NO ADDITION TO THE CONTRACT AMOUNT.
- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND INTENDED TO SERVE AS A GUIDE SHOWING QUANTITIES AND GENERAL ARRANGEMENTS AND ARE NOT NECESSARILY WORKING DRAWINGS FROM WHICH MEASUREMENTS CAN BE TAKEN, EXCEPT WHERE DIMENSION FIGURES ARE SPECIFICALLY SHOWN. INFORMATION INVOLVING ACCURATE MEASUREMENTS OF BUILDING SHALL BE TAKEN FROM ARCHITECTURAL BUILDING DRAWINGS OR FROM THE SITE.
- MAINTAIN ADEQUATE LIABILITY INSURANCE TO PROTECT OWNER AND ALL CONTRACTORS.
- TEMPORARY LIGHTING AND POWER FOR CONSTRUCTION BY GENERAL CONTRACTOR.
- ALL EQUIPMENT, PIPING, CONDUIT, WIRING, JUNCTION BOXES, HARDWARE, ETC. INSTALLED IN OPEN CEILING SPACES SHALL BE INSTALLED IN AN INCONSPICUOUS AND AESTHETICALLY PLEASING MANNER UP TO THE SOLE DISCRETION OF THE OWNER AND ENGINEER. ALL EQUIPMENT, PIPING, CONDUIT, WIRING, JUNCTION BOXES, HARDWARE SHALL BE INSTALLED IN CHASES, ABOVE ADJACENT CEILINGS WHERE POSSIBLE.
- SUITABLE ACCESS DOORS MUST BE PROVIDED WHERE NECESSARY TO ACCESS VALVES, JUNCTION BOXES, CLEAN OUTS, FIRE DAMPERS, AND OTHER EQUIPMENT AND APPURTENANCES. ALL ITEMS REQUIRING ACCESS PANELS ARE NOT NECESSARILY SHOWN, CARRY A REASONABLE COST ALLOWANCE. COORDINATE EXACT LOCATION OF COMPONENTS REQUIRING ACCESS AND SELECT SIZES WHICH ARE SUITABLE FOR MAINTENANCE.
- FOR GYPSUM WALLS AND CEILINGS IN OCCUPIED AREAS, PROVIDE CONCEALED DOORS WITH 5/8" RECESS TO RECEIVE DRYWALL, ACCEPTABLE MATERIAL: FOR STANDARD CEILINGS AND WALLS ACUDOR DW-5015 OR EQUIVALENT, FOR 90 MINUTE FIRE RATING ACUDOR FW(C)-5015 OR EQUIVALENT, FOR GREATER RATING, CONTACT ENGINEER AND ARCHITECT.
- FOR GYPSUM, PLASTER, MASONRY OR TILE WALLS AND CEILINGS IN UTILITY AND STORAGE AREAS, PROVIDE UNIVERSAL FLUSH ACCESS DOOR, ACCEPTABLE MATERIAL: FOR STANDARD CEILINGS AND WALLS ACUDOR UP-5000 OR EQUIVALENT, FOR 90 MINUTE FIRE RATING ACUDOR FW-5050, FOR GREATER RATING, CONTACT ENGINEER AND ARCHITECT.
- PAY FOR AND COORDINATE ALL UTILITY LOCATES AS REQUIRED.
- PROVIDE WATER-PROOFING OF BUILDING OPENINGS RELATED TO THE WORK OF ALL TRADES.

RANGE HOOD SCHEDULE										
TAG	MAKE	MODEL	DIMENSIONS (IN)			EXHAUST				ACCESSORIES/REMARKS
			LENGTH	WIDTH	HEIGHT	VOLUME (CFM)	E.S.P. (IN WC)	COLLAR SIZE (IN)		
								WIDTH	LENGTH	
RH-1	BROAN	BCS330WWC	19- $\frac{3}{8}$	29- $\frac{7}{8}$	6	210	0.1	3- $\frac{1}{2}$	10	COLOR: WHITE, C/W WALL CAP EXCLUDING INTEGRAL BACK DRAFT DAMPER, INSULATED DUCT TO EXTERIOR

FIRE SUPPRESSION SYSTEM SCHEDULE		
DESCRIPTION	MODEL	ACCESSORIES/REMARKS
RESTAURANT COOKING AREA FIRE SUPPRESSION SYSTEM	BUCKEYE	BFR5-5K FIRE SUPPRESSION AGENT CYLINDER, MB-1 CYLINDER MOUNTING BRACKET, BFR-VLV VALVE, BFR-DAK DISCHARGE ADAPTER KIT, BFR-CAP VALVE CAP, SRM2-E-120 SYSTEM RELEASING MODULE (TWO MS-DPDT MICROSWITCHES INCLUDED), SM-120 SOLENOID MONITOR, RPS-M REMOTE MECHANICAL PULL STATION, FLB-1 FUSIBLE LINK BRACKET, BFR-SC-100 SHIELDED CABLE INTERFACE, 2x N-1HP NOZZLE, 2x N-SA SWIVEL NOZZLE ADAPTOR

KITCHEN VENTILATION SYSTEM SPECIFICATIONS:

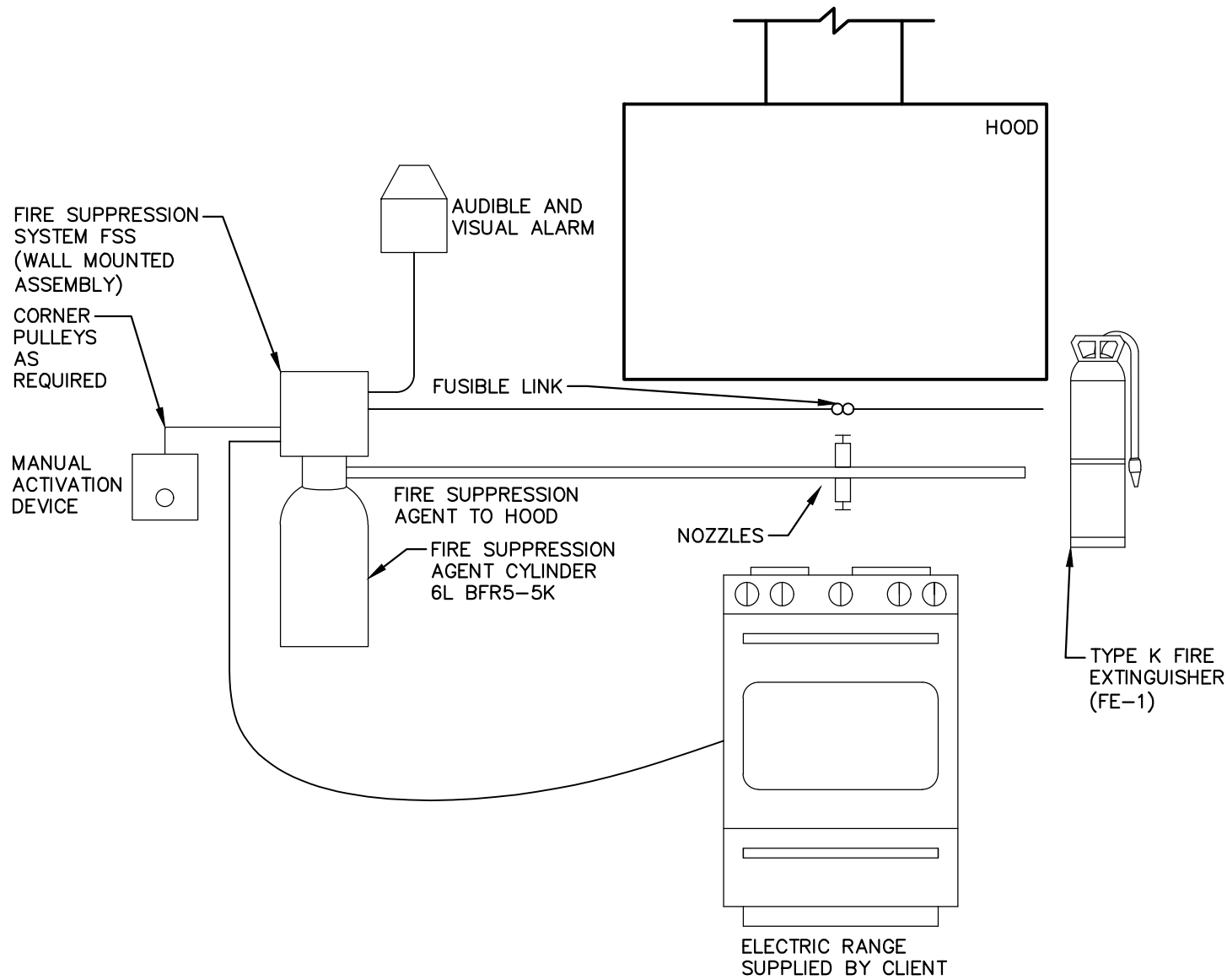
- THE PROPOSED KITCHEN EXHAUST HOOD LAYOUT SHOWN ON THESE DRAWINGS ARE TO ILLUSTRATE THE GENERAL LOCATIONS OF EQUIPMENT, A KITCHEN EXHAUST HOOD AIRFLOW RATE OF 100 CFM MINIMUM, 300 CFM MAXIMUM WAS USED TO ESTABLISH THE EXHAUST FAN AND MAKE-UP AIR SIZING. THIS AIRFLOW RATE SHALL BE CONFIRMED WITH THE FINAL KITCHEN LAYOUT PROVIDED BY THE OWNER. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF SHOP DRAWINGS FOR SYSTEM INSTALLATION INCLUDING HOOD, EXHAUST DUCT, APPLIANCES, FIRE DETECTORS, PIPING, NOZZLES, APPLIANCE SHUTOFF DEVICES, FIRE SUPPRESSION AGENT STORAGE CONTAINERS AS WELL AS CONTROLLER, AND MANUAL ACTIVATION DEVICES. SHOP DRAWINGS AND CERTIFICATION THAT INSTALLATION IS IN COMPLIANCE WITH THE TERMS OF THE LISTING AND MANUFACTURER'S INSTRUCTIONS SHALL BE SUBMITTED TO OWNER'S ENGINEER AND AHJ FOR REVIEW. SHOP DRAWINGS TO BE IDENTIFIED AS PRE-ENGINEERED AND UL300 LISTED, OR BE STAMPED BY A PROFESSIONAL ENGINEER.
- WORK MUST BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO ELECTRICAL SAFETY CODE, ONTARIO BUILDING CODE, ONTARIO FIRE CODE, OCCUPATIONAL HEALTH AND SAFETY ACT, AND LOCAL CODES.
- HOODS SHALL BE SIZED TO MATCH THE WIDTH OF THE KITCHEN RANGE.
- PROVIDE MESH FILTER IN HOOD.
- PROVIDE DUCTWORK WITH SLOPE BACK TO THE KITCHEN HOOD, DO NOT INSTALL WITH DIPS OR TRAPS, DO NOT TIE IN WITH ANY OTHER DUCTWORK SYSTEMS.
- PROVIDE ALL DUCT SUPPORT HARDWARE, JOINTS (TELESCOPING AND BELL JOINTS).
- PROVIDE SUITABLE WEATHER PROTECTIVE COATING ON ALL DUCTWORK ON EXTERIOR OF BUILDING
- LIGHTING UNITS IN HOODS SHALL BE LISTED FOR USE IN COOKING APPLICATIONS AND SHALL BE WIRED THROUGH KITCHEN HOOD.
- PROVIDE READILY ACCESSIBLE MEANS OF MANUAL ACTIVATION LOCATED AT 48" (1.2m) AFF. DEVICE SHALL BE INDEPENDENT OF AUTOMATIC ACTIVATION AND SHALL BE FULLY MECHANICAL. POST INSTRUCTIONS FOR MANUAL OPERATION OF FIRE EXTINGUISHING SYSTEM IN CONSPICUOUS LOCATION IN KITCHEN.
- PROVIDE K-CLASS PORTABLE FIRE EXTINGUISHER IN COOKING AREAS TO NFPA 10.
- AUTOMATIC FIRE EXTINGUISHING SYSTEMS SHALL COMPLY WITH UL300 AND NFPA 12, NFPA 13, NFPA 17, NFPA 17A.
- INSTALLATION AND CLEARANCES OF ALL KITCHEN COOKING APPLIANCES SHALL BE TO MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE SHUNT TRIP BREAKERS FOR ALL ELECTRICAL COOKING APPLIANCES.
- WHERE OCCUPANCY IS PROTECTED BY FIRE ALARM SYSTEM, PROVIDE SUPERVISORY EQUIPMENT/SIGNAL TO FIRE ALARM SYSTEM WHERE ELECTRICAL POWER IS REQUIRED TO OPERATE AUTOMATIC FIRE EXTINGUISHING SYSTEM.
- VENTILATION NORMAL OPERATION.
- UPON VENTILATION SYSTEM START SIGNAL FROM THE KITCHEN HOOD MANUFACTURER SUPPLIED SWITCH, THE INTERNAL EXHAUST FAN SHALL TURN ON.
- UPON VENTILATION SYSTEM STOP SIGNAL FROM THE KITCHEN HOOD MANUFACTURER SUPPLIED SWITCH, THE INTERNAL EXHAUST FAN SHALL TURN OFF.
- UPON ACTIVATION OF FIRE EXTINGUISHING SYSTEM THE FOLLOWING SEQUENCE OF OPERATION SHALL OCCUR:
- ALL SOURCES OF FUEL AND POWER SHALL BE AUTOMATICALLY SHUT OFF TO THE RANGE. ALL SHUTOFF DEVICES SHALL REQUIRE A MANUAL RESET.
- AUDIBLE AND/OR VISUAL ALARM SHALL BE ACTIVATED.
- WHERE OCCUPANCY IS PROTECTED BY FIRE ALARM SYSTEM, ACTIVATION SHALL TRIGGER FIRE ALARM SYSTEM BY MEANS OF MICRO-SWITCH.
- HOOD EXHAUST FAN SHALL STAY RUNNING AFTER EXTINGUISHING SYSTEM HAS BEEN ACTIVATED UNLESS FAN SHUTDOWN IS REQUIRED BY A LISTED COMPONENT IN THE AUTOMATIC FIRE EXTINGUISHING SYSTEM.
- ELECTRICAL POWER TO ELECTRICAL COOKING APPLIANCES SHALL BE TURNED OFF VIA A SHUNT TRIPPER FROM THE FIRE SUPPRESSION CONTROLLER.
- EXHAUST HOOD LIGHTS SHALL BE TURNED OFF VIA A CONTROL RELAY FROM THE FIRE SUPPRESSION CONTROLLER.

HVAC SPECIFICATIONS

- DUCTS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE, ONTARIO FIRE CODE, AND THE ASHRAE AND SMACNA STANDARDS.
- AIR DISTRIBUTION SYSTEMS MUST BE BALANCED TO WITHIN 5% OF THE SPECIFIED VALUES SHOWN ON THE DRAWINGS. BALANCE AIR HANDLING UNITS PROVIDING VENTILATION TO THE VENTILATION LEVELS SHOWN. THE BALANCING MUST BE PERFORMED BY AN INDEPENDENT, NEBB CERTIFIED FIRM, SPECIALIZING IN THIS WORK. THE MECHANICAL CONTRACTOR SHALL TURN OVER THE BALANCING REPORT PRIOR TO SUBSTANTIAL COMPLETION BEING AWARDED.
- VOLUME DAMPERS MUST BE INSTALLED IN THE AIR DISTRIBUTION SYSTEMS AS SHOWN ON THE DRAWINGS AND AS NECESSARY TO ALLOW PROPER BALANCING.
- DUCTS MUST BE SEALED TO PREVENT AIR LEAKAGE. SEAL TO SMACNA AND ASHRAE 90.1 STANDARDS. FOR UNPAINTED DUCTS INSTALLED IN VISIBLE SPACES, THE DUCT MASTIC IS TO BE APPLIED TO THE INTERIOR OF DUCT JOINTS AND PENETRATIONS AND SHALL NOT BE VISIBLE FROM THE EXTERIOR. MASTIC MAY BE APPLIED TO THE EXTERIOR OF DUCTS ONLY IN AREAS WHERE IT IS NOT VISIBLE TO OCCUPANTS. EXPOSED MASTIC SHALL BE PAINTABLE AND IS TO BE APPLIED NEATLY WITH THE EXCESS REMOVED. REFER TO ARCHITECT'S DRAWINGS TO CONFIRM WHETHER OR NOT DUCTS ARE TO BE PAINTED.
- FLEXIBLE DUCT CONNECTIONS SHALL BE USED TO CONNECT FANS OR AIR HANDLERS TO RIGID DUCT TO REDUCE THE TRANSFER OF NOISE VIBRATION.
- FINAL CONNECTIONS TO DIFFUSERS SHALL BE MADE USING HARD ELBOWS CONNECTED TO FLEXIBLE ALUMINUM DUCTS TO MINIMIZE NOISE VIBRATION WHERE SHOWN. MAXIMUM 5' OF FLEXIBLE DUCT.
- FIRE DAMPERS MUST HAVE A FIRE PROTECTION RATING IN ACCORDANCE WITH THE NFPA AND MUST BEAR THE ULC LABEL. USE DYNAMIC AND TYPE 'B' FIRE DAMPERS ONLY.
- INSTALL R-8 FOIL BACKED VAPOUR RETARDANT FIBERGLASS INSULATION WITH JOINTS AND SEAMS SEALED WITH 3" FOIL TAPE ON DUCTS IN UNCONDITIONED SPACES.
- PROVIDE TWO (2) SETS OF FILTERS FOR EQUIPMENT. ONE (1) SET FOR USE DURING CONSTRUCTION, AND ONE (1) SET TO BE INSTALLED IMMEDIATELY PRIOR TO BALANCING.
- DUCT SIZES ARE SHOWN IN INCHES AND DO NOT INCLUDE FOR INTERNAL INSULATION.
- PIPES AND EQUIPMENT MUST BE INSTALLED SO AS TO MINIMIZE THE TRANSFER OF VIBRATION TO THE BUILDING AND ALSO TO ALLOW FOR EXPANSION AND CONTRACTION AS NECESSARY.
- EQUIPMENT SHALL BE ASHRAE 90.1 COMPLIANT.
- LINE VOLTAGE STARTERS, CONTROLS AND EQUIPMENT SAFETY SWITCHES SHALL BE SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED ON THE ELECTRICAL DESIGN DRAWINGS. LOW VOLTAGE STARTERS AND CONTROLS SHALL BE SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR.
- ELECTRICAL WIRING, CONDUIT, JUNCTION BOXES, BACK BOXES, MOUNTING HARDWARE ETC. ABOVE 24V TO BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. CONTROLS WIRING, CONDUIT, JUNCTION BOXES, BACK BOXES, MOUNTING HARDWARE ETC. 24V AND BELOW TO BE INSTALLED BY MECHANICAL CONTRACTOR (MECHANICAL CONTRACTOR MAY SUB-CONTRACT THIS WORK TO ELECTRICAL CONTRACTOR).
- THERMOSTATS AND CONTROLLERS INTENDED TO BE OPERATED BY THE OCCUPANT AND LOCATED IN A BARRIER-FREE PATH OF TRAVEL. SHALL BE MOUNTED 4FT (1200MM) ABOVE THE FINISHED FLOOR.
- THE MECHANICAL CONTRACTOR SHALL INSTALL PIPE WITH SLEEVES IN ORDER TO PREVENT CONTACT WITH CONCRETE, MASONRY OR SIMILAR MATERIALS.
- ROOF CURBS AND FLASHINGS ARE TO BE SUPPLIED BY THE MECHANICAL CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR/ROOFER.
- ALL EQUIPMENT SHALL BE INSTALLED IN SUCH A MANNER THAT MANUFACTURER'S RECOMMENDED CLEARANCES ARE MAINTAINED. THE CONTRACTOR SHALL LAY OUT THE WORK BASED ON THE MANUFACTURER'S RECOMMENDED CLEARANCES AND ADVISE ENGINEER IMMEDIATELY IF ANY SITE CONDITIONS NEGATIVELY AFFECT THE PROPER INSTALLATION OF ALL EQUIPMENT.
- ALL DOOR UNDERCUTS INDICATED SHALL BE MIN 3/4". COORDINATE WITH GENERAL CONTRACTOR.
- THIS CONTRACTOR SHALL REVIEW AND CONFIRM ALL EXISTING INDOOR METALLIC PIPING SYSTEMS ARE BONDED. PROVIDE BONDING FOR ALL NEW INDOOR METALLIC PIPING SYSTEMS AND EXISTING SYSTEMS WITHOUT PROPER BOND. BONDING SHALL BE INSTALLED TO THE REQUIREMENTS OF DSCC 10-406. THE GENERAL CONTRACTOR SHALL DETERMINE IF BONDING IS BY MECHANICAL OR ELECTRICAL.
- CLEAN ALL EXISTING GRILLES AND DIFFUSERS WHICH ARE SHOWN TO REMAIN.
- DUCTWORK CONNECTIONS TO OUTDOOR AIR HANDLING UNITS WITH HORIZONTAL DISCHARGE SHALL BE EQUIPPED WITH WEATHER-TIGHT GASKETS AND FLASHING SHALL BE PROVIDED.

KITCHEN VENTILATION SYSTEM FIRE SUPPRESSION SCHEMATIC NOTES:

- REFER TO KITCHEN VENTILATION SYSTEM SPECIFICATIONS ON DRAWING M1 FOR SEQUENCE OF OPERATIONS.
- DETAILED DESIGN BY SUPPLIER/CONTRACTOR. SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER PER SPECIFICATION DRAWING M1.
- SCHEMATIC IS GENERAL ONLY. REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR DETAILED WIRING INFORMATION.
- PROVIDE FACTORY PRE-PIPED NOZZLES FOR WET CHEMICAL FIRE SUPPRESSION SYSTEM CONFORMING TO NFPA 96, NFPA 17A, ULC 1254 AND AHJ REQUIREMENTS.



KITCHEN VENTILATION FIRE SUPPRESSION SCHEMATIC

1 M.1 - SCALE: NTS

DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

BENCHMARKS

NOTES

No.

REVISION DESCRIPTION

DATE

ENGINEER STAMP



ULLSWATER COMMUNITY CENTRE TOWNSHIP OF MUSKOKA LAKES

MECHANICAL SCHEDULES, LEGEND, SPECIFICATIONS, AND DETAILS

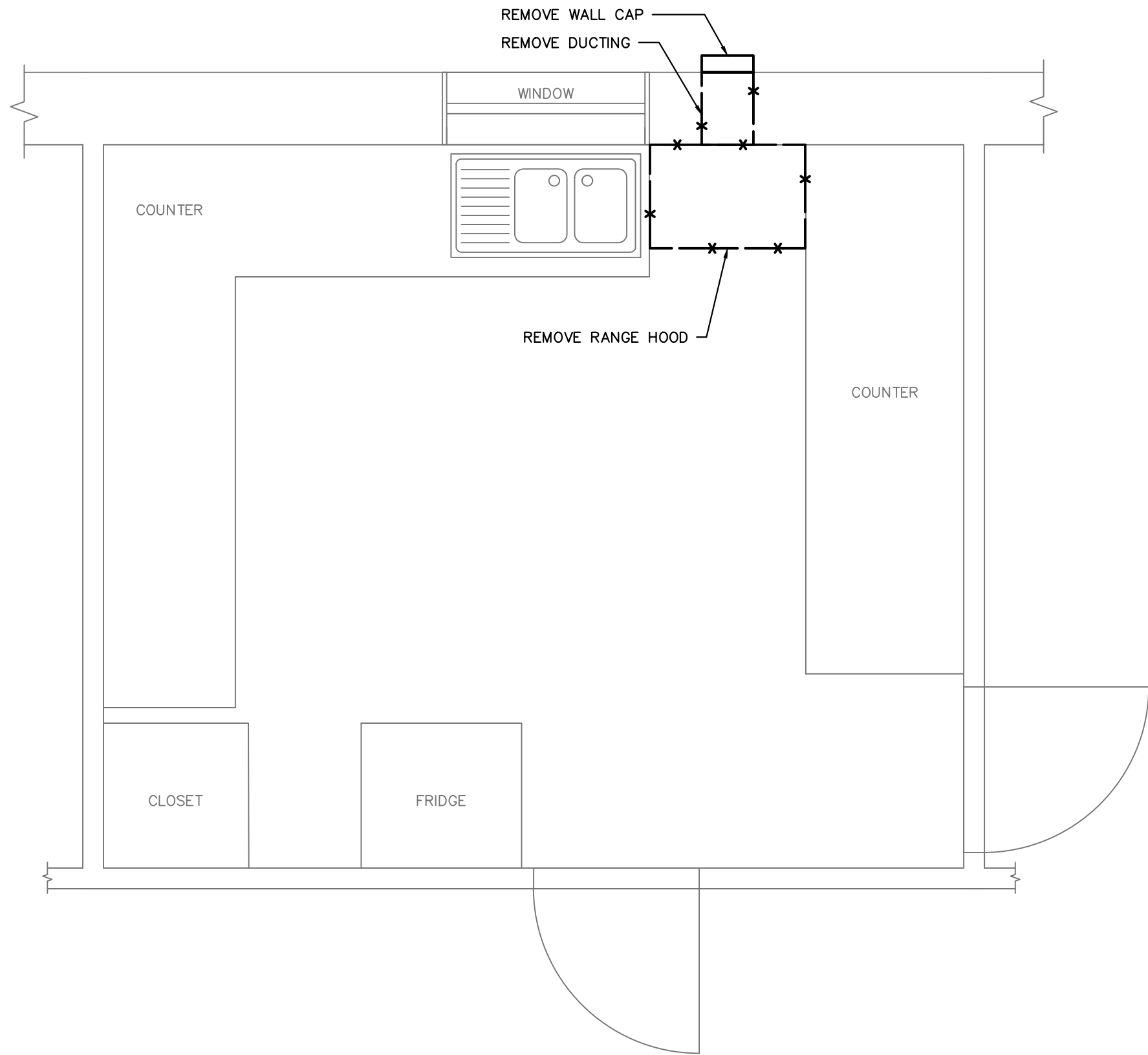


DESIGN: AB/MCG/JT
DRAWN: AB/MCG
CHECK: JT

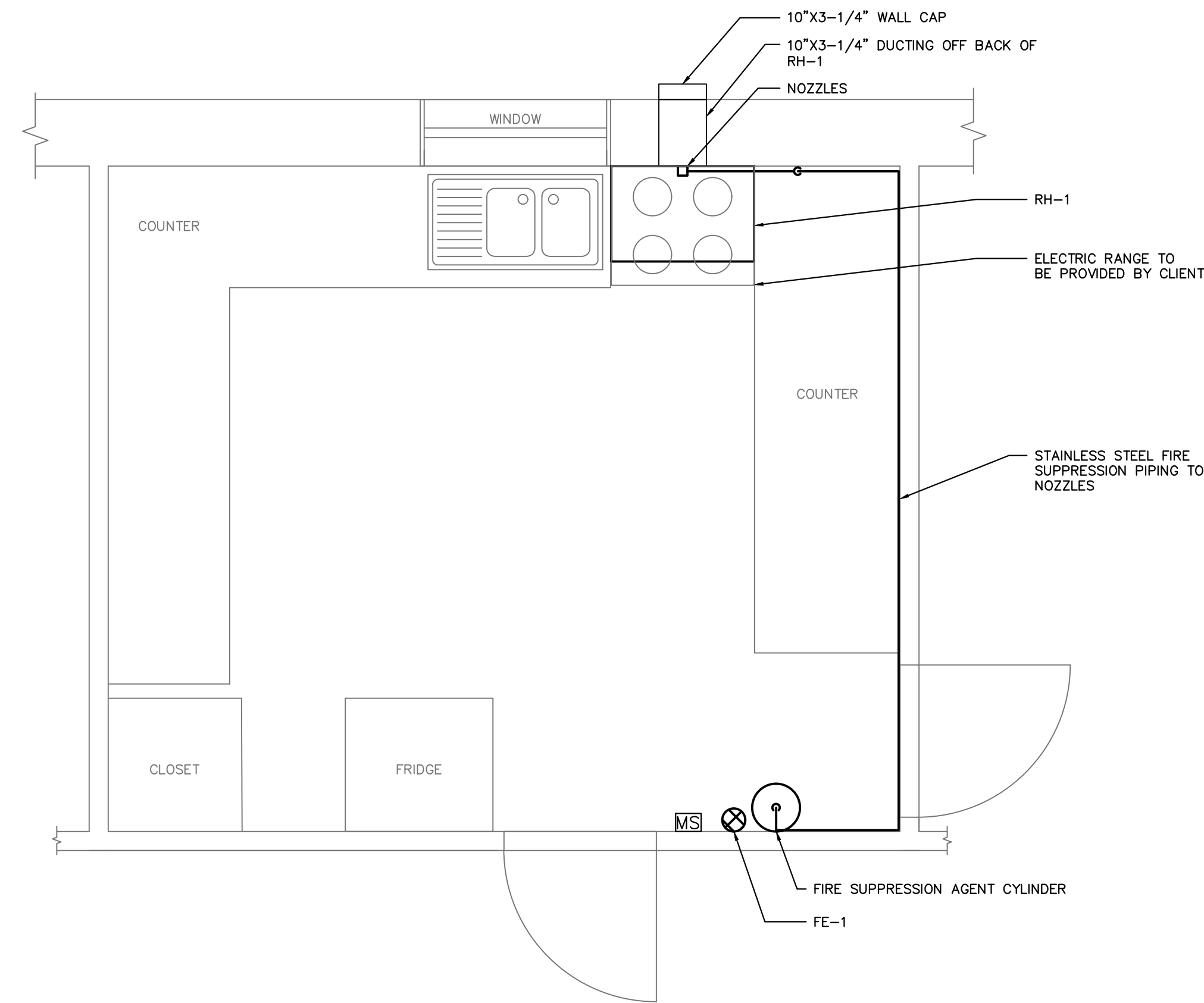
FILE: 225022
DATE: MAY 2025
SCALE: AS SHOWN

DWG:

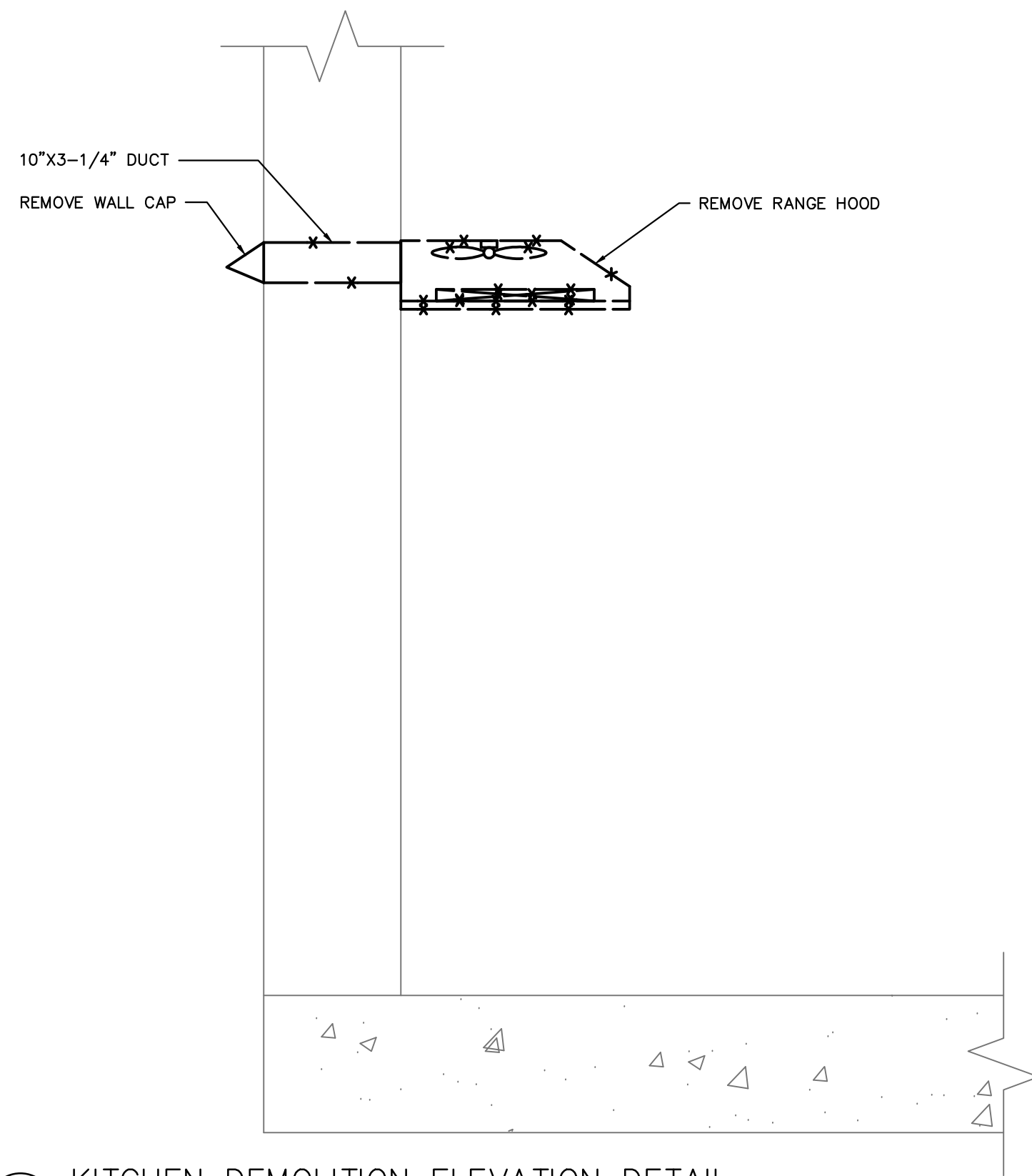
M.1



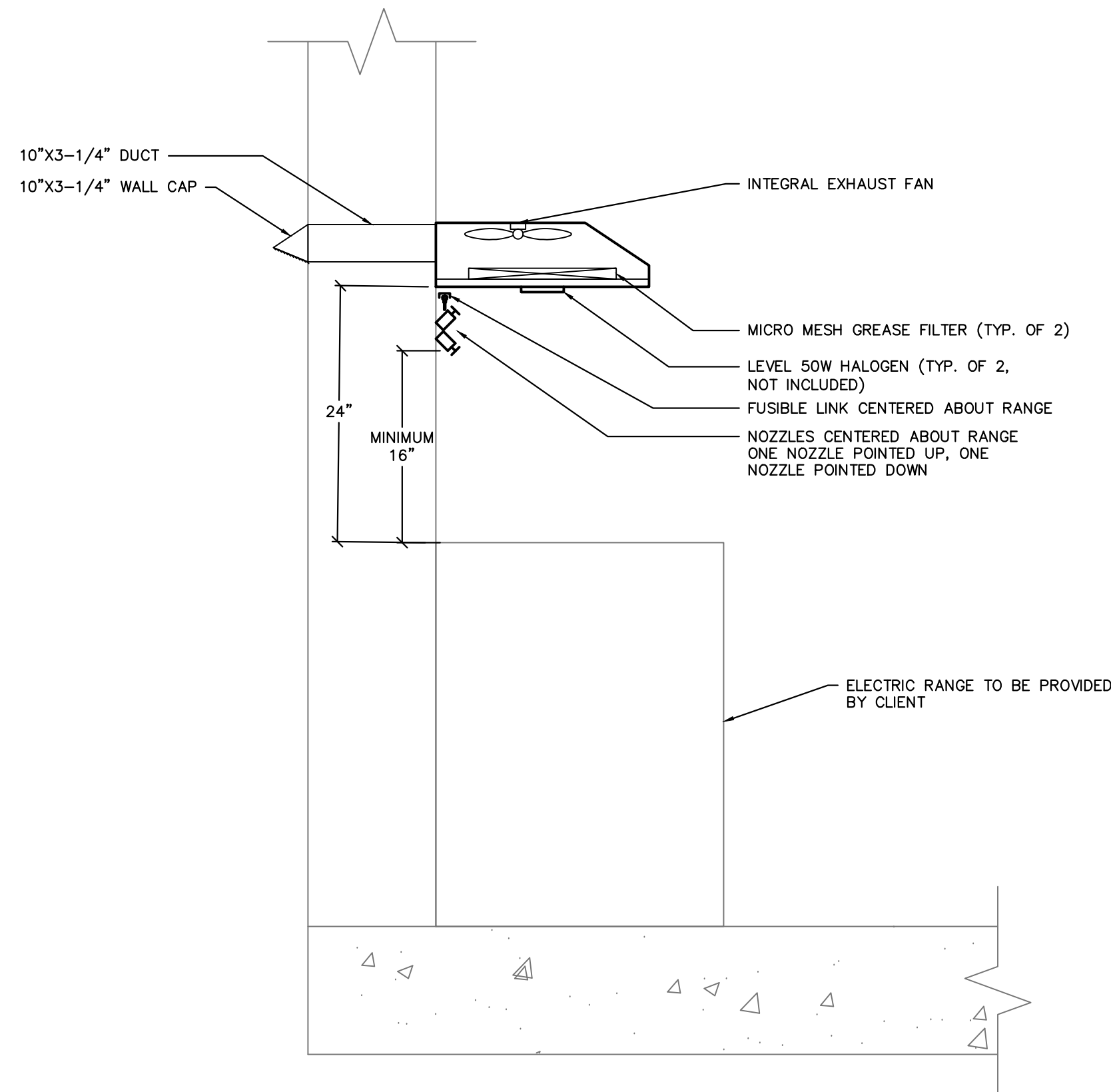
1
M.2
KITCHEN DEMOLITION LAYOUT
— SCALE: 1/2"=1'-0"



3
M.2
KITCHEN INSTALLATION LAYOUT
— SCALE: 1/2"=1'-0"



2
M.2
KITCHEN DEMOLITION ELEVATION DETAIL
— SCALE: 1"=1'-0"



4
M.2
KITCHEN INSTALLATION ELEVATION DETAIL
— SCALE: 1"=1'-0"

DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

BENCHMARKS

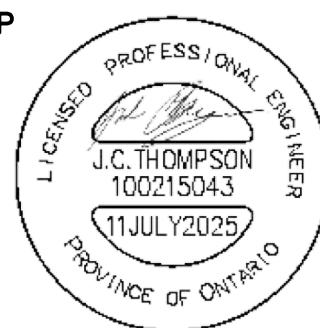
NOTES

No.

REVISION DESCRIPTION

DATE

ENGINEER STAMP



ULLSWATER COMMUNITY CENTRE TOWNSHIP OF MUSKOKA LAKES

MECHANICAL DEMOLITION AND INSTALLATION LAYOUTS



DESIGN: AB/MCG/JT

FILE: 225022

DWG:

DRAWN: AB/MCG

DATE: MAY 2025

M.2

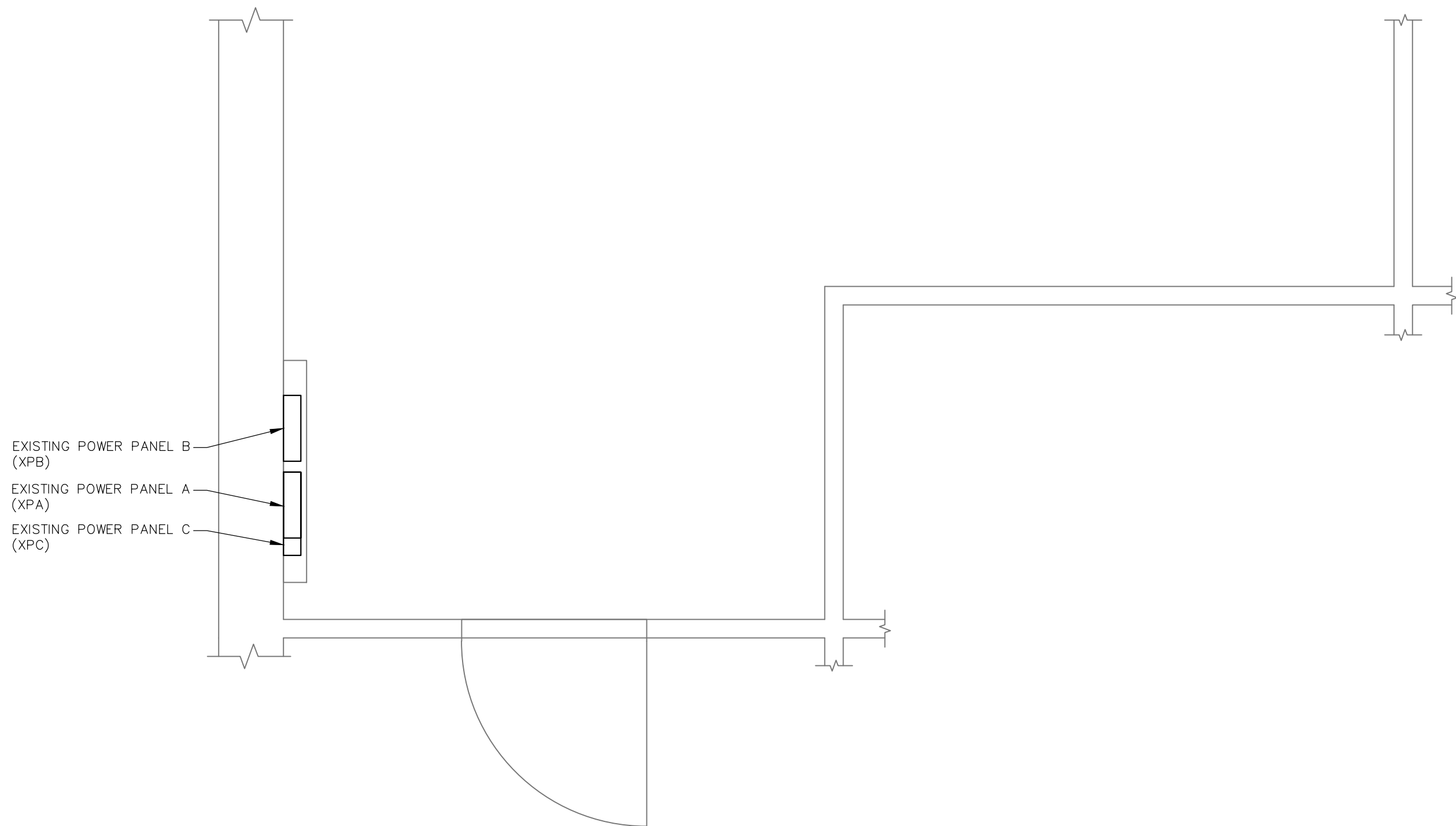
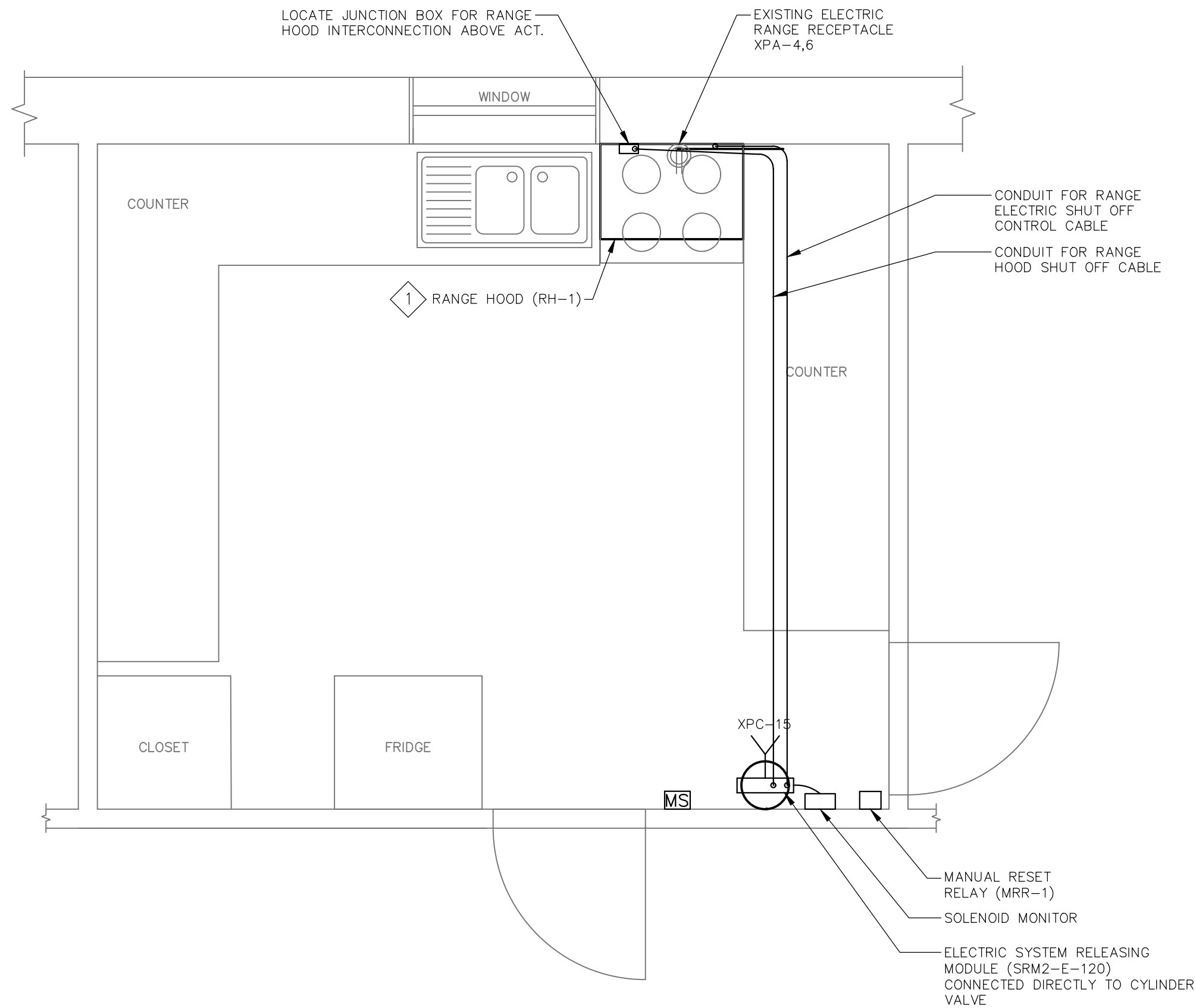
CHECK: JT

SCALE: AS SHOWN

DRAWING NOTES

1

RE-USE WIRING FROM EXISTING RANGE HOOD. THE CIRCUIT NUMBER COULD NOT BE IDENTIFIED FROM THE PANEL DIRECTORIES, CONTRACTOR TO INVESTIGATE.



1
E.2

KITCHEN LAYOUT

• SCALE: 1/2" = 1'-0"

2
E.2

BASEMENT LAYOUT

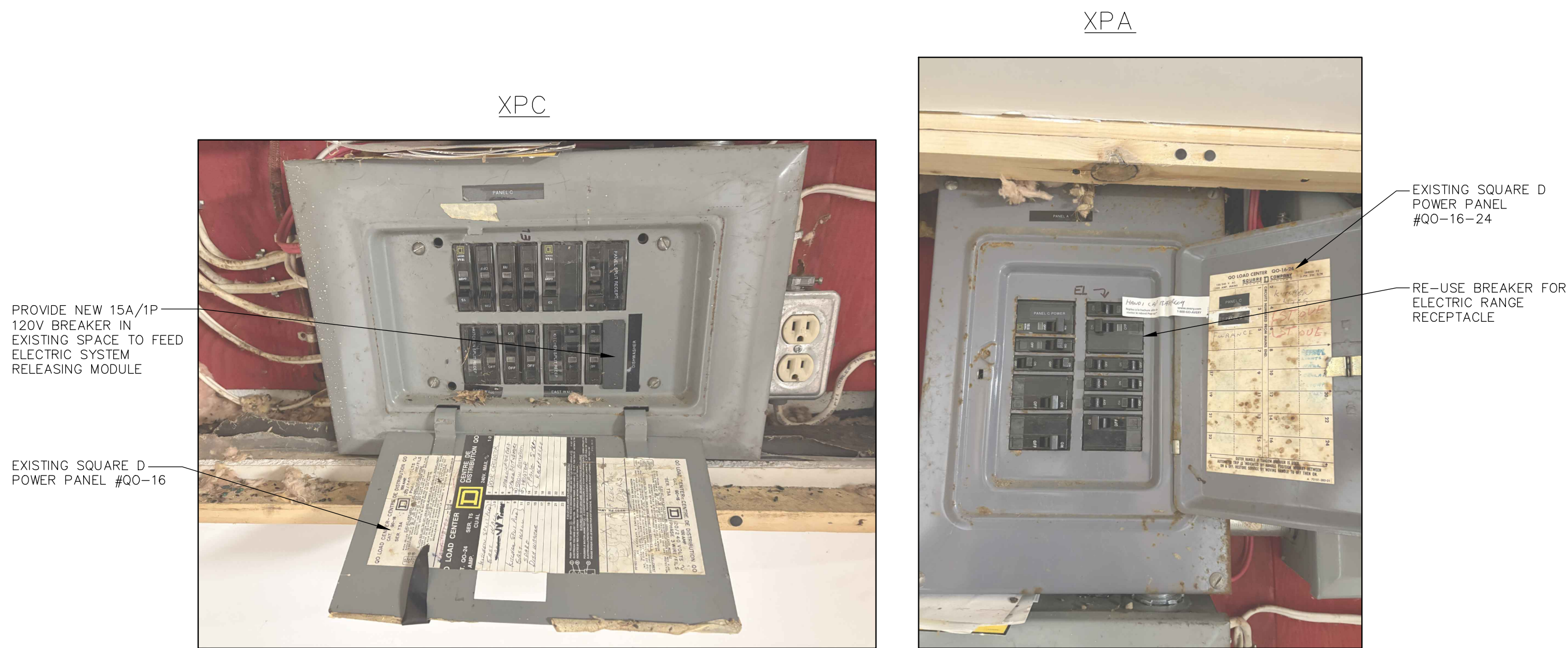
• SCALE: 1/2" = 1'-0"



3
E.2

EXISTING POWER PANEL LOCATIONS

• SCALE: NTS



4
E.2

EXISTING POWER PANEL MODIFICATIONS

• SCALE: NTS

DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

BENCHMARKS

NOTES

No.	REVISION DESCRIPTION	DATE
1.	ISSUED FOR CLIENT REVIEW	JUNE/2025
2.	ISSUED FOR TENDER	JULY/2025

ENGINEER STAMP



ULLSWATER COMMUNITY CENTRE

TOWNSHIP OF MUSKOKA LAKES

ELECTRICAL

BUILDING LAYOUTS



DESIGN: MCG / PP	FILE: 225022	DWG: E.2
DRAWN: MCG	DATE: MAY 2025	
CHECK: SRT	SCALE: AS SHOWN	

		<div><div>Electrical Specifications</div><div>Page 1 of 5</div><div><div>PART 1 – GENERAL</div><div><div>1.1General</div><div><div><div>.1</div><div>In case of a discrepancy between statement(s) or value(s) in this section or contract drawing(s), the higher statement or value takes precedence and shall govern.</div></div><div><div>.2</div><div>"Local Inspector, Inspection Department or Authority" mean agents of any authority having jurisdiction over construction and safety standards associated with any part of electrical work on site, such as ESA for Ontario.</div></div><div><div>.3</div><div>"Power Supply Authority" or "LUC" means electrical local utility company responsible for delivery of electrical power to project site.</div></div><div><div>.4</div><div>"Electrical Code" or "OESC" means Ontario Electrical Safety Code C22.1 or code in force at project location, latest edition.</div></div><div><div>.5</div><div>"Indicated" means as shown on contract drawings or noted in contract documents.</div></div><div><div>.6</div><div>"Provide" means fabricate, supply, install, test and commission the electrical system and/or equipment.</div></div><div><div>.7</div><div>"Remove" or "Removed" means to disconnect, remove, and dispose of equipment, material or item.</div></div></div><div><div>1.2Scope of Work</div><div><div>.1</div><div>Provide new circuit breakers for new electric ranges as per contract drawings.</div></div><div><div>.2</div><div>Provide control wiring for fire suppression system as per contract drawings.</div></div><div><div>.3</div><div>Site Acceptance Testing (SAT) Assistance: When system is ready for service, provide assistance with operating instructions and start-up procedures during scheduled commissioning. Provide all necessary assistance to place the equipment into normal operating modes and train the Township operators.</div></div><div><div>.4</div><div>Coordinate construction schedule with the Township prior to commencing work.</div></div><div><div>.5</div><div>Conduit systems, as indicated, complete with wiring and terminations.</div></div><div><div>.6</div><div>All conduit, fittings, outlets, field terminations, field wiring and cable as required, to provide a complete operating system.</div></div><div><div>.7</div><div>Include all necessary mounting hardware, channel supports and fasteners to provide a complete operating system.</div></div><div><div>.8</div><div>ESA Inspections throughout project construction stages as required. Final inspection certificate will be required for Substantial Performance.</div></div></div><div><div>1.3Standards</div><div><div>.1</div><div>Provide all products and services in accordance with the latest addition of the following codes and standards:<div><div>.1</div><div>Ontario Electrical Safety Code, latest edition applicable.</div><div>.2</div><div>Canadian Standards Association.</div><div>.3</div><div>Ontario Building Code, Latest Edition.</div></div></div></div></div></div></div></div>		<div><div>Electrical Specifications</div><div>Page 2 of 5</div><div><div>1.4Permits, Fees and Inspection</div><div><div>.1</div><div>Provide all licenses, permits and certificates required by the LUC at no additional expense.</div></div><div><div>.2</div><div>Arrange and pay for all required inspection(s), including but not limited to the Electrical Safety Authority.</div></div><div><div>.3</div><div>Upon completion of the Work, provide the Township with final, unconditional certificates of approval by the local inspection authorities.</div></div></div><div><div>1.5Examination of the Site and Contract Documents</div><div><div>.1</div><div>Examine Drawings and Specifications of the complete Project and become familiar with all local site conditions.</div></div><div><div>.2</div><div>Submission of Tender confirms the Contractor accepts the Contract and site conditions without qualifications.</div></div><div><div>.3</div><div>Failure to determine the existing conditions or the nature of the construction shall not be a basis for granting compensation.</div></div></div><div><div>1.6Construction Drawings</div><div><div>.1</div><div>The electrical drawings are diagrammatic, intended to convey the scope of work and indicate general arrangements of equipment. Do not scale drawings unless a scale is identified.</div></div><div><div>.2</div><div>Have the location all equipment shown in the drawings reviewed by the Township before proceeding with the installation. Inform the Township of significant changes in location of equipment to meet field conditions and receive their authorization before proceeding. Obtain from the Township the location of equipment not definitely located in the drawings.</div></div><div><div>.3</div><div>Locations of all material equipment indicated in the drawings are approximate and may be subject to revision found necessary or desirable by the Consultant at the time the work is installed. The Township may at their discretion request the relocation of electrical equipment within three metres of that shown prior to roughing in. This relocation shall be at no additional cost.</div></div><div><div>.4</div><div>Drawings do not generally indicate the number of wires within conduits for control wiring. Provide the correct wire size and quantity as required by the indicated circuitry and control diagrams.</div></div></div><div><div>1.7Submissions</div><div><div>.1</div><div>Submit shop drawings in accordance with general Contract Conditions and include arrangement drawings, bill of materials, diagrams, nameplate drawings and product data as applicable for the following equipment:<div><div>.1</div><div>Circuit breakers.</div><div>.2</div><div>Tandem breakers.</div><div>.3</div><div>Fire suppression system range isolation device c/w manual reset.</div></div></div></div><div><div>.2</div><div>Product data sheets shall include the name of the manufacturer and be clearly marked to show which items, features and options are offered.</div></div><div><div>.3</div><div>Shop drawings that are not presented as required will be returned for revision and resubmission.</div></div><div><div>.4</div><div>Submittal Procedure:<div><div>.1</div><div>The Contractor shall submit digital copies in PDF format to the Owner and Engineer via email. All drawings are to be submitted electronically in pdf format.</div></div><div><div>.2</div><div>The drawings will be returned to the Contractor stamped and marked "Conforms with Intended Design", "Conforms with Intended Design with Revisions Noted", or "Non-Conforming – Revise and Resubmit".</div></div><div><div>.3</div><div>When drawings are returned "Non-Conforming – Revise and Resubmit", make the necessary alterations and resubmit.</div></div><div><div>.4</div><div>When drawings are returned "Conforms with Intended Design with Revisions Noted", the drawings may be used to execute the work in compliance with the Contract Documents. No other alterations are to be made to the drawings by the Contractor subsequent to receipt of drawings stamped and marked as above. If further changes are made in addition to the Engineer's notations, then the drawings must be resubmitted for further review.</div></div></div></div></div></div>		<div><div>Electrical Specifications</div><div>Page 3 of 5</div><div><div>.5</div><div>When drawings are returned "Conforms with Intended Design", the Contractor shall be responsible for distribution of additional copies of Shop Drawings as necessary and as requested by the Engineer..</div></div><div><div>.5</div><div>The review of shop drawings by the Township or Engineer does not relieve the Contractor of their responsibilities for compliance with the Contract Documents.</div></div><div><div>.6</div><div>At end of project, provide PDF copy of the Operating and Maintenance Manuals of all equipment, including copies of shop drawings and all test results.</div></div></div> <div><div>1.8Construction Record Drawings</div><div><div>.1</div><div>Keep one set of all applicable contract (including updates) and shop drawings at the site.</div></div><div><div>.2</div><div>Ensure that the latest issue drawings are marked up to reflect the work as installed and have these available for the Township's review at site.</div></div><div><div>.3</div><div>Upon completion of the work, transfer all revisions to a clean set of prints and submit to Consultant for "As-Built" record as part of the final job documentation.</div></div></div> <div><div>1.9Finishes</div><div><div>.1</div><div>Shop-finish metal enclosures by application of rust resistant primer inside and out, and at least two coats of finishing enamel.</div></div><div><div>.2</div><div>Clean and touch up any surfaces on shop-painted surfaces marred during shipment or installation with paint selected to match the original.</div></div><div><div>.3</div><div>Wire brush and prime using a zinc-rich coating on any non-coated steel hangers, racks and fasteners to prevent rusting.</div></div></div> <div><div>1.10Warranty</div><div><div>.1</div><div>All material to warrantied for material and labour for one (1) year upon substantial completion.</div></div></div> <div><div>PART 2 – PRODUCTS</div><div><div>2.1Basic Materials</div><div><div>.1</div><div>Provide all necessary mounting brackets, hangars, etc., as required for installation.</div></div><div><div>.2</div><div>Upon delivery of equipment on site and quantities accounted for, the contractor will assume liability for damaged, lost, stolen, etc..</div></div><div><div>.3</div><div>Contractor is responsible for all labour and material costs for equipment failures during the warranty period.</div></div></div><div><div>2.2Circuit Breaker</div><div><div>.1</div><div>Coordinate breaker requirements with existing panelboard manufacturer.</div></div></div><div><div>2.3Low Voltage Wire (1000V and Below)</div><div><div>.1</div><div>Conductors: stranded Copper conductors, with minimum power conductor size: No. 12 AWG, minimum control conductor size: No. 14 AWG.</div></div><div><div>.2</div><div>Power conductors: size as indicated, with cross linked polyethylene (XLPE) insulation rated 1000 V – RW90 or RWU90, as indicated.</div></div><div><div>.3</div><div>Provide Sunlight Resistant ("SR" type) insulated conductors where exposed to weather.</div></div><div><div>.4</div><div>Control conductors: RW90, XLPE insulation rated 600V – RW90.</div></div><div><div>.5</div><div>Control wiring: copper with thermoplastic insulation type TEW rated at 600V.</div></div></div><div><div>2.4Conduits and Ducts</div><div><div>.1</div><div>Minimum above grade conduit size: 21mm (3/4"), and minimum below grade conduit size: 27mm (1").</div></div></div></div>
--	--	--	--	---	--	---