

MECHANICAL SPECIFICATIONS

1. DOCUMENTS

- 1 THESE DOCUMENTS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS. THE INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS OF THE ARCHITECTURAL DOCUMENTS ARE FULLY BINDING TO THE MECHANICAL CONTRACTOR.
2 REFER TO OTHER DIVISIONS TO ENSURE FULL COORDINATION.
3 "PROVIDE" IN THIS DIVISION MEANS TO "SUPPLY AND INSTALL."

2. COMMISSIONING

- 1 PLAN, ORGANIZE AND IMPLEMENT THE COMMISSIONING PROCESS FOR MECHANICAL SYSTEMS AND EQUIPMENT. SUPPLY COMPLETE INSTRUCTIONS AND INFORMATION RELATING TO THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND SYSTEMS. DELIVER A SYSTEM WHICH PERFORMS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND EQUIPMENT MANUFACTURER'S REQUIREMENTS.

3. MECHANICAL SYSTEM SUPPORT AND ANCHORAGE

- 1 PROVIDE SUPPORT, ANCHORAGE AND RESTRAINT OF MECHANICAL DISTRIBUTION SYSTEMS AND EQUIPMENT, DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE, ASHRAE APPLICATIONS, SMACNA DUCT CONSTRUCTION STANDARDS, AND ANS/NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS.
2 COORDINATE MECHANICAL SYSTEM SUPPORT, ANCHORAGE AND RESTRAINT SYSTEM WITH THE REQUIREMENTS AND CONSTRAINTS OF THE STRUCTURE, VIBRATION ISOLATION SYSTEMS AND THE SUPPORT, ANCHORAGE AND RESTRAINT SYSTEMS FOR ELECTRICAL AND ARCHITECTURAL COMPONENTS OF THE BUILDING.

4. PROJECT SCHEDULE

- 1 PHASE WORK IN ACCORDANCE WITH DIVISION 1. PROVIDE CONSULTANT WITH MATERIAL DELIVERY SCHEDULE WITHIN THREE WEEKS OF EXECUTING THE AGREEMENT.

5. DRAWINGS AND MEASUREMENTS

- 1 DRAWINGS DO NOT INDICATE EXACT ARCHITECTURAL, STRUCTURAL OR ELECTRICAL FEATURES. EXAMINE DRAWINGS PRIOR TO LAYING OUT, FABRICATING AND INSTALLING WORK TO ENSURE NO INTERFERENCE EXISTS. REPORT CONFLICT WITH WORK TO CONSULTANT BEFORE PROCEEDING.
2 DRAWINGS SHOW GENERAL DESIGN AND ARRANGEMENT OF MECHANICAL SYSTEM INSTALLATION AND ARE DIAGRAMMATIC IN SOME DETAILS. COORDINATE WITH ALL TRADES FOR COMPLETE OPERATIONAL SYSTEM.
3 DO NOT SCALE DRAWINGS TO ORDER MATERIAL. TAKE FIELD MEASUREMENTS BEFORE ORDERING MATERIALS AND MAKE MATERIAL CONFORM TO SITE CONDITIONS.

6. EXAMINATION

- 1 THIS PROJECT INVOLVES RENOVATIONS TO AN EXISTING BUILDING. EXAMINE THE SITE AND MAKE ALLOWANCE FOR ALL LOCAL CONDITIONS AFFECTING WORK UNDER THIS CONTRACT PRIOR TO SUBMITTING FINAL PRICE.

7. CODES AND BY-LAWS

- 1 COMPLY WITH ALL CODES AND BY-LAWS RELATING TO INSTALLATION AND EQUIPMENT. PROVIDE CERTIFICATES TO VERIFY THAT THE WORK INSTALLED CONFORMS TO THE LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION.

8. SHOP DRAWINGS

- 1 PRIOR TO MANUFACTURE, SUBMIT SHOP DRAWINGS OF SPECIFIED EQUIPMENT FOR REVIEW. DRAWINGS WILL BE REVIEWED FOR SPECIFICATION COMPLIANCE AND ARE TO BE REVISED AS OFTEN AS NECESSARY TO SATISFACTION OF CONSULTANT.

9. INTERRUPTION OF EXISTING SERVICES

- 1 ARRANGE SCHEDULE AND PERFORM WORK WITH MINIMUM DISTURBANCE TO EXISTING FACILITIES AND SERVICES. NOTIFY CONSULTANT IN WRITING AT LEAST 48 HOURS IN ADVANCE OF PLANNED INTERRUPTION TO EXISTING SERVICE.

10. REMOVAL AND REUSE OF EXISTING SERVICES

- 1 PRESENT EXISTING MATERIAL AND EQUIPMENT REMOVED FROM WORK BUT NOT IDENTIFIED FOR REUSE ON SITE TO OWNER/OTHERS. WHERE DEEMED UNSUITABLE, REMOVE FROM SITE.

11. PROTECTION OF WORK

- 1 PROTECT ALL FINISHED AND UNFINISHED WORK FROM DAMAGE. REPAIR DAMAGE CAUSED TO SURFACES OF BUILDING WITHOUT COST TO OWNER AND TO SATISFACTION OF CONSULTANT.
2 BE RESPONSIBLE FOR CONDITION OF ALL MATERIALS AND EQUIPMENT SUPPLIED AND/OR INSTALLED. PROVIDE PROTECTION PRIOR TO, DURING AND AFTER INSTALLATION UNTIL TAKEOVER BY OWNER.

12. CLEANING

- 1 DURING COURSE OF CONSTRUCTION AND UPON COMPLETION, REMOVE FROM PROJECT SITE ALL RUBBISH AND WASTE RESULTING FROM THIS WORK TO COMPLETE SATISFACTION OF CONSULTANT.

13. CUTTING AND PATCHING

- 1 ALL CUTTING AND PATCHING REQUIRED TO PERFORM WORK TO BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. MECHANICAL CONTRACTOR TO IDENTIFY LOCATIONS FOR ALL OPENINGS FOR PIPES, DUCTS, ETC., AND PROVIDE SLEEVES REQUIRED TO EXECUTE THE MECHANICAL INSTALLATION.

14. TESTS

- 1 GIVE WRITTEN NOTICE 48 HOURS IN ADVANCE OF SCHEDULED TEST DATES. BEAR ALL COSTS IN CONNECTION WITH EQUIPMENT AND SYSTEM TESTS. ALL TESTS TO BE PERFORMED TO SATISFACTION OF CONSULTANT BEFORE BACKFILLING OR FURRING.
2 PIPING PRESSURE TESTS: FILL SYSTEMS REQUIRING PRESSURE TEST WITH POTABLE WATER OR APPROPRIATE GAS AND TEST AT 1-1/2 TIMES SYSTEM OPERATING PRESSURE. MAINTAIN TEST PRESSURE WITHOUT LOSS FOR FOUR HOURS. REPAIR LEAKS AND DEFECTS. RETEST UNTIL ACCEPTED.
3 FLUSHING AND CLEANING: AFTER PRESSURE TESTS ARE COMPLETED AND ACCEPTED, PRIOR TO START-UP AND PLACING INTO OPERATION, FLUSH AND CLEAN OUT PIPING SYSTEMS.

15. OPERATIONAL TESTS

- 1 PERFORM SYSTEMATIC CHECK, TEST COMPONENTS IN ALL SYSTEMS, ENSURE THAT EACH SYSTEM FUNCTION CORRECTLY BEFORE COMMENCING BALANCING WORK. PROVIDE ALL PRIMARY ELEMENTS, TEST WELLS, BALANCING DAMPERS, BALANCING VALVES AND OTHER DEVICES WHICH ARE REQUIRED FOR TESTING AND BALANCING.
2 RECORD ALL CHECKS AND TESTS. MANUFACTURER OR SUPPLIER OF COMPONENT TESTED TO SIGN FORM INDICATING INSTALLATION IS IN ACCORDANCE WITH THEIR REQUIREMENTS. COUNTERSIGN AS CONTRACTOR.

16. TEMPORARY AND TRIAL USE

- 1 OBTAIN WRITTEN PERMISSION FROM CONSULTANT TO USE AND TEST PERMANENT EQUIPMENT AND SYSTEMS PRIOR TO SUBSTANTIAL PERFORMANCE.
2 PROVIDE LABOUR, MATERIAL AND INSTRUMENTS REQUIRED FOR TESTING. RECTIFY INCOMPLETE WORK IMMEDIATELY TO SATISFACTION OF CONSULTANT. CLEAN AND RENEW EQUIPMENT AND SYSTEM TESTED PRIOR TO ACCEPTANCE.

17. BALANCING

- 1 BALANCE AND ADJUST ALL AIR HANDLING SYSTEMS, EQUIPMENT, DUCTWORK, DIFFUSERS, REGISTERS, ETC., TO OBTAIN AIR QUANTITIES INDICATED. ADJUST FAN SPEEDS AS REQUIRED TO ACHIEVE BALANCE, INCLUDING PROVISION OF REPLACEMENT SHEAVES AND BELTS, AS REQUIRED. BALANCE AND ADJUST ALL WATER SYSTEMS TO WATER FLOWS INDICATED.

18. AS-CONSTRUCTED DRAWINGS

- 1 AFTER AWARD OF CONTRACT, CONSULTANT WILL PROVIDE CONTRACTOR WITH A SET OF DRAWINGS FOR PURPOSE OF MAINTAINING AS-CONSTRUCTED DRAWINGS, ACCURATELY AND NEATLY RECORD DEVIATIONS FROM CONTRACT DOCUMENTS WHICH ARE THE RESULT OF SITE CONDITIONS AND CHANGE ORDERS. RECORD CHANGES IN SAME SCALE AND QUALITY OF ORIGINAL DRAWINGS. IDENTIFY ALL REVISIONS MADE TO CONTRACT DRAWINGS AND REFERENCE FABRICATION DRAWINGS INCLUDED.

- 2 ON COMPLETION OF WORK AND PRIOR TO FINAL INSPECTION, SUBMIT DOCUMENTS TO CONSULTANT.

19. OPERATING AND MAINTENANCE MANUALS

- 1 FURNISH CONSULTANT WITH THREE (3) COPIES OF SERVICE, MAINTENANCE, SPARE PARTS AND OPERATING INSTRUCTIONS, SHOP DRAWINGS AND BULLETINS FOR ALL ITEMS INSTALLED. SUBMIT BALANCING REPORT. SUBMIT IN LOOSE-LEAF BINDERS. PROVIDE BINDERS WITH PROPER INDEX AND LIST OF MANUFACTURER'S SERVICE REPRESENTATIVES, INCLUDING ADDRESSES AND TELEPHONE NUMBERS. PROVIDE STEP-BY-STEP SEQUENCE OF OPERATION DESCRIPTION FOR AUTOMATIC CONTROL SYSTEM.

20. INSTRUCTION OF OPERATING STAFF

- 1 PROVIDE TRAINED PERSONNEL TO INSTRUCT OPERATING STAFF IN MAINTENANCE, ADJUSTMENT AND OPERATION OF MECHANICAL EQUIPMENT. PROVIDE INSTRUCTION DURING REGULAR WORK HOURS PRIOR TO ACCEPTANCE AND TURNOVER TO OPERATING STAFF. USE OPERATING AND MAINTENANCE MANUAL AND UPDATED AS-CONSTRUCTED DRAWINGS FOR INSTRUCTION PURPOSES.

21. WARRANTY

- 1 FURNISH OWNER WITH WRITTEN WARRANTY FOR SATISFACTORY OPERATION OF ALL WORK INSTALLED UNDER THIS CONTRACT. REPLACE ANY PART WHICH MAY FAIL OR PROVE DEFECTIVE AFTER SUBSTANTIAL PERFORMANCE, PROVIDED SUCH FAILURE IS NOT DUE TO IMPROPER USAGE OR ORDINARY WEAR AND TEAR. WARRANTY WORK TO BE PROVIDED BY AUTHORIZED REPRESENTATIVE OF MANUFACTURER.
2 PROVIDE TWELVE (12) MONTH MANUFACTURER EQUIPMENT WARRANTY, INCLUDING COMPONENT AND EQUIPMENT REPLACEMENT AND LABOUR TO EXECUTE WARRANTY WORK. WARRANTY WORK TO BE PERFORMED BY MANUFACTURER'S FORCES.

22. INSULATION

- 1 HOT PIPING (>90°F): RIGID GLASS FIBRE, PREFORMED SECTIONAL, 5 Lb/FT<sup>3</sup>, 600°F, 0.250 BTU.in/hr.FT<sup>2</sup>.F @ 75°F. PROVIDE ALUMINUM JACKET IN ALL EXPOSED AREAS. THICKNESS: 1 in.
2 COLD PIPING (<90°F): RIGID GLASS FIBRE, PREFORMED SECTIONAL, 5 Lb/FT<sup>3</sup>, 600°F, 0.250 BTU.in/hr.FT<sup>2</sup>.F @ 75°F. WITH FACTORY APPLIED RFFRK VAPOUR BARRIER JACKET, PROVIDE ALUMINUM JACKET IN ALL EXPOSED AREAS. THICKNESS: 1 in.
3 REFRIGERANT PIPING: FLEXIBLE, CLOSED CELL POLYETHYLENE PREFORMED TUBULAR 2 Lb/FT<sup>3</sup>, 0.250 BTU.in/hr.FT<sup>2</sup>.F @ 75°F. THICKNESS: 1 in. PROVIDE ALUMINUM JACKET IN ALL EXPOSED AREAS.
4 DUCTWORK, THERMAL, RECTANGULAR: RIGID GLASS FIBREBOARD, 4.5 Lb/FT<sup>3</sup>, 250°F, 0.220 BTU.in/hr.FT<sup>2</sup>.F @ 75°F. WITH ALUMINUM JACKET. THICKNESS: 1 in EXCEPT FOR OUTSIDE AIR AND EXHAUST DUCTWORK PROVIDE 2 in. PROVIDE AS INDICATED. FOR EXHAUST PROVIDE FOR 6.5 FT FROM EXTERIOR PENETRATION.
5 JACKETING: PROVIDE ALUMINUM JACKETING ON ALL EXPOSED INSULATION, EMBOSSED ALLOY, 0.4mm THICK, PROTECTIVE LINER FACTORY ATTACHED TO INTERIOR SURFACE.

23. INSTALLATION OF PIPE

- 1 PROVIDE PIPE SLEEVES WHERE PIPES PASS THROUGH MASONRY, CONCRETE STRUCTURES, FIRE RATED ASSEMBLIES, AND ELSEWHERE AS INDICATED. SLEEVES TO BE SCHEDULE 40 BLACK STEEL PIPE. PROVIDE 12 mm MINIMUM CLEARANCE BETWEEN SLEEVE AND UNINSULATED PIPE OR BETWEEN SLEEVE AND INSULATION.
1 INSTALLATION: CONCRETE, MASONRY WALLS, CONCRETE FLOORS ON GRADE: TERMINATE FLUSH WITH FINISHED SURFACE. OTHER FLOORS: 25 mm ABOVE FINISHED FLOOR. BEFORE INSTALLATION, PAINT EXPOSED EXTERIOR SURFACES WITH HEAVY APPLICATION OF ZINC-RICH PAINT TO CANCGSB-1.181. ENSURE NO CONTACT BETWEEN COPPER PIPE OR TUBE AND SLEEVE.
2 SEALING: FOUNDATION WALLS AND BELOW GRADE FLOORS: FIRE RETARDANT, WATERPROOF NON-HARDENING MASTIC. ELSEWHERE: PROVIDE SPACE FOR FIRESTOPPING, MAINTAIN FIRE RATING INTEGRITY.
2 FIRESTOPPING: WHERE PIPES OR DUCTS PASS THROUGH FLOORS AND FIRE RATED WALLS, PACK SPACE BETWEEN PIPES OR DUCTS AND SLEEVE OR OPENING WITH FLAME-SAFE FIRESTOP MATERIAL OR 3M CP25 OR 303.

24. NATURAL GAS SYSTEM

- 1 PROVIDE COMPLETE NATURAL GAS SYSTEM TO CSA REQUIREMENTS INCLUDING SEAMLESS BLACK STEEL PIPING, SCHEDULE 40, TO ASTM A53, MALLEABLE IRON FITTINGS TO ANSI B16.3, SHUT-OFF VALVES, PRESSURE REDUCING VALVES, PRESSURE RELIEF VALVES, ISOLATION COCKS, DRIP AND DIRT POCKETS, AND HARDWARE AND SUPPORTS.
2 FITTINGS: 2" AND SMALLER: MALLEABLE IRON, THREADED TO ANSI STANDARD B16.3.
3 GAS VALVES: CHROME PLATED BRASS, TWO PIECE FULL BORE PAD LOCKABLE TO CSA 3.16. SPECIFIED PRODUCT: HATTERSLEY - MILLIKEN PLUG VALVE, OR APPROVED ALTERNATE.
4 GAS SHUT OFF VALVE: ALUMINUM 2-WAY SOLENOID, NORMALLY CLOSED, INSTALLED TO PROVIDE AUTOMATIC SHUT OFF OF FUEL GAS IN THE EVENT OF A FIRE. SPECIFIED PRODUCT: ASCO SERIES 214, OR APPROVED ALTERNATE.
5 PRESSURE REDUCING VALVE (PRV): PRESSURE LOADED PRESSURE REDUCING REGULATOR, SCREWED END, CAST IRON PILOT BODY AND SPRING CASE, NITRILE DIAPHRAGM, STAINLESS STEEL METAL TRIM PARTS, ELASTOMER SEALS. VALVES SHALL BE PROVIDED WITH DOWNSTREAM OVERPRESSURE PROTECTION VALVE OR PRESSURE RELIEF VALVE. OVERPRESSURE RELIEF SHALL BE PIPED EXTERIOR TO THE BUILDING AND PROVIDED WITH DOWN TURNS TO PREVENT WATER FROM FORMING IN THE VENT PIPE AND AN INCREASED PIPE DIAMETER AND SCREEN TO PREVENT BIRDS AND BUGS FROM ENTERING THE VENT PIPE.
6 PROVIDE NATURAL GAS PIPING AS INDICATED TO ALL GAS FIRED EQUIPMENT. CONFORM TO CSA B149.1 AND ALL SUPPLEMENTARY REGULATIONS.
7 PERFORM ALL TESTS IN CONFORMANCE WITH ONTARIO GAS UTILIZATION REGULATIONS.
8 PIPING TO BE PROTECTED AGAINST CORROSION. COAT WITH TWO APPLICATIONS OF PAINT TO CGSB 1-GP-60M IN PRIMARY YELLOW COLOUR.
9 PROVIDE ALL REQUIRED GAS TRAINS FOR EQUIPMENT. PIPE VENTS TO ATMOSPHERE.
10 PROVIDE APPROPRIATE SQUARE HEAD OR FLAT HEAD WRENCH FOR EACH STOP COCK.

25. REFRIGERANT PIPING

- 1 SEAMLESS ACR COPPER, FACTORY CLEANED AND SEALED TO ASTM B-88 AND CSA HC 7.8.
2 FITTINGS TO BE WROUGHT COPPER OR FORGED BRASS SOLDER TYPE.
3 SIZING BY REFRIGERATION CONTRACTOR.

26. PLUMBING

- 1 MATERIALS AND INSTALLATION TO COMPLY WITH ONTARIO BUILDING CODE PART 7.
2 CONNECTIONS BETWEEN DISSIMILAR METALS TO BE BY MEANS OF DIELECTRIC COUPLINGS.
3 DOMESTIC HOT AND COLD WATER PIPING TO BE TYPE 'L' STANDARD STREAMLINED COPPER PIPE WITH CAST BRASS SOLDER FITTINGS. SOLDER TO BE 95/5.
4 SANITARY DRAINAGE PIPING TO BE DWV COPPER PIPE WITH WROUGHT COPPER OR CAST BRASS JOINTS. SOLDER TO BE 50/50.
5 PROVIDE ALL VENT PIPING AS REQUIRED IN ACCORDANCE WITH THE BUILDING CODE AND PROPER SYSTEM OPERATION.
6 SUPPLIES TO FIXTURES SHALL BE EQUIPPED WITH ISOLATION VALVES. ALL EXPOSED PIPING SHALL BE CHROME PLATED AND CHROME PLATED ESCUTCHEON PLATES SHALL BE PROVIDED AT FLOOR, WALL AND CEILING PIPE PENETRATIONS.
7 SINK TRIM WITH FLEXIBLE TUBING BETWEEN FIXTURE AND ISOLATION VALVES. TUBING SHALL BE EPDM HOSE WITH EXTERNAL BRAIDED METAL AND BRASS CONNECTORS.

8. VALVES:

- 1 ALL VALVES TO BE FROM ONE MANUFACTURER AND BE CLASS 125/200 PSI.
2 GATE VALVES TO BE BRONZE, SOLDER END, NON-RISING STEM CLASS 1701S; KITZ 41; TOYO 281.
3 BALL VALVES TO BE BRONZE/BRASS, TWO PIECE BODY, CHROME PLATED BALL, PTFE SEAT AND LEVER ACTUATOR WITH MEMORY STOP; CRANE F9202; KITZ 23, TOYO 237.

9. FIXTURES:

- 1 FLOOR DRAIN: EPOXY COATED CAST IRON, ADJUSTABLE HEAD, SEEPAGE PAN, NICKEL BRONZE STRAINER, TRAP PRIMER TAPPING, 3 in OUTLET. SPECIFIED PRODUCT: WATTS FD-100, ACCEPTABLE MANUFACTURERS: WATTS, ZURN.
2 FUNNEL FLOOR DRAIN: EPOXY COATED CAST IRON, OVAL NICKEL BRONZE FUNNEL, NICKEL BRONZE STRAINER, TRAP PRIMER TAPPING, 3 in OUTLET. SPECIFIED PRODUCTS: WATTS FD-100-C-EG, ZURN ZM415BF.
3 PROVIDE ADJUSTABLE HEIGHT STRAINER AND CLAMPING RING FOR NEW AND EXISTING VALVES AS INDICATED ON DRAWINGS TO ACCOMMODATE A FLUSH FLOOR INSTALLATION FOR VINYL SHEET FLOORING.

27. SPRINKLERS

- 1 PROVIDE REVISIONS TO SPRINKLER SYSTEM IN ACCORDANCE WITH ONTARIO BUILDING CODE, NATIONAL BUILDING CODE, NFPA 13 AND AUTHORITIES HAVING JURISDICTION.
2 WORK TO CONSIST OF RELOCATING EXISTING AND PROVIDING NEW SPRINKLERS, INCLUDING ALL LABOUR, VALVES, PIPING, HEADS, HANGERS, FITTINGS AND MATERIALS FOR A COMPLETE SYSTEM.
3 EXISTING SPRINKLERS ARE SHOWN ON MECHANICAL PLANS. REVISED PIPING LAYOUT TO BE THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR TO CONFORM TO NFPA 13. COORDINATE LOCATIONS WITH ALL MECHANICAL, ELECTRICAL, ARCHITECTURAL AND STRUCTURAL COMPONENTS.
4 QUALITY ASSURANCE: SPRINKLER CONTRACTOR TO BE A MEMBER IN GOOD STANDING OF THE CANADIAN AUTOMATIC SPRINKLER ASSOCIATION.
5 OBTAIN APPROVALS OF AUTHORITIES HAVING JURISDICTION FOR SYSTEM DESIGN, EQUIPMENT, MATERIALS AND INSTALLATION. AUTHORITIES HAVING JURISDICTION TO PERFORM INSPECTIONS AND SUPERVISE TESTS.
6 ALL COMPONENTS TO BE ULC LISTED, WORKING PRESSURE NOT LESS THAN 175 PSI. PIPING TO BE SCHEDULE 10, BLACK STEEL TO CSA Z245.10. PIPE HANGERS TO CONFORM TO NFPA 13. SPRINKLERS TO BE CHROME PLATED, UPRIGHT, AND MATCH EXISTING. SPRINKLERS TO BE LISTED, BEAR CERTIFICATION MARKING OF ULC AND BE RATED FOR 165°F.
7 INSTALL SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND CODE REQUIREMENTS. PROVIDE HYDRAULIC PUMP, TEMPORARY CONNECTIONS AND LABOUR TO TEST SYSTEM IN ACCORDANCE WITH NFPA 13, IN THE PRESENCE OF THE CONSULTANT AND AUTHORITIES HAVING JURISDICTION. SUBMIT CERTIFICATES INDICATING RESULTS OF TESTS.

28. CHEMICAL FIRE SUPPRESSION SYSTEM

- 1 PROVIDE ULC APPROVED FIRE SUPPRESSION SYSTEM COMPLETE WITH FLOW POINTS, TANK, MECHANICAL GAS SHUT OFF VALVE, CHROME APPLIANCE DROPS, MICROSWITCH FOR ELECTRIC APPLIANCES. ALL REQUIRED LINKS AND FIRE SUPPRESSANT AGENT. FIRE SYSTEM TO CONFORM TO NFPA 98 AND NFPA 17A AND MEET OR EXCEED THE REQUIREMENTS OF ANS/UL 300. SUBMITTAL TO BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER PRACTICING IN ONTARIO.
2 INSTALL FIRE SUPPRESSION SYSTEMS IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND APPLIANCES FINAL LAYOUT. INSTALLATION SHALL BE PERFORMED ONLY BY PERSONS PROPERLY TRAINED AND QUALIFIED TO INSTALL THE SPECIFIC SYSTEM BEING PROVIDED. THE INSTALLER SHALL PROVIDE CERTIFICATION TO THE AHJ THAT THE INSTALLATION IS IN AGREEMENT WITH THE TERMS OF THE LISTING AND THE MANUFACTURER'S INSTRUCTIONS AND/OR APPROVED DESIGN.
3 FIRE SYSTEM TO SERVE PRE-PURCHASED CAPTIVE/ARE HOOD AND STARMAK GAS GRIDDLE. REFER TO APPENDIX A FOR EQUIPMENT CUTSHEETS AND RECOMMENDED FIRE SYSTEM SPECIFICATIONS FROM THE VENDOR (PITA PIT). NOTE THE FINAL FIRE SYSTEM DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR.

29. FIRE EXTINGUISHER

- 1 PROVIDE NEW HAND PORTABLE FIRE EXTINGUISHER AND WALL MOUNTING BRACKET AS INDICATED TO MEET NFPA 10, CLASSIFICATION K, CAPACITY 10 LBS.

30. DUCTWORK

- 1 RECTANGULAR DUCTWORK: CONSTRUCT DUCTWORK AND FITTINGS TO SMACNA AND ASHRAE STANDARDS FOR LESS THAN 2 in W.G. DUCT STATIC PRESSURE RANGE, 2000 FPM MAXIMUM VELOCITY. USE LOCK FORMING QUALITY GALVANIZED STEEL WITH G90 DESIGNATION ZINC COATING TO ASTM A653 / A653M - 08.

31. GREASE DUCT

- 1 PROVIDE ROUND DOUBLE WALL, FACTORY BUILT GREASE DUCTWORK, LISTED TO UL-1978 AND UL-2221 AND MEETING REQUIREMENTS OF NFPA 96.
2 INNER WALL TO BE 20 GA MINIMUM STAINLESS STEEL, OUTER JACKET TO BE 24 GA MINIMUM ALUMINIZED STEEL. PROVIDE INSULATION BETWEEN THE INNER LINER AND OUTER JACKET. ALUMINIZED STEEL SURFACES EXPOSED TO THE ELEMENTS SHALL BE PROTECTED BY A MINIMUM OF ONE BASE COAT OF PRIMER AND ONE FINISH COAT OF CORROSION RESISTANT PAINT SUITABLE FOR OUTER JACKET SKIN TEMPERATURES. ALTERNATIVELY, AN OUTER JACKET OF 304 OR 316 STAINLESS STEEL CAN BE USED.
3 THE EXHAUST SYSTEM SHALL BE DESIGNED AND INSTALLED TO BE LIQUID TIGHT, INNER PIPE JOINTS SHALL BE SECURELY CONNECTED AND SEALED WITH FACTORY SUPPLIED OVER-LAPPING V-BANDS AND APPROPRIATE SEALANTS AS SPECIFIED IN THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4 PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. SLOPE HORIZONTAL DUCT AS PER MANUFACTURER'S LISTING. A MINIMUM OF ONE ACCESS DOOR IS REQUIRED FOR THE GREASE DUCT.
5 GREASE DUCT TO BE INSTALLED WITH ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, ETL LISTING AND LOCAL CODES. FANS SHALL BE SUPPORTED INDEPENDENTLY FROM THE GREASE DUCT SECTIONS. PROTECT GREASE DUCT FROM TWISTING OR MOVEMENT CAUSED BY FAN TORQUE OR VIBRATION.
6 PROVIDE ALL SUPPORTS, GUIDES, EXPANSION JOINTS, GUY SECTIONS, GUY TENSIONERS, ROOF THIMBLES, ROOF FLASHINGS, STORM COLLARS AND FLIP TOP TERMINATIONS AS REQUIRED TO PROVIDE A COMPLETE SYSTEM PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
7 APPROVED PRODUCTS: SELKIRK COMMERCIAL/ INDUSTRIAL MODEL IPS ZEROCLEAR EXHAUST FLUE, CAPTIVE/ARE SYSTEMS MODEL DW.

32. GRILLES AND DIFFUSERS

- 1 PROVIDE GRILLES AND DIFFUSERS COMPLETE WITH ACCESSORIES, AS INDICATED ON DRAWINGS. POSITIONS INDICATED ARE APPROXIMATE ONLY. MECHANICAL CONTRACTOR TO VERIFY LOCATION OF ALL OUTLETS AND MAKE SUCH ADJUSTMENTS AS NECESSARY TO CONFORM WITH ARCHITECTURAL FEATURES.
2 TYPE 'A': LOUVERED FACE GRILLE, ALUMINUM, 3/4" BLADE SPACING, 45° FIXED DEFLECTION, SIZES AS INDICATED. COMPLETE WITH EXTRUDED ALUMINUM BLADES AND BORDER, AND EXPOSED DUCT CONNECTION FLANGE. FINISH SHALL BE BAKED-ON POWDER COAT, PROVIDE STANDARD COLOUR OPTIONS IN SUBMITTAL FOR SELECTION BY CONSULTANT. ACCEPTABLE MANUFACTURERS: E.H. PRICE, NALOR, TITUS.

33. FANS

- 1 ROOF EXHAUSTER: DIRECT DRIVE, CURB MOUNTED, BACKWARD INCLINED CENTRIFUGAL FAN MEETING SCHEDULED PERFORMANCE CRITERIA. CONSTRUCTION: HEAVY GAUGE ALUMINUM HOUSING WITH RIGID INTERNAL SUPPORT STRUCTURE, ALUMINUM IMPELLER, HEAVY DUTY PILLLOW BLOCK BEARINGS WITH MINIMUM 200,000 HOUR LIFE, PRECISION GROUND AND POLISHED SHAFT, FIELD CONSTRUCTED ROOF CURB AND WEATHERPROOF, FACTORY INSTALLED DISCONNECT.
2 ACCESSORIES: 1/2 in GALVANIZED STEEL MESH BIRD SCREEN, WEIGHTED BACKDRIFT DAMPER, ADJUST DAMPER TO CLOSE WHEN FAN IS NOT RUNNING, SPEED CONTROLLER FOR INITIAL FAN BALANCING.
3 SPECIFIED PRODUCT: TWIN CITY DCRU. APPROVED ALTERNATE: GREENHECK.

34. AUTOMATIC CONTROLS

- 1 EXHAUST FANS TO OPERATE BY MANUAL WALL SWITCH, AS INDICATED ON DRAWINGS.

35. INCREMENTAL UNITS

- 1 PROVIDE A SPLIT SYSTEM A/C SYSTEM CONSISTING OF INDOOR EVAPORATOR SECTION WITH WIRED CONTROL AND OUTDOOR CONDENSING UNIT. UNITS TO BEAR THE ETL AND ARI LABEL.
2 PROVIDE A FULL CHARGE OF R-410A FOR 30M OF REFRIGERANT TUBING IN THE CONDENSING UNIT. PROVIDE A DRY AIR HOLDING CHARGE IN THE EVAPORATOR.

3. SYSTEM TO MEET THE SCHEDULED PERFORMANCE.

4. INDOOR UNIT:

- 1 UNIT SHALL BE FACTORY ASSEMBLED, WIRED AND RUN TESTED INCLUDING WIRING, PIPING, CONTROL CIRCUIT BOARD AND FAN MOTOR. THE UNIT IN CONJUNCTION WITH THE REMOTE CONTROLLER SHALL HAVE A SELF-DIAGNOSTIC FUNCTION, AN AUTO RESTART FUNCTION, AND A TEST RUN SWITCH.
2 PROVIDE WITH DRAIN PAN AND INTEGRAL P-TRAP FOR CONDENSATE COLLECTION.
3 FAN SHALL BE THREE SPEED, FORWARD CURVE FANS DRIVEN BY A SINGLE MOTOR. A MOTORIZED AIR SWEEP FLOW LOUVER SHALL PROVIDE AN AUTOMATIC CHANGE IN AIRFLOW BY DIRECTING THE AIR FROM SIDE TO SIDE FOR UNIFORM AIR DISTRIBUTION.
4 RETURN AIR SHALL BE FILTERED BY MEANS OF AN EASILY REMOVABLE WASHABLE FILTER.
5 CONTROL:
1 THE CONTROLLER SHALL CONSIST OF AN ON/OFF SWITCH, COOL/ DRY -FAN SELECTOR, THERMOSTAT SETTING, TIMER MODE, HIGH-MEDIUM-LOW FAN SPEED, AUTO VANE SELECTOR, TEST RUN SWITCHING AND CHECK MODE SWITCHING. THE SYSTEM SHALL INCLUDE SELF-DIAGNOSTICS INCLUDING TOTAL HOURS OF COMPRESSOR RUN TIME.
2 MANUFACTURER TO PROVIDE TWO CONDUCTOR 18 GA. STRANDED WIRE FOR CONNECTION TO REMOTE CONTROLLER.
3 THE MICROPROCESSOR WITHIN THE WALL MOUNTED REMOTE CONTROLLER SHALL PROVIDE AUTOMATIC COOLING, DISPLAY SET POINT AND ROOM TEMPERATURE, 24 HOUR ON/OFF TIMER, AUTOMATIC OPERATION FUNCTION DISPLAY, CHECKMODE FOR MEMORY OF MOST RECENT PROBLEM.

5. OUTDOOR UNIT

- 1 EQUIPPED WITH A CIRCUIT BOARD THAT INTERFACES TO THE PC INDOOR UNIT AND PERFORMS ALL FUNCTIONS NECESSARY FOR OPERATION. THE UNIT MUST BE FACTORY ASSEMBLED, PIPED AND WIRED. THE CASING SHALL BE FABRICATED OF GALVANIZED STEEL, FINISHED WITH A POWDER COATED BAKED ENAMEL.
2 FURNISHED WITH DIRECT DRIVE PROPELLER TYPE FANS, PERMANENTLY LUBRICATED BEARINGS, HORIZONTAL OR VERTICAL DISCHARGE AIRFLOW.
3 REFRIGERANT FLOW FROM THE CONDENSER SHALL BE CONTROLLED BY MEANS OF A METERING ORIFICE.
4 ROTARY COMPRESSOR, INTERNAL THERMAL OVERLOAD, HIGH PRESSURE SAFETY SWITCH, MOUNTED TO AVOID THE TRANSMISSION OF VIBRATION, CAPABLE OF OPERATING AT -30°C AMBIENT LOW TEMPERATURE.
5 POWER SHALL BE 208V, 1 PHASE, 60 HERTZ. OUTDOOR UNIT SHALL POWER THE INDOOR UNIT.
6 THE OUTDOOR UNIT SHALL BE CONTROLLED BY THE MICROPROCESSOR LOCATED IN THE INDOOR UNIT.
7 COMPLETE REFRIGERANT PIPING, INSTALL AND SUPPORT TO AVOID INTERFERENCE WITH OTHER SERVICE AND TO PROTECT FROM DAMAGE. CONFIRM PROPOSED ROUTING WITH CONSULTANT.
7 SUPPLIER TO PROVIDE GALVANIZED STEEL SUPPORT STRUCTURE TO MOUNT OUTDOOR UNIT ON ROOF.
8 APPROVED MANUFACTURERS: MITSUBISHI, DAIKIN, LG, OR APPROVED ALTERNATE.

36. INSTALLATION OF PRE-PURCHASED EQUIPMENT

- 1 THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL PRE-PURCHASED EQUIPMENT INCLUDED IN THE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND MECHANICAL SCHEDULES FOR THE LIST OF EXISTING, NEW, AND PRE-PURCHASED EQUIPMENT FOR EACH VENDOR LOCATION.
2 CUTSHEETS FOR ALL PRE-PURCHASED EQUIPMENT CAN BE FOUND IN APPENDIX A.

Table with 3 columns: No., ISSUE / REVISION, DD/MM/YY. Row 1: 3, ISSUED FOR TENDER, 17/04/2019. Row 2: 2, ISSUED FOR CLIENT REVIEW, 16/04/2019. Row 3: 1, ISSUED FOR CLIENT REVIEW, 12/04/2019.

No. ISSUE / REVISION DD/MM/YY

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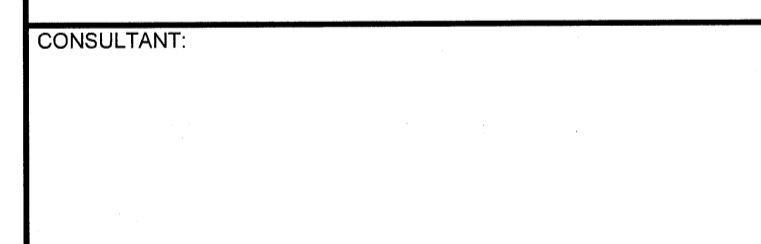


Table with 2 columns: PROFESSIONAL STAMP, PROJECT NORTH. Contains project name and address.

PROJECT: ST. LAWRENCE COLLEGE CAFETERIA RENOVATION 100 PORTSMOUTH AVENUE, KINGSTON, ONTARIO

DRAWING: MECHANICAL SPECIFICATIONS

Table with 2 columns: DESIGN, DRAWING #. DESIGN: KB, DRAWING #: MO. CHECKED: PE, JLR # 28389.

File Location: K:\280000\28389-0001\_0\_sdc\_cafeteria\_renovations\3\_r.dwg; Mech\28389\_MECH SPEC.dwg

PLOT DATE: April 17, 2019 2:14:03 PM

MECHANICAL LEGEND

PIPING & VALVES	
— —	PIPE BREAK
→	FLOW ARROW
— — —	PIPE TEE DOWN
— — —	PIPE TEE UP
— — —	PIPE TEE
— — —	PIPE ELBOW
— — —	PIPE ANCHOR
— — —	PIPE CAP
— — —	PIPE RISE
— — —	PIPE DROP
— — —	PIPE REDUCER
— — —	PIPE UNION
— — —	PLUG VALVE
— — —	BALL VALVE
— — —	PRESSURE REDUCING VALVE
— — —	PRESSURE RELIEF VALVE
— — —	TIE POINT

PLUMBING	
— —	DCW
— —	DHW
— —	DHWR
— —	SANITARY ABOVE GRADE/FLOOR
— —	SANITARY BELOW GRADE/FLOOR
— —	SANITARY INDIRECT DRAIN
— —	SANITARY VENT
— —	CLEAN OUT
— —	FLOOR DRAIN
— —	FUNNEL FLOOR DRAIN

SPECIALTY PIPING	
— —	NATURAL GAS

VENTILATION	
— —	SUPPLY/OUTSIDE AIR DUCT
— —	RETURN/EXHAUST AIR DUCT
— —	THERMALLY INSULATED DUCT
— —	SQUARE - ROUND TRANSITION
— —	FLEXIBLE DUCT CONNECTION
— —	BALANCING DAMPER
— —	BACKDRAFT DAMPER
— —	ACCESS DOOR
— —	IDENTIFIER
— —	CAPACITY
— —	SIZE
— —	NECK SIZE
— —	GRILLE, REGISTER & DIFFUSER IDENTIFIER

1 M1 SCALE: NTS

CONTROLS	
⊕	THERMOSTAT
⊖	TOGGLE SWITCH
⊞	SOLENOID ACTUATOR
⊞	DEFINITIONS
⊞	NORMALLY OPEN
⊞	NORMALLY CLOSED

FIRE PROTECTION	
— —	SPRINKLER PIPING
— —	UPRIGHT SPRINKLER HEAD
— —	SIDEWALL SPRINKLER HEAD
— —	SUPERVISED OS & Y GATE VALVE
— —	SUPERVISED BUTTERFLY VALVE
— —	ALARM CHECK VALVE
— —	BALL DRIP CHECK VALVE
— —	FIRE DEPARTMENT CONNECTIONS
— —	FIRE HOSE CABINET c/w FIRE EXT.
— —	FIRE EXTINGUISHER CABINET
— —	FIRE EXTINGUISHER

PIPE AND DUCT TAG LEGEND

S-XX-YY	LINE NO.
S-XX-YY	EXISTING LINE NO.
S	WHERE:
S	NOMINAL SIZE
XX	MATERIAL
YY	SYSTEM IDENTIFIER

SYSTEM IDENTIFIERS:

DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
EA	EXHAUST AIR
NG	NATURAL GAS
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SAN	SANITARY

MATERIAL ABBREVIATIONS:

AL	ALUMINUM
CI	CAST IRON
CONC	CONCRETE (CHANNEL)
CP	CONCRETE PIPE
CPP	CONCRETE PRESSURE PIPE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CARBON STEEL
CU	COPPER
DJ	DUCTILE IRON
DIG	GLASS LINED DUCTILE IRON
GF	GLASS FIBRE
GS	GALVANIZED STEEL
HDPE	HIGH DENSITY POLYETHYLENE
HYP	HYPRESCON
PE	POLYETHYLENE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
SS	STAINLESS STEEL
TYG	TYGON TUBE
UIP	URECON INSULATED PIPE

FAN SCHEDULE

I.D.	DESCRIPTION	LOCATION	MANUF./MODEL	TYPE	OPERATING POINT 'A'			SOUND POWER @ UNIT INLET LwA	DRIVE	MOTOR				COMMENTS
					AIR FLOW L/s	S.P. Pa	FAN RPM			KW	VOLT	PH	RPM	
EF-9	PTA PIT COOKING EXHAUST FAN (PRE-PURCHASED)	ROOF MOUNTED	CAPTIVEAIRE DU50HFA	RESTAURANT MODEL CENTRIFUGAL ROOF EXHAUSTER, UPBLAST	378 (800 CFM)	261 (1.05" wc)	1434		DIRECT DRIVE WITH VARIABLE SPEED CONTROLLER	0.37 (1/2 HP)	120	1		PRE-PURCHASED BY OWNER FOR INSTALLATION BY CONTRACTOR. REFER TO APPENDIX A FOR CUTSHEET.
EF-10	PAPA JOHNS GENERAL EXHAUST FAN	ROOF MOUNTED	TWIN CITY	CENTRIFUGAL ROOF EXHAUSTER, UPBLAST	198 (420 CFM)	117 (0.47" wc)	994	53	DIRECT DRIVE WITH SPEED CONTROLLER	0.37 (1/2 HP)	120	1	1750	COMPLETE WITH BACKDRAFT DAMPER. PROVIDE TRANSITION FROM EXISTING CURB TO SUIT NEW FAN

SPLIT SYSTEM A/C UNITS

I.D.	DESCRIPTION	TOTAL COOLING (MAX/MIN) kW	SEER	INDOOR UNIT				OUTDOOR UNIT				COMMENTS			
				AIR FLOW (LO-MH) L/s	SOUND DATA (LO-MH) dBA	WEIGHT KG	VOLTAGE V	MCA A	MAX FUSE A	SOUND DATA dBA	WEIGHT KG		VOLTAGE V	MCA A	BREAKER SIZE A
AC-1/ CND-1	PITA PIT SPLIT SYSTEM AC	7.0/ 3.5	17.0	635-705-775	39-42-45	21	208	1	15	48	74	208	18	25	PROVIDE GALVANIZED STEEL SUPPORT TO MOUNT CONDENSER ON ROOF
AC-2/ CND-2	PAPA JOHNS SPLIT SYSTEM AC	7.0/ 3.5	17.0	635-705-775	39-42-45	21	208	1	15	48	74	208	18	25	PROVIDE GALVANIZED STEEL SUPPORT TO MOUNT CONDENSER ON ROOF

GRILLE AND DIFFUSER SCHEDULE

I.D.	SERVICE			DESCRIPTION	FINISH AND ACCESSORIES
	S.A.	R.A.	E.A.		
A				LOUVERED FACE GRILLE, DUCTED EXHAUST/RETURN	POWDER COAT - SUBMIT STANDARD COLOURS FOR SELECTION BY CONSULTANT

2 M1 SCHEDULES SCALE: NTS

PITA PIT EQUIPMENT SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMENTS
1	PITA STATION	TRUE FOOD SERVICE EQUIPMENT INC.	TSSU-72-30M-B-ST	EXISTING	G		TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
2	EXHAUST SYSTEM	CAPTIVEAIRE		OWNER	M	E	
3	CHEF BASE	TRUE FOOD SERVICE EQUIPMENT INC.	TCRB-62	OWNER	G		
4	GAS GRIDDLE	STAR-MAX	636-TF	OWNER	G		NATURAL GAS CONNECTION BY MECHANICAL
5	SMOOTHIE COOLER	TRUE FOOD SERVICE EQUIPMENT INC.	TUC-27	OWNER	G		
6	COUNTER CABINETS			OWNER	G		
8	MICROWAVE	PANASONIC	NE-1064	OWNER	G	E	
9	BEVERAGE COOLER	TRUE FOOD SERVICE EQUIPMENT INC.	GDM-23-LD	OWNER	G		
11	POS	VIVONET	PT-5700	OWNER	G	E	
22	BLENDER	VTAMIX	36021	OWNER	G	E	
34	SNEEZE GUARD	ADM	EP-21-PASSOVER	OWNER	G		
35	DIGITAL MENU BOARDS	LG	42LX330C	OWNER	G	E	REFER TO 1/A701
39	STEAMER/ WARMER	ROUNDUP	DFW-150	EXISTING	G	E	TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
40	PITA TOASTER	STAR	PST14DPP	EXISTING	G	E	TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
45	YOGEN FREEZER	NORLAKE	HF100-WWG0	OWNER	G	E	
46	YOGURT MACHINE	YOGURT MATIC	YM-920	OWNER	G	E	SERVICES BY MECHANICAL
47	TRACK LIGHTING			OWNER	E	E	REFER TO 1/A701

VENDOR EQUIPMENT LEGEND:

E	ELECTRICAL CONTRACTOR
G	GENERAL CONTRACTOR
KEC	KITCHEN EQUIPMENT CONTRACTOR
M	MECHANICAL CONTRACTOR

GENERAL NOTE: REFER TO ARCHITECTURAL FOR NEW VENDOR PLANS INDICATING LOCATION OF VENDOR EQUIPMENT. REFER TO APPENDIX A FOR EQUIPMENT CUTSHEETS.

3 M1 PITA PIT EQUIPMENT SCHEDULE SCALE: NTS

PAPA JOHNS EQUIPMENT SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	SUPPLIED BY	INSTALLED BY	WIRED BY	COMMENTS
1	PIZZA OVEN	MIDDLEBY MARSHALL	PS536E-2	EXISTING	G	E	TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
2	EXHAUST SYSTEM	GILES VENTLESS	PO-VH	EXISTING	M	E	TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
3	PIZZA PREP TABLE	VICTORY	VTP-67	EXISTING	G		TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
7	S.S. SAUCE TABLE (30"x24")	KITCHEN EQUIPMENT CO.	CUSTOM STAINLESS STEEL	EXISTING	G		TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
9	S.S. DOUGH TABLE (30"x60")	KITCHEN EQUIPMENT CO.	CUSTOM STAINLESS STEEL	EXISTING	G		TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
10	S.S. CUT TABLE (24"x48")	KITCHEN EQUIPMENT CO.	CUSTOM STAINLESS STEEL	EXISTING	G		TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
10A	S.S. TABLE (30"x30")	KITCHEN EQUIPMENT CO.	CUSTOM STAINLESS STEEL	EXISTING	G		TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
14	TRASH RECEPTACLE W/ LID	CONTINENTAL	4444/ 4445/ 3255	EXISTING	G		
15	ALUMINUM DUNNAGE RACK (24"x48")	NEW AGE	2009	KEC	G		
19	ALUMINUM DUNNAGE RACK (18"x48")	NEW AGE	94115	KEC	G		
20	SHELVING UNIT	METRO	1848NK3, 86PK3	EXISTING	G		TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
27	SINGLE DOOR SODA COOLER	BROWNS FINE FOODS		OWNER	G	E	
30	DOUGH SHEETER	DOYON INC.	DLP12DP	EXISTING	G		TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
35	FIRE EXTINGUISHER			M	M		NEW CLASS K FIRE EXTINGUISHER - REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS
37	HAND SINK WITH FAUCET	UNIVERSAL	EHS-1	KEC	M		SUPPLIED WITH T&S FAUCET B-1115, SOAP AND TOWEL BY OWNER
39	DIGITAL MENU BOARD	SOURCED LOCALLY	LG 43UK6300	OWNER	G	E	
44	REFRIGERATION UNITS	BROWN FINE FOODS	TA1RR-2S, TA1RR-1S	EXISTING	G	E	TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION
57	P.O.S. TERMINALS	BROWN FINE FOODS		OWNER	G	E	
72	WARMER CABINET	WESTON INDUSTRIES	4519	EXISTING	G	E	
	CHEMICAL FIRE SUPPRESSION SYSTEM	ANSUL	R-102	EXISTING	M	E	TO BE REMOVED AND RE-INSTALLED IN NEW VENDOR LOCATION. MUST BE INSTALLED BY PERSONS PROPERLY TRAINED AND QUALIFIED - REFER TO MECHANICAL SPECIFICATIONS

4 M1 PAPA JOHNS EQUIPMENT SCHEDULE SCALE: NTS

3	ISSUED FOR TENDER	17/04/2019
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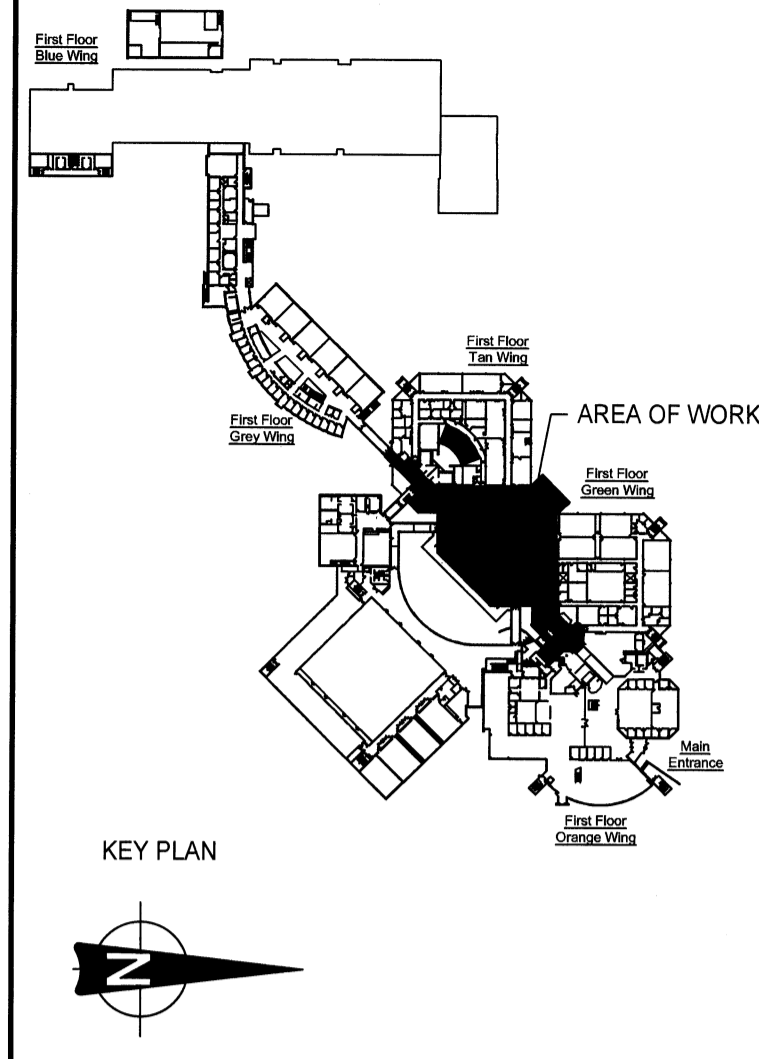
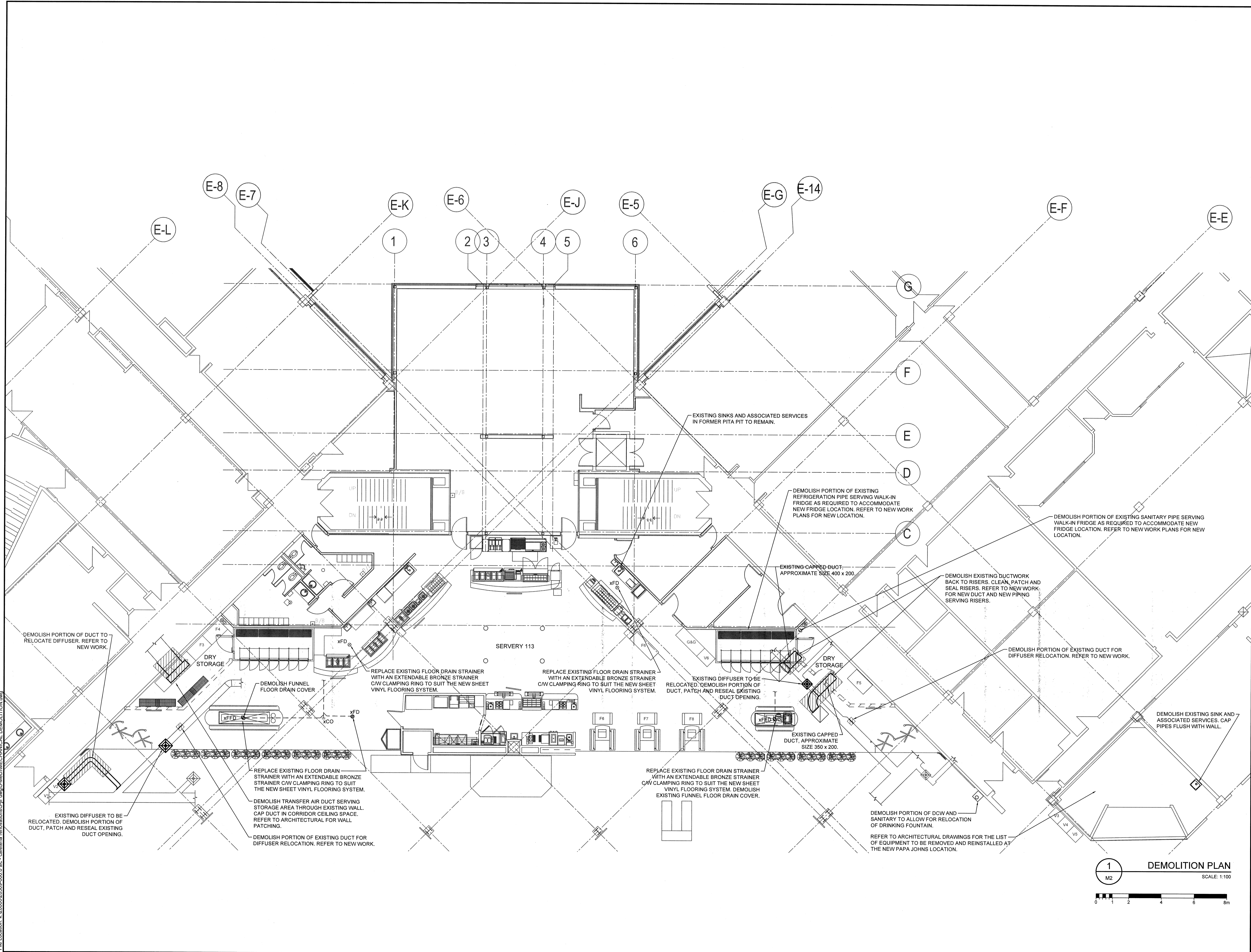
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PROJECT NORTH: K. N. BRENNAN 100225670 PROVINCE OF ONTARIO

PROJECT: ST. LAWRENCE COLLEGE CAFETERIA RENOVATION  
100 PORTSMOUTH AVENUE, KINGSTON, ONTARIO

DRAWING:

LEGEND AND SCHEDULES

DESIGN: KB  
DRAWN: KB  
CHECKED: PE  
JLR #: 28389  
DRAWING #: M1



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CONSULTANT:  
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CONSULTANT:  
 LICENSED PROFESSIONAL ENGINEER  
**K. N. BRENNAN**  
 100225670  
 PROVINCE OF ONTARIO

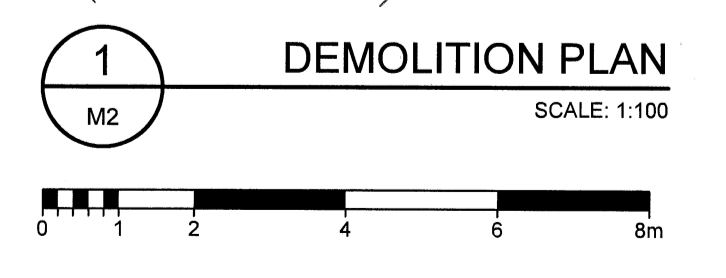
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 LICENSED PROFESSIONAL ENGINEER  
**P. T. ESCUDERO**  
 100150916  
 PROVINCE OF ONTARIO

PROJECT:  
**ST. LAWRENCE COLLEGE CAFETERIA RENOVATION**  
 100 PORTSMOUTH AVENUE, KINGSTON, ONTARIO

DRAWING:  
**MECHANICAL DEMOLITION**

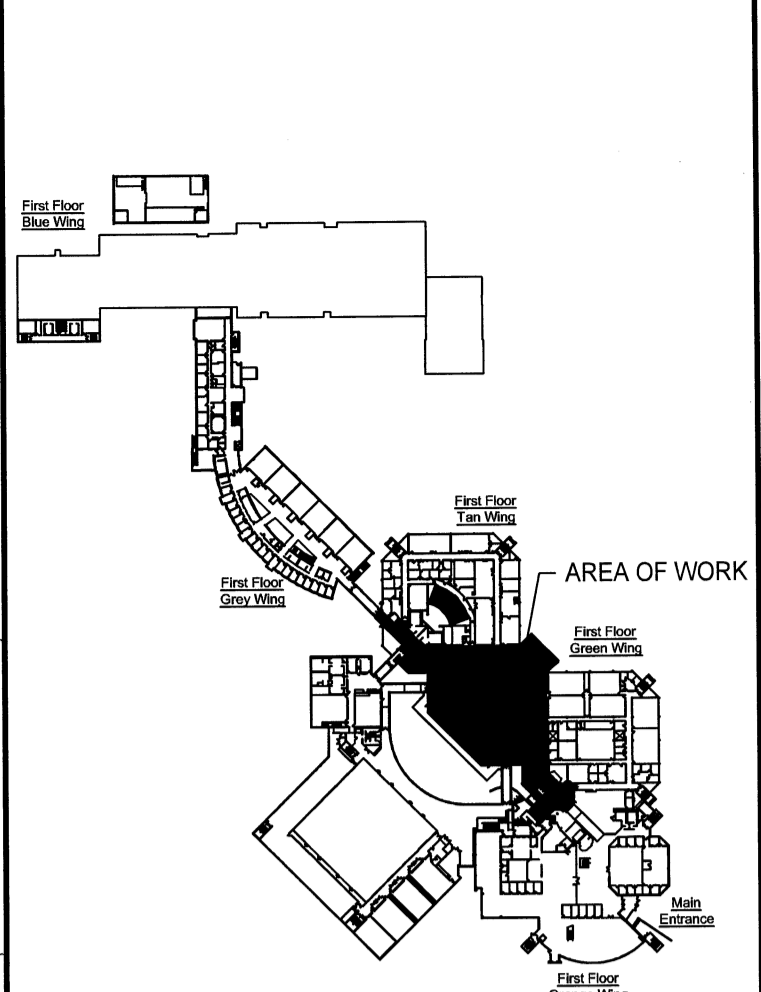
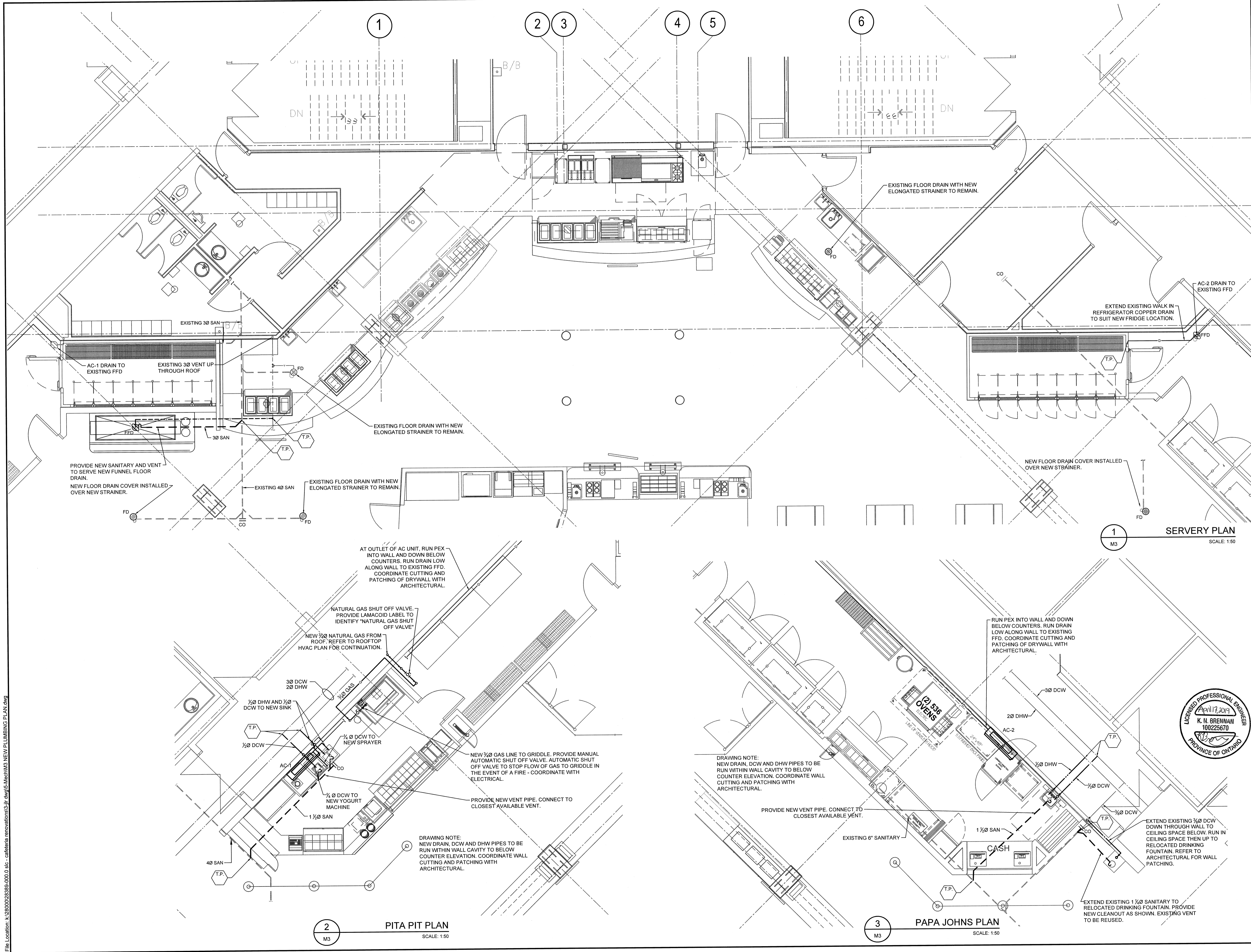
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DRAWING #:  
**M2**



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CONSULTANT: **J.L. Richards ENGINEERS-ARCHITECTS-PLANNERS**

CONSULTANT: **J.L. Richards ENGINEERS-ARCHITECTS-PLANNERS**

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PROJECT NORTH: **LICENCED PROFESSIONAL ENGINEER P. T. ESCUDERO 100156916 PROVINCE OF ONTARIO**

PROJECT: **ST. LAWRENCE COLLEGE CAFETERIA RENOVATION**

100 PORTSMOUTH AVENUE, KINGSTON, ONTARIO

DRAWING: **NEW PLUMBING PLAN**

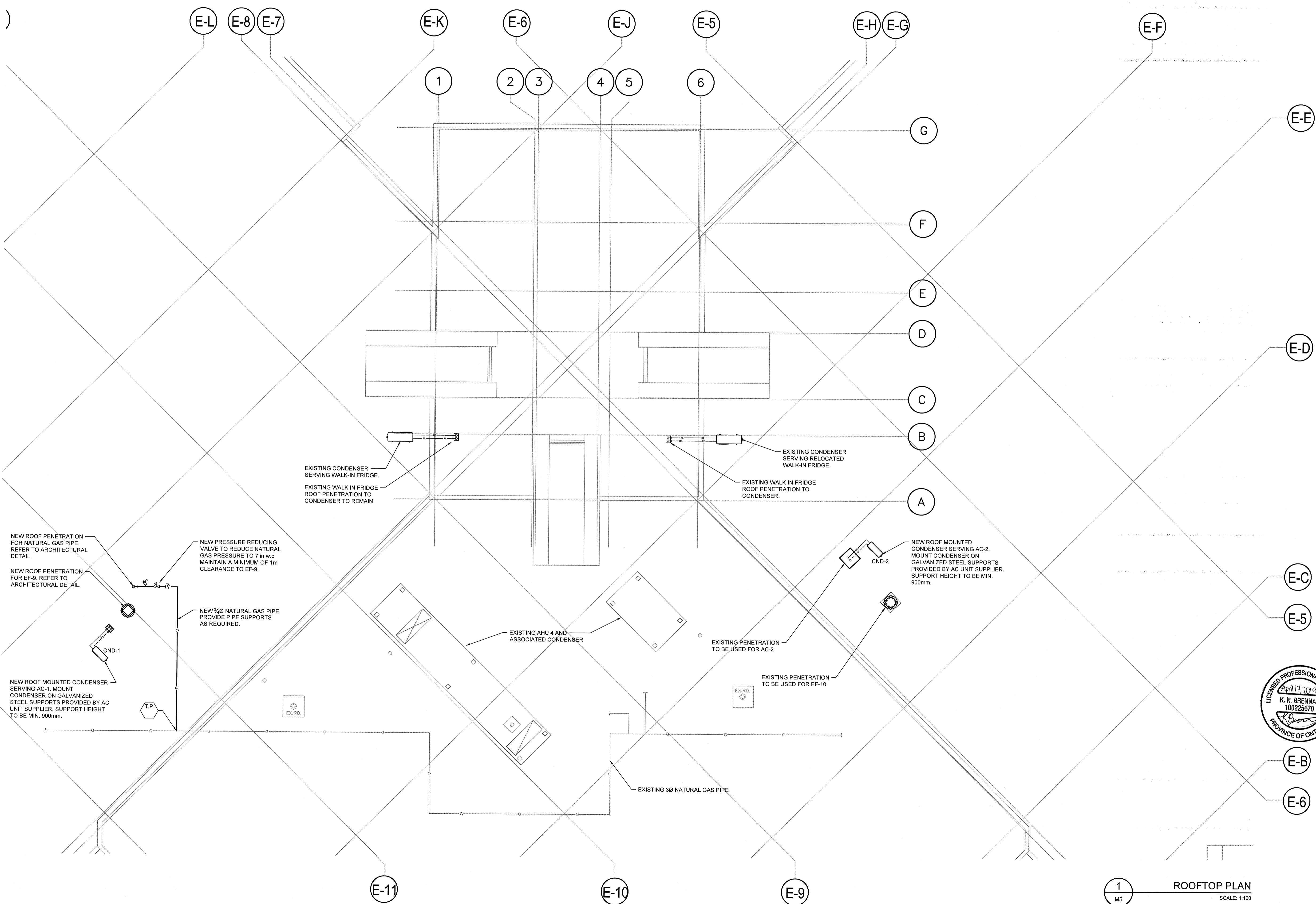
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DRAWING #: **M3**

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PLOT DATE: April 17, 2019 2:49:26 PM





NEW ROOF PENETRATION FOR NATURAL GAS PIPE. REFER TO ARCHITECTURAL DETAIL.

NEW ROOF PENETRATION FOR EF-9. REFER TO ARCHITECTURAL DETAIL.

NEW PRESSURE REDUCING VALVE TO REDUCE NATURAL GAS PRESSURE TO 7 in. w.c. MAINTAIN A MINIMUM OF 1m CLEARANCE TO EF-9.

NEW 3/4" NATURAL GAS PIPE. PROVIDE PIPE SUPPORTS AS REQUIRED.

NEW ROOF MOUNTED CONDENSER SERVING AC-1. MOUNT CONDENSER ON GALVANIZED STEEL SUPPORTS PROVIDED BY AC UNIT SUPPLIER. SUPPORT HEIGHT TO BE MIN. 900mm.

T.P.

EX. RD.

EXISTING CONDENSER SERVING WALK-IN FRIDGE.

EXISTING WALK IN FRIDGE ROOF PENETRATION TO CONDENSER TO REMAIN.

EXISTING AHU 4 AND ASSOCIATED CONDENSER

EXISTING CONDENSER SERVING RELOCATED WALK-IN FRIDGE.

EXISTING WALK IN FRIDGE ROOF PENETRATION TO CONDENSER.

EXISTING PENETRATION TO BE USED FOR AC-2

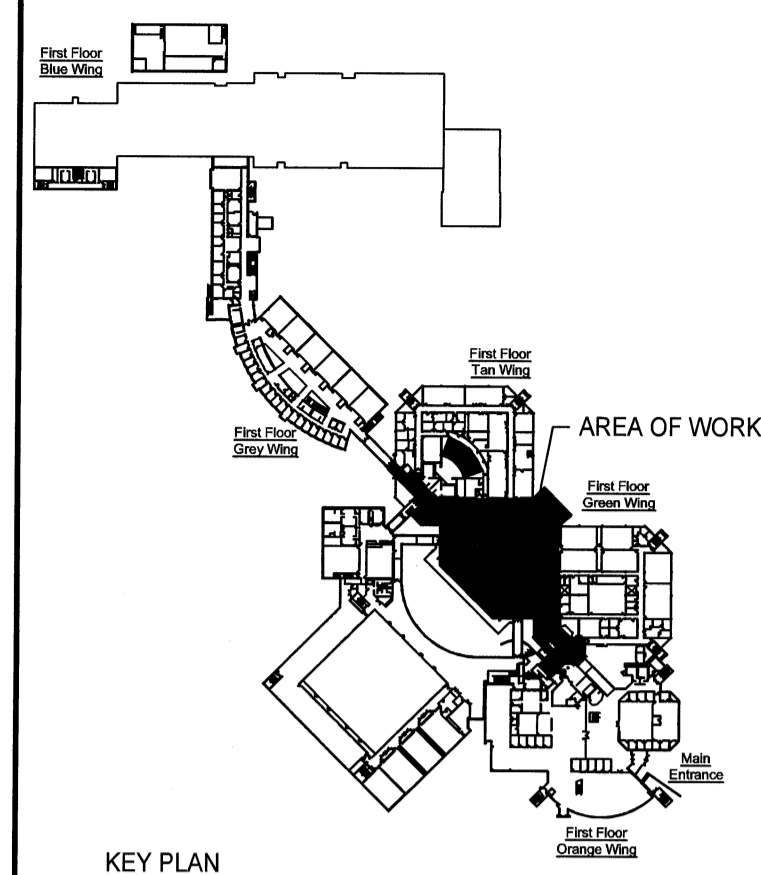
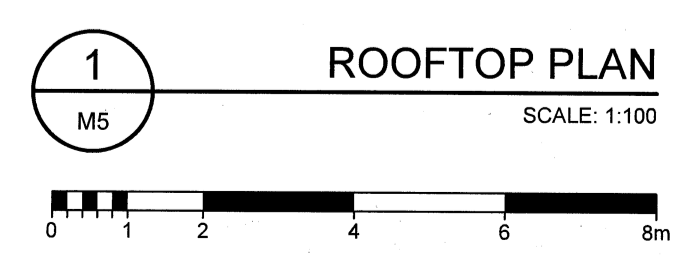
EXISTING PENETRATION TO BE USED FOR EF-10

EX. RD.

NEW ROOF MOUNTED CONDENSER SERVING AC-2. MOUNT CONDENSER ON GALVANIZED STEEL SUPPORTS PROVIDED BY AC UNIT SUPPLIER. SUPPORT HEIGHT TO BE MIN. 900mm.

CND-2

EXISTING 3/2" NATURAL GAS PIPE



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CONSULTANT:



PROFESSIONAL STAMP

PROJECT NORTH

LICENSED PROFESSIONAL ENGINEER  
K. N. BRENNAN  
100225670  
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER  
P. T. ESCUDERO  
100150916  
PROVINCE OF ONTARIO

PROJECT:

**ST. LAWRENCE COLLEGE CAFETERIA RENOVATION**

100 PORTSMOUTH AVENUE, KINGSTON, ONTARIO

DRAWING:

**ROOFTOP HVAC PLAN**

DESIGN: KB

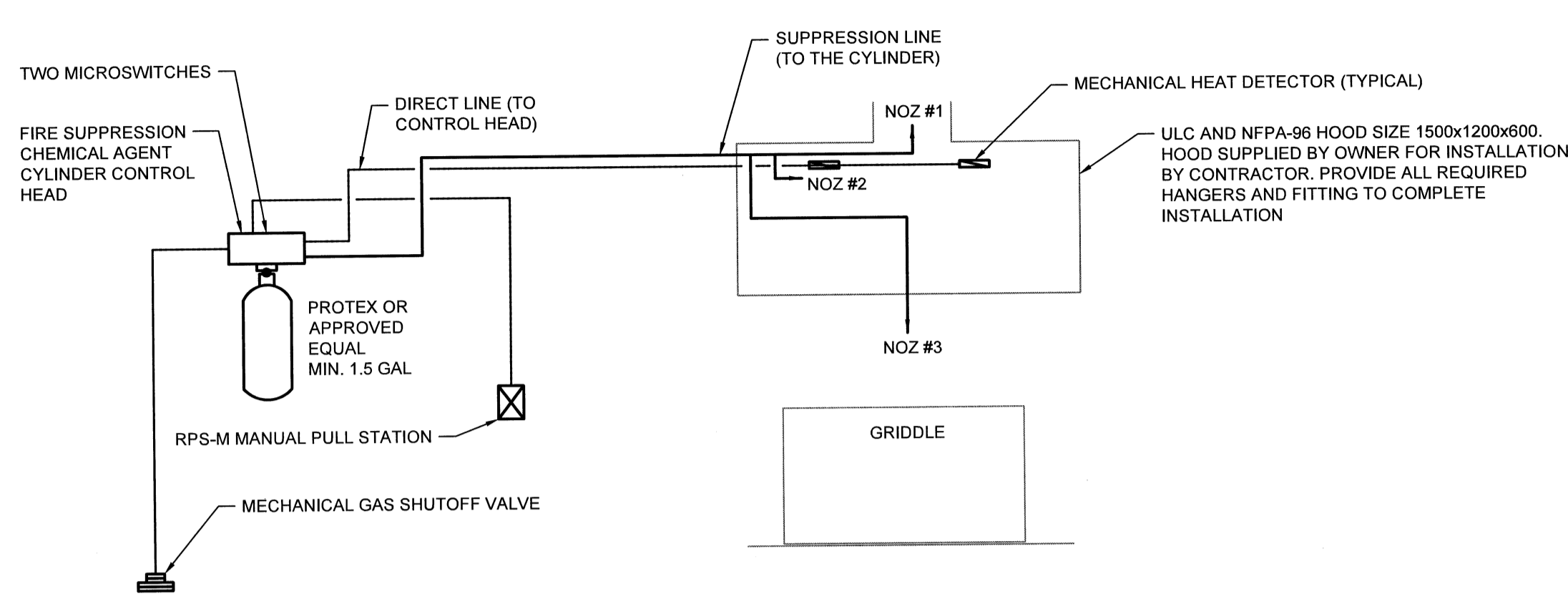
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CHECKED: PE

JLR # 28389

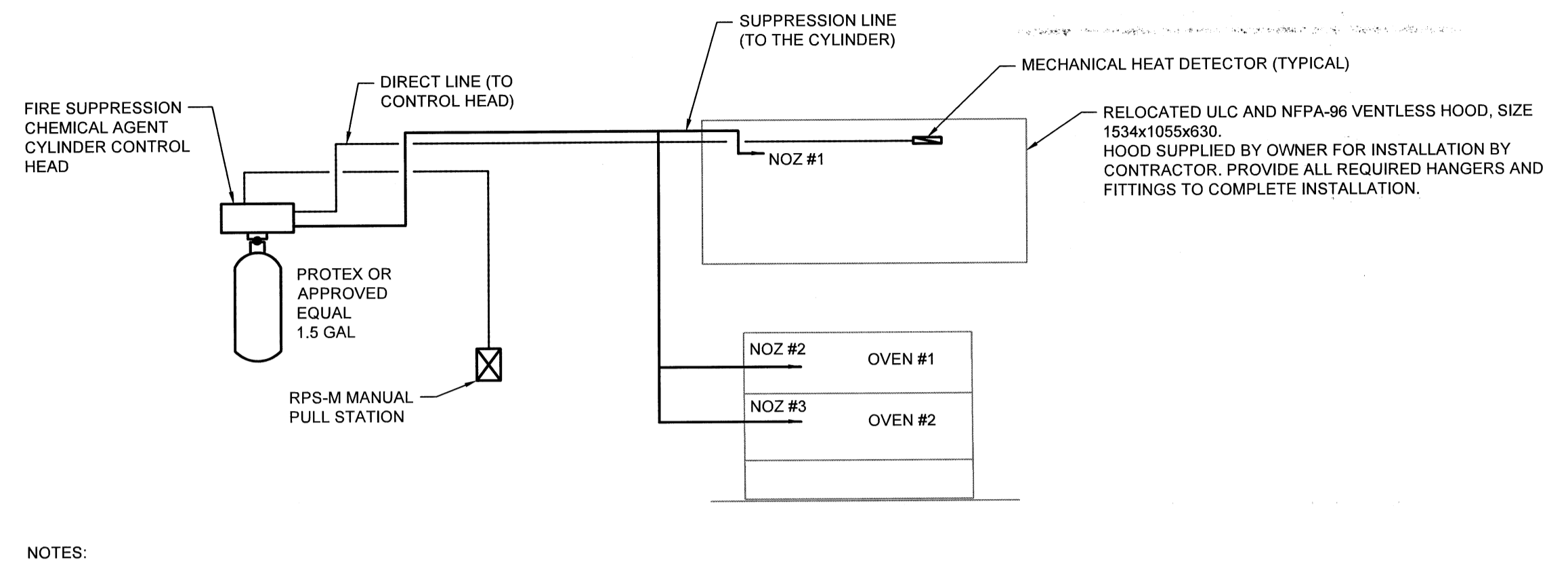
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**M5**



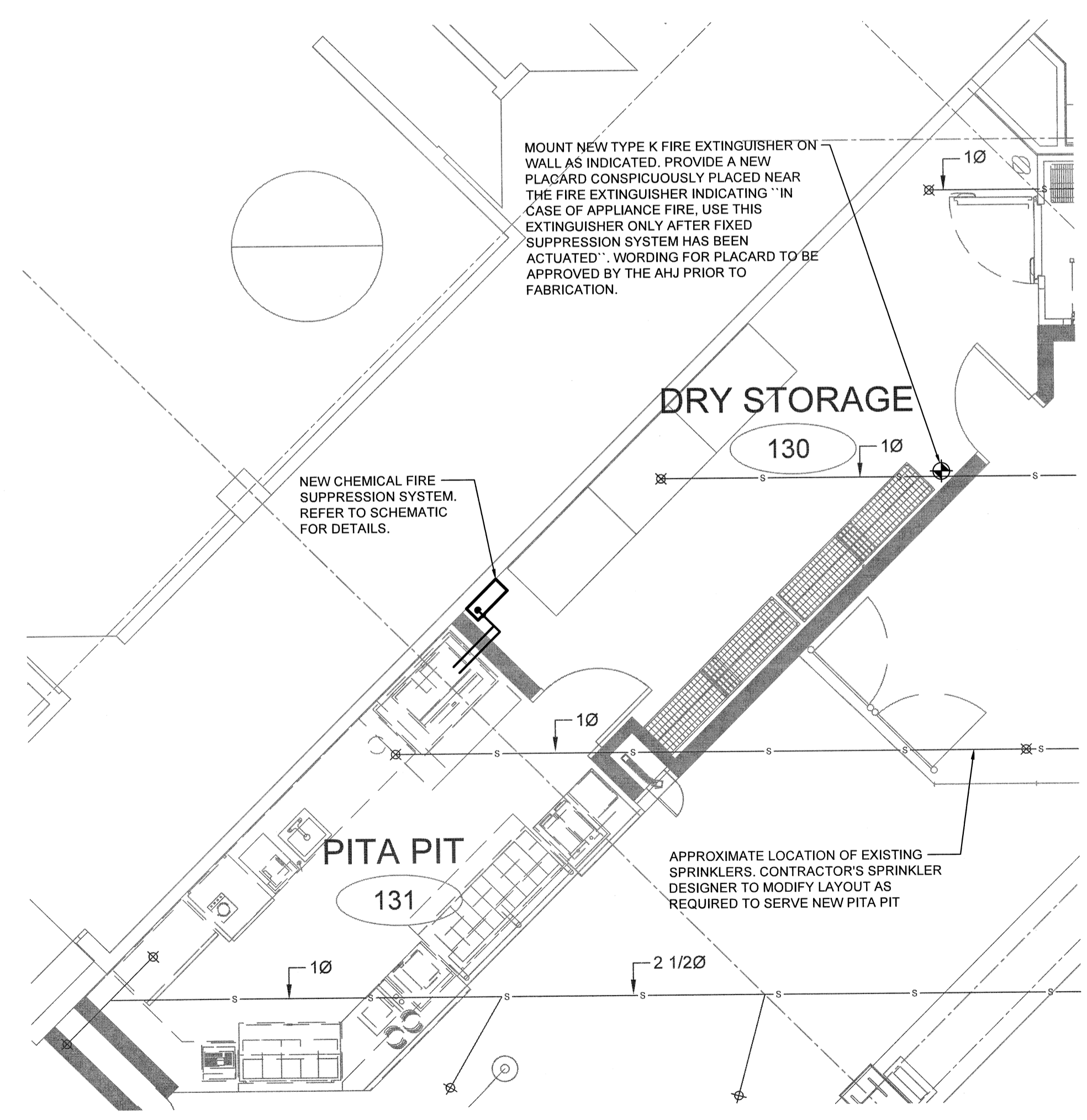
- NOTES:
1. INSTALLATION TO BE PERFORMED ONLY BY PERSONS PROPERLY TRAINED AND QUALIFIED. INSTALL IN ACCORDANCE WITH NFPA-96.
  2. CONTRACTOR TO PROVIDE COMPLETE SYSTEM. REFER TO CUT SHEETS IN APPENDIX A FOR PRE-PURCHASED EQUIPMENT INCLUDING NATURAL GAS GRIDDLE AND EXHAUST HOOD.

**1 PITA PIT NEW CHEMICAL FIRE SYSTEM SCHEMATIC**  
SCALE: NTS

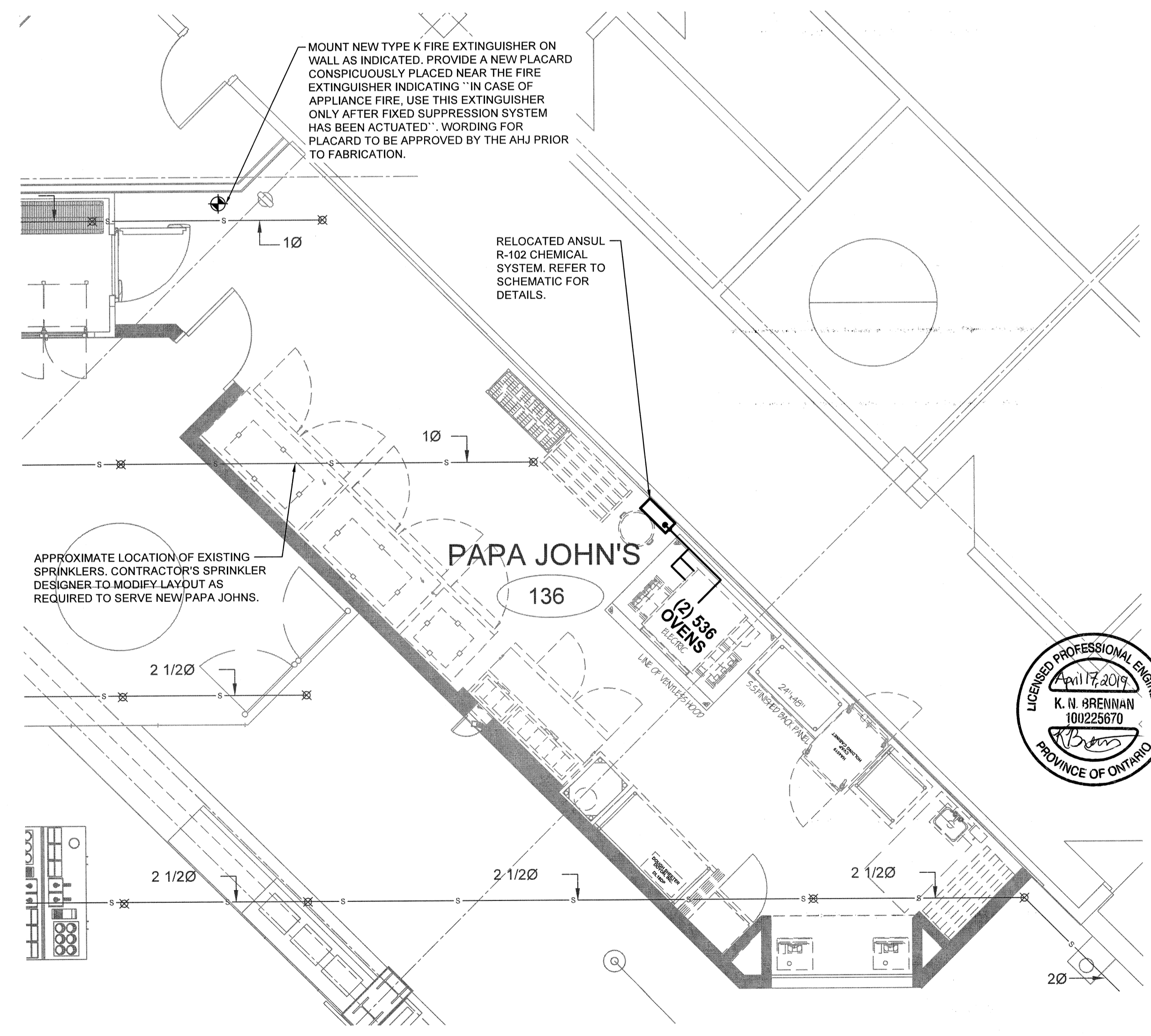


- NOTES:
1. RELOCATED FIRE SUPPRESSION SYSTEM TO MATCH PREVIOUS INSTALLATION. SCHEMATIC TO BE CONFIRMED IN FIELD BY MECHANICAL CONTRACTOR OR CERTIFIED INSTALLER PRIOR TO REMOVAL AND RE-INSTALLATION. INSTALL IN ACCORDANCE WITH NFPA-96.
  2. ADDITIONAL FIELD PIPING AND FITTINGS WILL BE REQUIRED TO SUIT NEW HOOD AND PANEL LOCATION.
  3. INSTALLATION TO BE PERFORMED ONLY BY PERSONS PROPERLY TRAINED AND QUALIFIED.

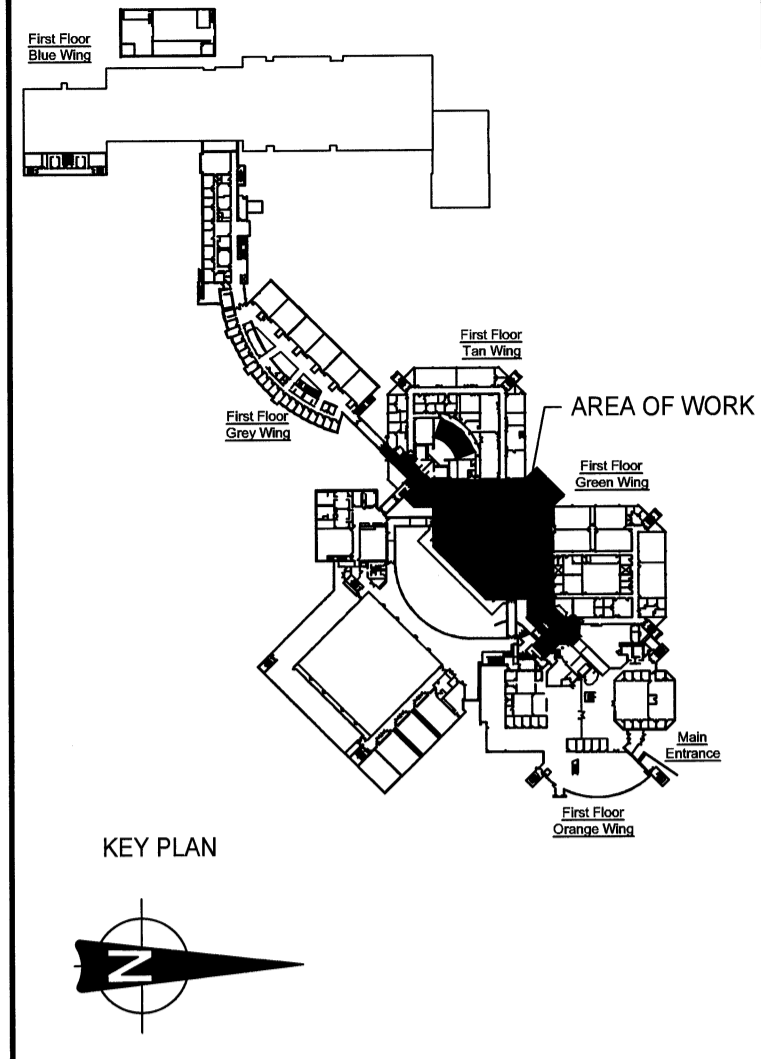
**2 RELOCATED PAPA JOHN'S CHEMICAL FIRE SYSTEM SCHEMATIC**  
SCALE: NTS



**3 PITA PIT FIRE SUPPRESSION SYSTEM**  
SCALE: 1:50



**4 PAPA JOHN'S FIRE SUPPRESSION SYSTEM**  
SCALE: 1:50



GENERAL NOTE:  
EXISTING SPRINKLER LOCATIONS AND PIPING LAYOUT ARE APPROXIMATE. ACTUAL LOCATIONS AND SIZES TO BE VERIFIED ON SITE BY CONTRACTOR PRIOR TO BID.

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2	ISSUED FOR CLIENT REVIEW	16/04/2019
1	ISSUED FOR CLIENT REVIEW	12/04/2019

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VERIFY SHEET SIZE AND SCALES. BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING.  
SCALE: AS INDICATED

CLIENT:  
**St. Lawrence College**

CONSULTANT:  
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ENGINEERS · ARCHITECTS · PLANNERS

PROFESSIONAL STAMP  
K. N. BRENNAN  
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PROVINCE OF ONTARIO

PROJECT:  
**ST. LAWRENCE COLLEGE CAFETERIA RENOVATION**  
100 PORTSMOUTH AVENUE, KINGSTON, ONTARIO

DRAWING:  
**FIRE SUPPRESSION PLAN**

DESIGN: KB  
DRAWN: KB/BP  
CHECKED: PE  
JLR #: 28389

DRAWING #:  
**M6**