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MTE

LAURELWOOD P.S. - HVAC AND CONTROLS UPGRADE

DRAWING LIST

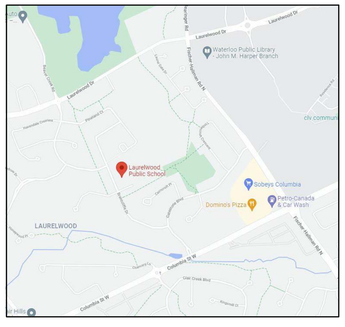
ARCHITECTURAL

STRUCTURAL

MECHANICAL

ELECTRICAL

KEY PLAN



LAURELWOOD P.S. - HVAC AND CONTROLS UPGRADE

Tender No. 7263-RW-22

460 Brentcliffe Dr., Waterloo, ON N2T 2R5

March 11, 2022

SET No.

PROJECT NUMBER

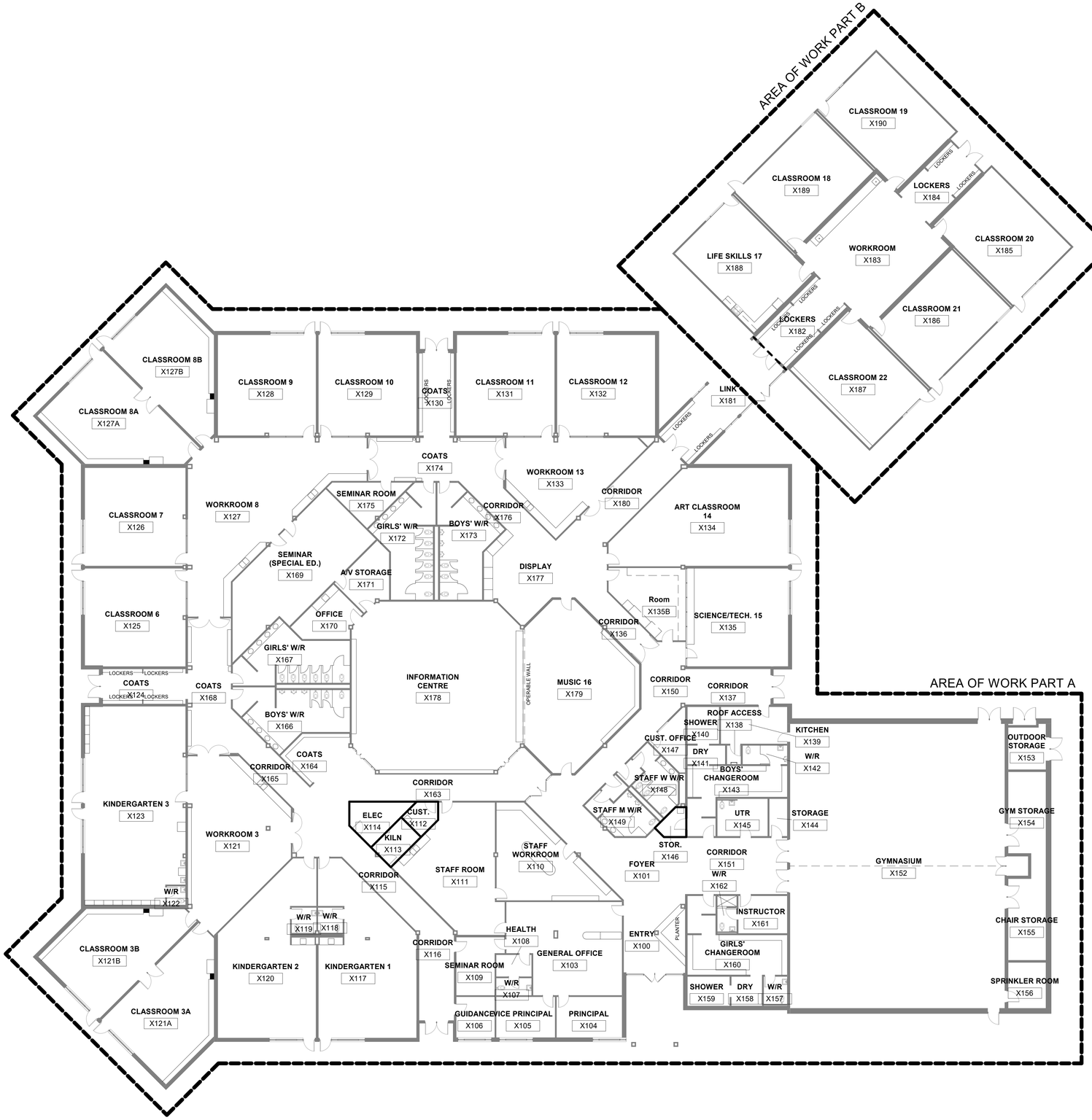
21121A

OBC DATA MATRIX - PART 11

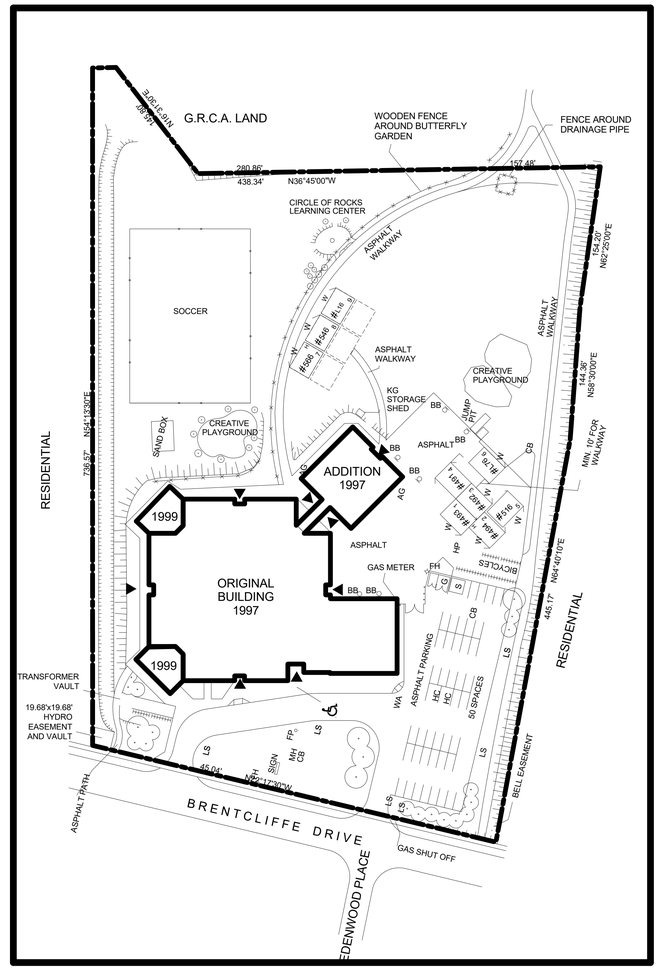
Item				OBC Ref.
11.1	Existing building classification:	Describe Existing Use: ELEMENTARY SCHOOL (EX. SPRINKLERED) Construction Index: 5 - Non-combustible construction Hazard Index: 6 - Large Building - A2 Occupancy ■ Not applicable (no change of major occupancy)		11.2.1 T 11.2.1.1A T 11.2.1.1B to N
11.2	Alteration to Existing Building is:	Basic Renovation: ■ Extensive Renovation: □		11.3.3.1 11.3.3.2
11.3	Reduction in Performance Level:	Structural: ■ No □ Yes By increase in occupant load: ■ No □ Yes By change of major occupancy: ■ No □ Yes Plumbing: N/A ■ No □ Yes Sewage-system: N/A ■ No □ Yes		11.4.2 11.4.2.1 11.4.2.2 11.4.2.3 11.4.2.4 11.4.2.5
11.4	Compensating Construction:	Structural: ■ No □ Yes Increase in occupant load: ■ No □ Yes Change of major occupancy: ■ No □ Yes Plumbing: N/A ■ No □ Yes Sewage-system: N/A ■ No □ Yes		11.4.2 11.4.2.1 11.4.2.2 11.4.2.3 11.4.2.4 11.4.2.5
11.5	Compliance Alternatives Proposed:	■ No (not required) □ Yes (give number(s))		11.5.1
11.6	Alternative Measures Proposed:	■ No □ Yes (explain)		11.5.2

ROOF PENETRATIONS

REFER TO MECH., ELEC., STRUCTURAL DRAWINGS FOR NEW ROOF PENETRATIONS. G.C. TO SCRAPE BACK MIN. 400mm OF EXISTING ROOF FOR INSTALLATION AND TIES INTO EXISTING MEMBRANE AND INSULATION. COORDINATE WITH DIV. 15 & 16 & ROOFING DETAILS. PROVIDE PRESSURE TREATED WOOD BLOCKING AND CANT STRIP AT EDGES OF PENETRATION FROM NEW PENETRATIONS. COMPLETE WITH TRANSITION FLASHING MEMBRANES AND PREFIN. METAL FLASHING, AS REQUIRED FOR PENETRATIONS.



1 A-A01 *GROUND FLOOR - EXISTING*
SCALE: 1 : 150



2 A-A01 *Site Plan*
SCALE: 1 : 800

FIRE SEPARATION LEGEND

1 HOUR FIRE SEPARATION

3/4 HOUR FIRE SEPARATION

NO.	DESCRIPTION	DATE
2	ISSUED FOR TENDER / BP	22/03/11
1	ISSUED FOR TENDER REVIEW	22/03/01

DRAWINGS ARE NOT TO BE SCALED. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT, AND MUST REPORT ANY DISCREPANCIES TO THE CONSULTANTS BEFORE PROCEEDING WITH THE WORK. THE USE OF THIS DRAWING OR PART THEREOF IS FORBIDDEN WITHOUT THE WRITTEN APPROVAL OF THE CONSULTANTS.

ONTARIO ASSOCIATION OF ARCHITECTS
MAR. 11/22
PRISCILLA LADOUCEUR
LICENCE 6053
CERTIFICATE OF PRACTICE #4292

LAURELWOOD P.S. - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board
51 Ardelt Ave, Kitchener, ON N2C 2R5

KEY PLAN, SITE PLAN & OBC MATRIX

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel: (905) 607-9284 Fax: (905) 607-9290

SCALE	PROJECT
As indicated	21121A
DATE	
March 11, 2022	
DRAWN JK	DRAWING
CHECKED PL	A-A01
PRINT DATE	3/11/2022 2:07:01 PM
REVIT FILE	T:\2021\2112102\Revit.RVT

GENERAL DEMOLITION NOTES
to be followed for Reflected Ceiling Plans

1. PATCH AND MAKE GOOD ANY MINOR HOLES DUE TO HARDWARE IN EXISTING WALLS TO PREPARE FOR NEW FINISHES.
2. OWNER TO REMOVE ALL PLAQUES, MIRRORS AND ARTWORK PRIOR TO DEMOLITION. PATCH AND MAKE GOOD ANY MINOR HOLES FROM REMOVALS IN EXISTING WALLS TO PREPARE FOR NEW FINISHES.
3. COORDINATE AND PREPARE FOR NEW WORK INCLUDING REMOVALS, CUTTING, PREPARATION ETC. WHETHER ITEMS ARE SHOWN ON DEMOLITION PLAN OR NOT. INCLUDE ALL REQUIREMENTS FOR DEMOLITION AND PREPARATION TO SUIT PROPOSED FLOOR PLANS. ALL NECESSARY DISCONNECTS AND ALTERATIONS TO EXISTING MECHANICAL AND ELECTRICAL SYSTEMS SHALL BE INCLUDED. PATCH AND MAKE GOOD ALL EXISTING FINISHES TO REMAIN. REFER TO SCHEDULES AND SPECIFICATIONS FOR OTHER NECESSARY REQUIREMENTS.
4. RENOVATED AREAS TO BE THOROUGHLY CLEANED TO OWNER SATISFACTION, ALL OF CONSTRUCTION DUST, DEBRIS AND MATERIALS.
5. ALL DIMENSIONS IN AREA OF WORK TO BE FIELD VERIFIED BY G.C. PRIOR TO START OF CONSTRUCTION.

CONSTRUCTION RCP NOTES

ALL REMOVALS/DEMOLITIONS TO BE COORDINATED WITH STRUCTURAL, MECHANICAL, ELECTRICAL DRAWINGS PRIOR TO DEMOLITION START. FOR ADDITIONAL DEMOLITION, DOCUMENTS AND DETAILS SEE STRUCTURAL, MECH. AND ELECT. DWGS.

NOT ALL EXISTING LIGHT FIXTURES, GRILLES, DIFFUSERS, SPRINKLER HEADS ETC. ARE NOT SHOWN ON THIS PAGE. REFER TO DEMOLITION MECH AND ELECTRICAL DRAWINGS.

PATCH AND MAKE GOOD ALL EXISTING WALLS TO REMAIN FROM CEILING DEMOLITION AND REMOVED WALL MTD. LIGHT FIXTURES AND DEVICES. REFER TO PROPOSED PLANS AND FOR NEW CEILING MATERIALS AND FINISHES

GENERAL CONTRACTOR IS RESPONSIBLE TO REVIEW ABATEMENT REPORT IN SPECIFICATION FOR EXTENT OF ALL DESIGNATED SUBSTANCE AND HAZARDOUS MATERIALS SURVEYS AND EXTENT OF ABATEMENT WORK.

NOTE: ALL EXISTING CEILING HEIGHTS ARE +/- AND MAY VARY. FIELD VERIFY AS REQUIRED.

C1 CAREFULLY REMOVE EXISTING ACOUSTIC CEILING TILES, GRIDS, DIFFUSERS, LIGHTING, RETURNS, ETC. AS REQUIRED TO INSTALL NEW MECHANICAL DEVICES & DUCTWORK OR STRUCTURAL RE-INFORCEMENTS. SAFTELY STORE ON SITE. UPON COMPLETION OF STRUCUTRAL & MECHANICAL WORK REINSTALL TO MACH PREVIOUS LOCATION. REFER TO STRUCT./MECH./ELECT DRAWINGS. MAKE GOOD ANY HOLES FROM PERIMETER SUPPORTS.

C2 PRIME AND PAINT ALL NEW EXPOSED DUCT WORK & GRILLES TO MATCH ADJACENT. REFER TO SPECIFICATION FOR PAINT COLOUR.

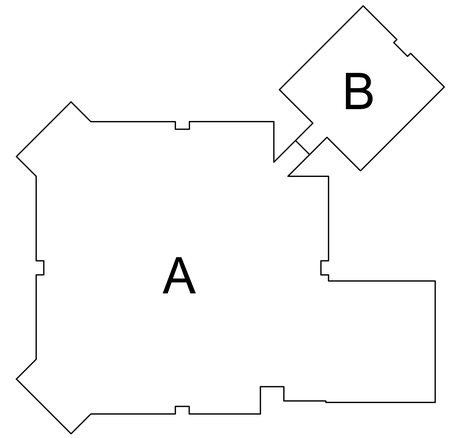
C3 COMPLETELY REMOVE EXISTING GYPSUM CEILING, BULKHEADS, AND STUD FRAMING. PATCH AND MAKE GOOD EXISTING WALLS TO REMAIN AS REQUIRED FROM DEMOLITION. CAREFULLY REMOVE AND/OR RELOCATE EXISTING LIGHT FIXTURES, GRILLES, AND ELECTRICAL AND MECHANICAL DEVICES AS REQUIRED. SAFTELY STORE DEVICES ON SITE. UPON COMPLETION OF STRUCUTRAL & MECHANICAL WORK INSTALL NEW GYPSUM CEILING, BULKHEAD, FRAMING, INCLUDING ALL LIGHTING AND DEVICES. PRIME AND PAINT. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS. REFER TO SPECIFICATION.

C4 COMPLETELY REMOVE EXISTING 1 HOUR FIRE RATED GYPSUM CEILING, BULKHEADS, AND STUD FRAMING. PATCH AND MAKE GOOD EXISTING WALLS TO REMAIN AS REQUIRED FROM DEMOLITION. CAREFULLY REMOVE AND/OR RELOCATE EXISTING LIGHT FIXTURES, GRILLES, AND ELECTRICAL AND MECHANICAL DEVICES AS REQUIRED. SAFTELY STORE DEVICES ON SITE. UPON COMPLETION OF STRUCUTRAL & MECHANICAL WORK INSTALL NEW 1 HOUR FIRE RATED GYPSUM CEILING, BULKHEAD, FRAMING, INCLUDING ALL LIGHTING AND DEVICES. PRIME AND PAINT. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS. REFER TO SPECIFICATION.

C5 CAREFULLY SAW CUT OPENING IN EXISTING BLOCK WALL FOR NEW DUCTWORK. REFER TO STRUCTURAL DRAWINGS FOR STANDARD LINTEL. CAULK AROUND OPENING & NEW DUCTWORK. COORDINATE OPENING SIZE WITH MECHANICAL DRAWINGS.

C6 AREA OF STRUCTURAL REINFORCEMENT. PRIME AND PAINT NEW STRUCTURAL MEMBERS TO MATCH ADJACENT PAINT COLOURS. REFER TO STRUCTURAL DRAWINGS & SPECIFICATIONS.

CLASSROOM 8B X127B
CLASSROOM 8A X127A
CLASSROOM 9 X128
CLASSROOM 10 X129
COATS X130
CLASSROOM 11 X131
CLASSROOM 12 X132
LINK X181
COATS X174
CORRIDOR X176
WORKROOM 13 X133
CORRIDOR X180
SEMINAR ROOM X175
CLASSROOM 7 X126
WORKROOM 8 X127
ART CLASSROOM 14 X134
SEMINAR (SPECIAL ED.) X169
GIRLS' W/R X172
BOYS' W/R X173
A/V STORAGE X171
DISPLAY X177
CLASSROOM 6 X125
OFFICE X170
Room X135B
SCIENCE/TECH. 15 X135
CORRIDOR X136
COATS X168
GIRLS' W/R X167
COATS X124
BOYS' W/R X166
MUSIC 16 X179
CORRIDOR X150
CORRIDOR X137
INFORMATION CENTRE X178
SHOWER X140
KITCHEN X139
CUST. OFFICE X147
DRY X141
ROOF ACCESS X138
W/R X142
CORRIDOR X165
COATS X164
STAFF W W/R X148
BOYS' CHANGEROOM X143
CORRIDOR X163
KINDERGARTEN 3 X123
ELEC X114
CUST. X112
KILN X113
STAFF M W/R X149
UTR X145
STORAGE X144
STOR. X146
WORKROOM 3 X121
STAFF WORKROOM X110
FOYER X101
CORRIDOR X151
GYMNASIUM X152
W/R X122
STAFF ROOM X111
CORRIDOR X115
W/R X119
W/R X118
W/R X162
INSTRUCTOR X161
CHAIR STORAGE X155
CLASSROOM 3B X121B
CORRIDOR X116
ENTRY X100
GIRLS' CHANGEROOM X160
KINDERGARTEN 2 X120
KINDERGARTEN 1 X117
SEMINAR ROOM X109
HEALTH X108
GENERAL OFFICE X103
W/R X107
SHOWER X159
DRY X158
W/R X157
SPRINKLER ROOM X156
GUIDANCE X106
VICE PRINCIPAL X105
PRINCIPAL X104
OUTDOOR STORAGE X153
CLASSROOM 3A X121A
LINE OF HVAC ON ROOF



KEYPLAN - N.T.S.

1 A-A02 PARTIAL GROUND FLOOR REFLECTED CEILING PLAN - PART A
SCALE: 1 : 100

RCP LEGEND

- EX. LIGHT FIXTURE REFER TO LIGHTING PLANS/LIGHTING SCHEDULES FOR TYPE
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- GYPSUM BOARD CEILING OR BULKHEAD
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- AREA OF EXPOSED STRUCTURE. PRIME AND PAINT NEW MEMBERS TO MATCH ADJ.

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ONTARIO ASSOCIATION OF ARCHITECTS
MAR. 11/22
PRISCILLA LADOUCEUR
LICENCE 6053
CERTIFICATE OF PRACTICE #4292

LAURELWOOD P.S. - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board
51 Ardelt Ave, Kitchener, ON N2C 2R5

PARTIAL GROUND FLOOR REFLECTED CEILING PLAN - PART A

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
TH (905) 607-9284 Fax (905) 607-9290

SCALE	As indicated
DATE	March 11, 2022
DRAWN	JK
CHECKED	PL
PROJECT	21121A
DRAWING	A-A02
PRINT DATE	3/11/2022 2:08:22 PM
REVIT FILE	T:\2021\21121\02\Revit.RVT

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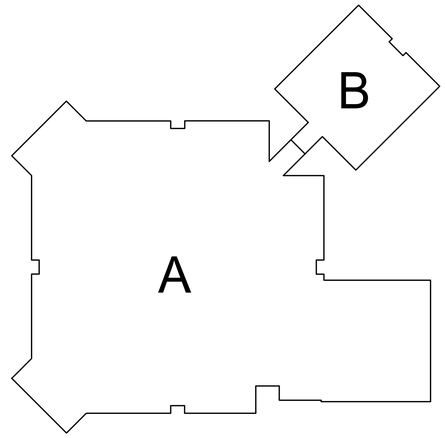

KEYPLAN - N.T.S.

CONSTRUCTION ROOF NOTES

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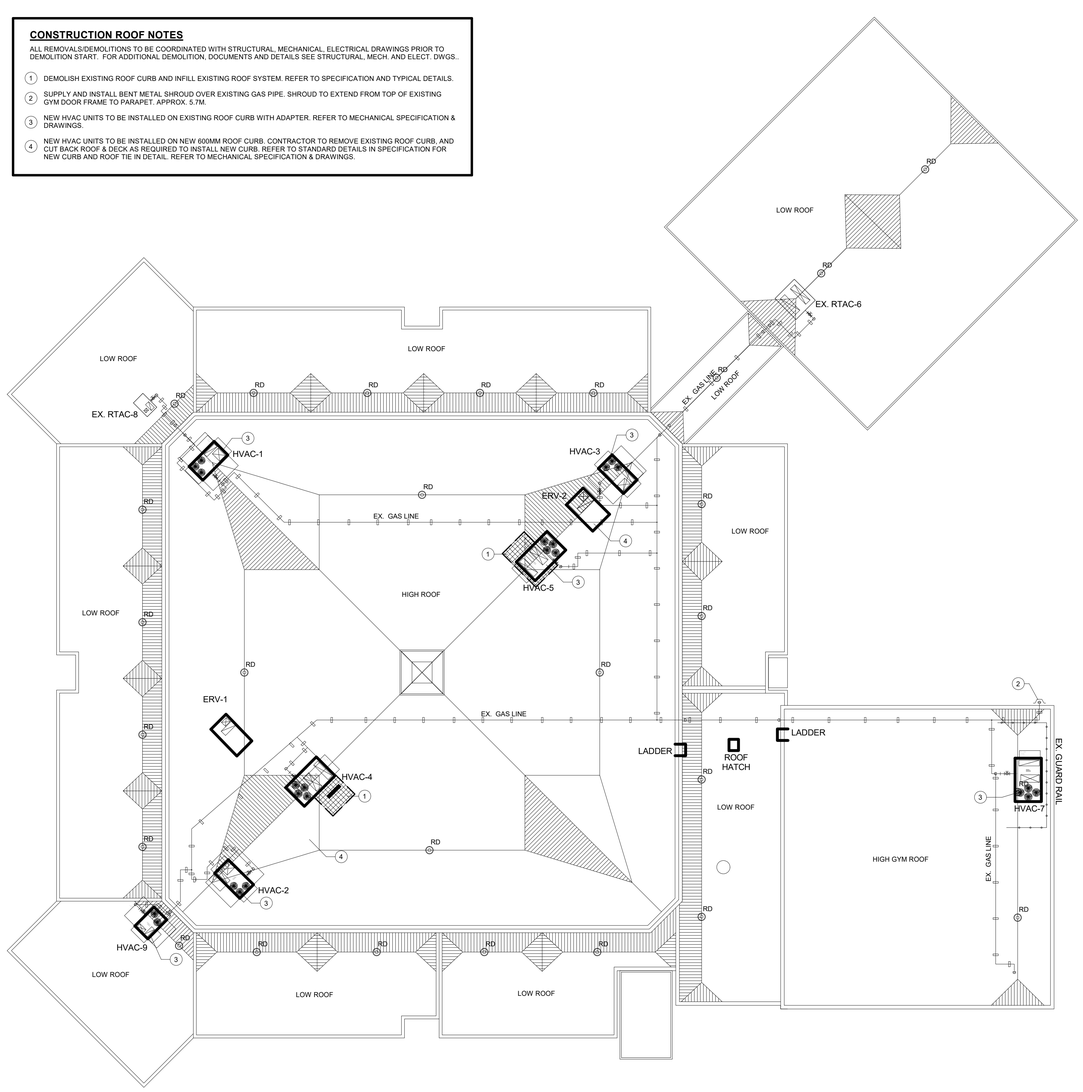
1. DEMOLISH EXISTING ROOF CURB AND INFILL EXISTING ROOF SYSTEM. REFER TO SPECIFICATION AND TYPICAL DETAILS.
2. SUPPLY AND INSTALL BENT METAL SHROUD OVER EXISTING GAS PIPE. SHROUD TO EXTEND FROM TOP OF EXISTING GYM DOOR FRAME TO PARAPET. APPROX. 5.7M.
3. NEW HVAC UNITS TO BE INSTALLED ON EXISTING ROOF CURB WITH ADAPTER. REFER TO MECHANICAL SPECIFICATION & DRAWINGS.
4. NEW HVAC UNITS TO BE INSTALLED ON NEW 600MM ROOF CURB. CONTRACTOR TO REMOVE EXISTING ROOF CURB, AND CUT BACK ROOF & DECK AS REQUIRED TO INSTALL NEW CURB. REFER TO STANDARD DETAILS IN SPECIFICATION FOR NEW CURB AND ROOF TIE IN DETAIL. REFER TO MECHANICAL SPECIFICATION & DRAWINGS.



2 A-A03 *Roof Key Plan*
SCALE: 1 : 200

1 A-A03 *PARTIAL GROUND FLOOR REFLECTED CEILING PLAN - PART B*
SCALE: 1 : 100

RCP LEGEND

- EX. LIGHT FIXTURE REFER TO LIGHTING PLANS/LIGHTING SCHEDULES FOR TYPE
- EX. LIGHT FIXTURE. REFER TO LIGHTING PLANS/LIGHTING SCHEDULES FOR TYPE
- EX. LIGHT FIXTURE. REFER TO LIGHTING PLANS/LIGHTING SCHEDULES FOR TYPE
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ONTARIO ASSOCIATION OF ARCHITECTS
MAR. 11/22
PRISCILLA LADOUCEUR
LICENCE 6053
CERTIFICATE OF PRACTICE #4292

LAURELWOOD P.S. - HVAC AND CONTROLS UPGRADE

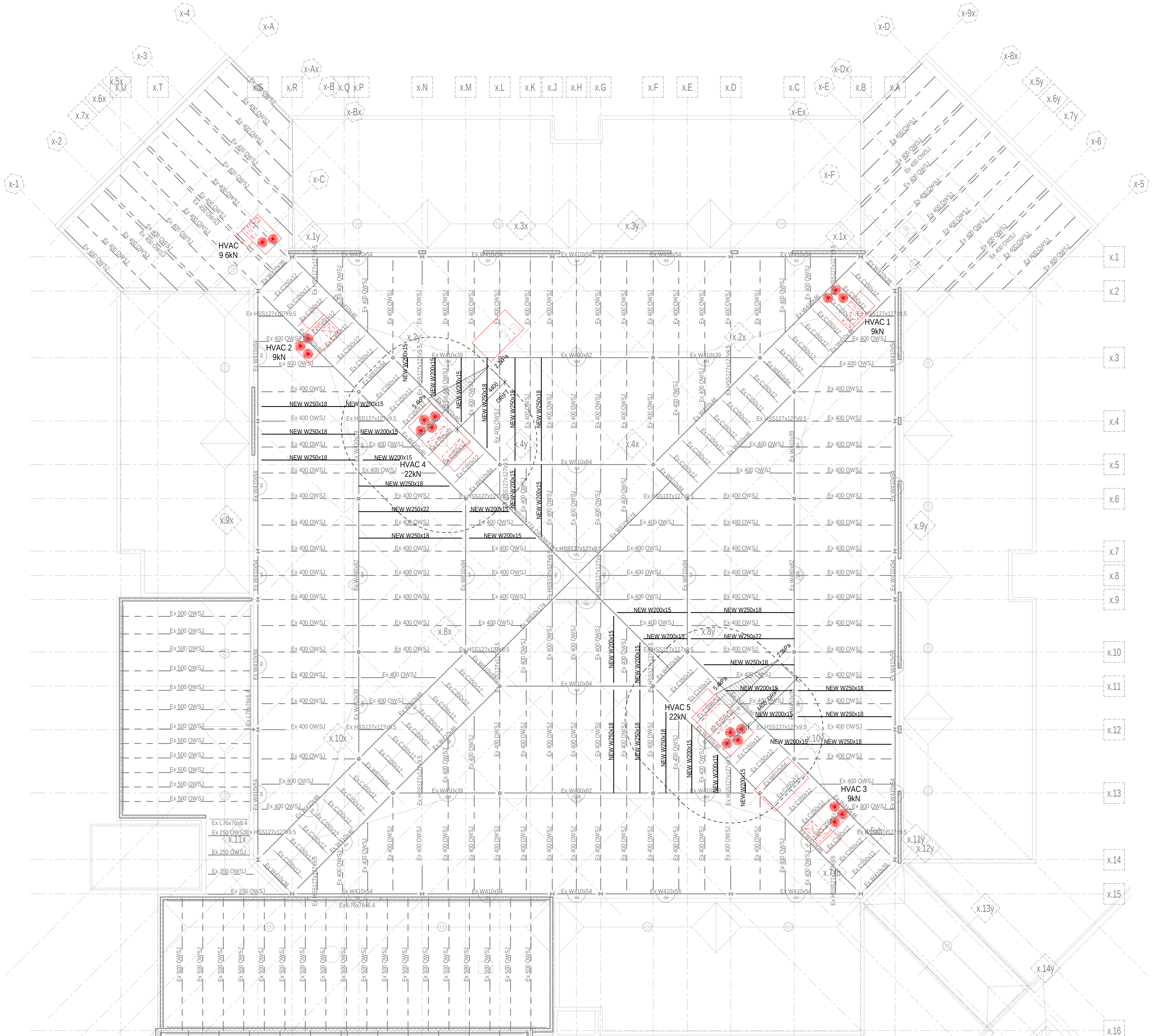
460 Brentcliffe Dr, Waterloo, ON N2T 2R5

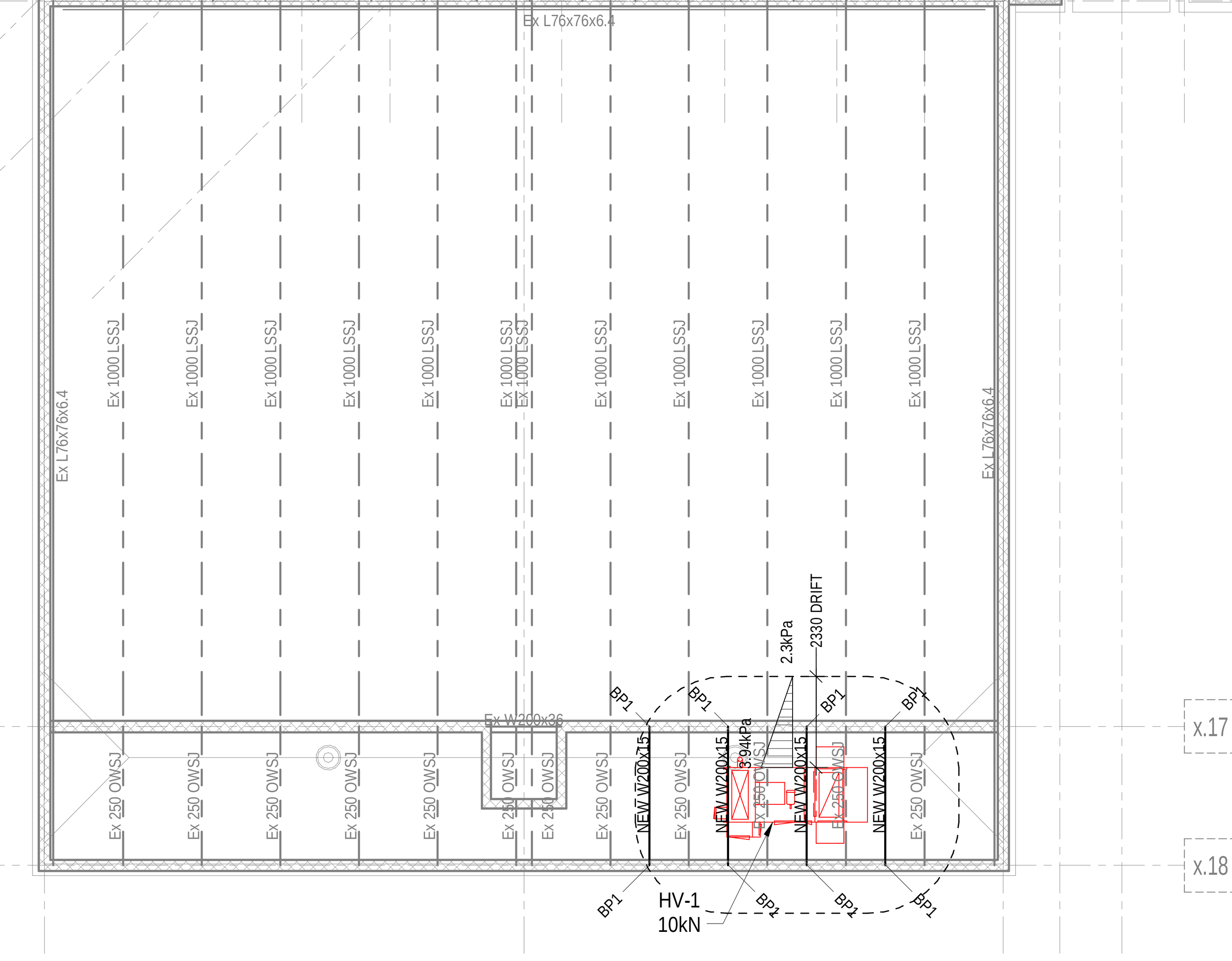
Waterloo Region District School Board
51 Ardelt Ave, Kitchener, ON N2C 2R5

PARTIAL GROUND FLOOR REFLECTED CEILING PLAN - PART B, ROOF PLAN AND DETAILS

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

SCALE	As indicated
DATE	March 11, 2022
DRAWN	JK
CHECKED	PL
PROJECT	21121A
DRAWING	A-A03
PRINT DATE	3/11/2022 2:12:10 PM
REVIT FILE	T:\2021\21121\02\Revit.RVT





EXISTING ROOF FRAMING PLAN

Scale: 1 : 125

GENERAL NOTES

1. CO-ORDINATE ALL TEMPORARY AND OR PERMANENT RELOCATION OF EXISTING ELECTRICAL/MECHANICAL SERVICES WITH CONTRACTOR TO FACILITATE INSTALLATION OF REINFORCING
2. DL=1.15kPa
3. LL = 2.3kPa + DRIFT + MECH UNIT
4. ALL OPENINGS IN MASONRY WALLS REQUIRE A LINTEL. COORDINATE LOCATIONS AND CLEAR MASONRY OPENING WIDTHS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
5. OPENINGS IN NON-LOAD-BEARING WALLS, OPENINGS ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS, COORDINATE LOCATIONS AND CLEAR MASONRY OPENING WIDTHS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND SELECT THE APPROPRIATE LINTEL FROM "GENERAL PURPOSE LINTELS" AS SHOWN IN THE SCHEDULE ON THIS DRAWING, USING WALL CONSTRUCTION AND MAXIMUM CLEAR OPENING WIDTH AS THE CRITERIA.
6. GENERAL CONTRACTOR TO SITE VERIFY ALL CONDITIONS AND/OR DIMENSIONS SHOWN OR IMPLIED ON THE STRUCTRUAL DRAWINGS.
7. CO-ORDINATE ALL STRUCTURAL DRAWINGS AND WORK WITH MECHANICAL AND ELECTRICAL DRAWINGS. REPORT ANY DISCREPANCIES OR CONFLICTS IN DIMENSIONS OR DETAILS TO THE CONSULTANT FOR CLARIFICATION PRIOR TO COMMENCING THE WORK IN QUESTION.
8. ALL STRUCTURAL WORK TO BE IN ACCODRANCE WITH THE ONTARIO BUILDING CODE(CURRENT) AND OTHER APPLICABLE CODES AND STANDARDS AS NOTED BELOW.

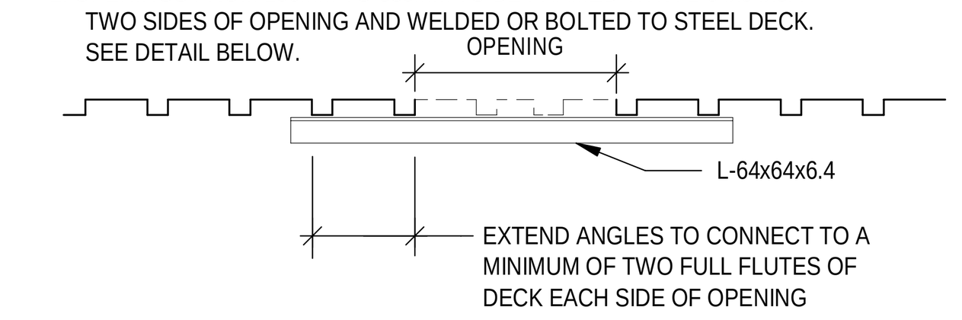
STRUCTURAL STEEL

1. SUBMIT FOR CONSULTANT S REVIEW ERECTION DIAGRAMS AND FABRICATION DETAILS IN ACCORDANCE WITH THE GENERAL NOTES. SHOP DRAWINGS TO BEAR THE SEAL AND SIGNATURE OF A PROFESSIONAL ENGINEER FOR THE DESIGN OF ALL STEEL CONNECTIONS.
2. CONSULTANTS REVIEW OF SHOP DRAWING DOES NOT RELEASE THE CONTRACTOR OF HIS RESPONSIBILITY FOR THE COMPLETENESS OF THE WORK NOR CO-ORDINATION WITH OTHER TRADES.
3. FABRICATION AND ERECTION OF STEEL SHALL BE IN ACCORDANCE WITH CSA S16 (CURRENT).
4. STRUCTURAL STEEL TO CONFORM TO THE FOLLOWING TABLE UNLESS NOTED OTHERWISE.

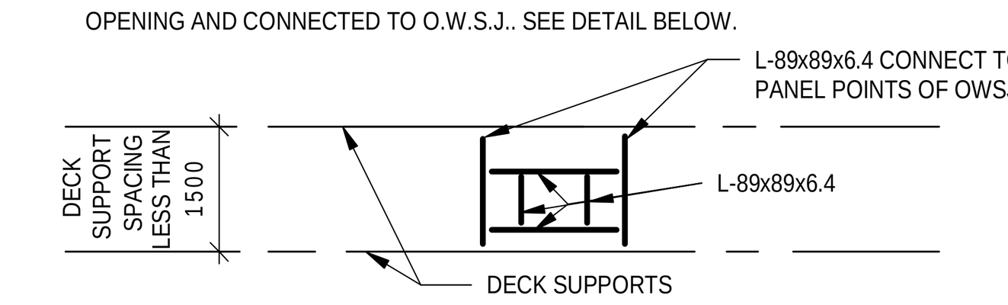
SHAPE	STANDARD	GRADE	MIN. YEILD STRENGTH
CANADIAN WWF & W	CSA G40.21	350W	50ksi
HOLLOW STRUCTURAL SECTION CLASS C	CSA G40.21	350W	50ksi
PLATES, CHANNELS, ANGLES	CSA G40.21	300W	44ksi
WWF & W NOT ROLLED IN CANADA	ASTM A572	50	50ksi

5. ALL WELDING SHALL BE DONE BY AN ORGANIZATION FULLY APPROVED BY THE CANADIAN WELDING BUREAU UNDER CSA-W47.1 (CURRENT) IN DIVISION 1 OR 2 AT THE TIME OF TENDERING. WELDERS TO BE CWB CERTIFIED TO THE COMPANIES STANDARDS. WELDING AND WELDING MATERIALS SHALL CONFORM TO CSA-W59-(CURRENT).
6. THE FABRICATOR SHALL NOTE THE SIZE AND TYPE OF BOLTS AND WELDS USED IN STRUCTURAL CONNECTIONS ON THE SHOP DRAWINGS. MINIMUM 2 BOLTS PER CONNECTION.
7. ALL STRUCTURAL STEEL SHALL BE SUFFICIENTLY STRAIGHT THAT VARIATIONS CANNOT BE DETERMINED WITH THE UNAIDED EYE. ALL STRUCTURAL STEEL SHALL BE THOROUGHLY CLEANED OF ALL LOOSE MILL SCALE, DIRT, OIL, OR OTHER FOREIGN MATTER BEFORE SHOP PAINTING. SHOP PAINT SHALL CONFORM TO CAN/CGSB 1.40-M89 OR CISC/CPMA STANDARD 2-75.
8. WHERE HOT DIP GALVANIZING (HDG) IS SPECIFIED IT SHALL BE IN ACCORDANCE WITH CAN/CSA-G164-M92 (MINIMUM ZINC COATING 600 GSM). STEEL LINTELS SHALL HAVE A MINIMUM BEARING LENGTH OF 8". 10. THE USE OF LEVELING PLATES AT THE BASE OF THE STEEL COLUMNS IS PRHIBITED FOR THIS PROJECT.

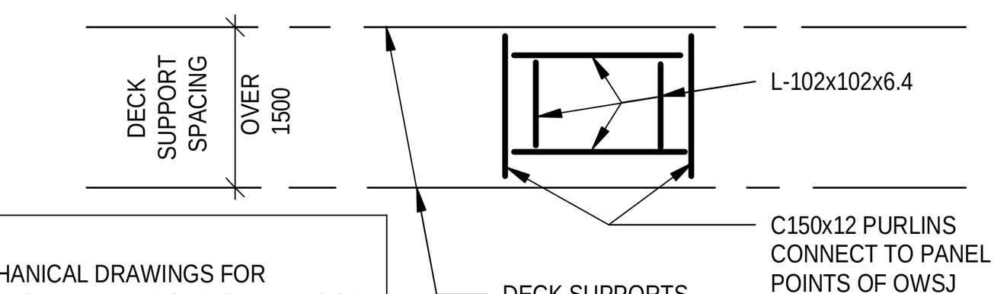
1. ALL OPENINGS LARGER THAN 200mm TO BE FRAMED AS SHOWN BELOW OR AS DETAILED ON DRAWINGS.
2. OPENINGS FROM 200mm TO 350mm TO BE FRAMED WITH L-64x64x6.4 TWO SIDES OF OPENING AND WELDED OR BOLTED TO STEEL DECK. SEE DETAIL BELOW.



3. WHERE DECK SUPPORTS ARE NOT SPACED OVER 1500 o.c. OPENINGS LARGER LARGER THAN 350 TO BE FRAMED WITH L's 89x89x6.4 ALL AROUND OPENING AND CONNECTED TO O.W.S.J.. SEE DETAIL BELOW.



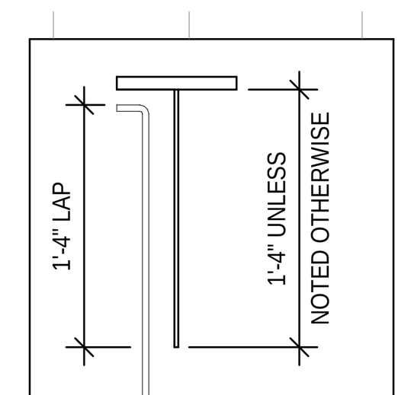
4. WHERE DECK SUPPORTS ARE SPACED OVER 1500 o.c. OPENINGS LARGER THAN 350 TO BE FRAMED WITH L's 89x89x6.4 ALL AROUND OPENINGS AND CONNECTED TO C150x12 PURLINS. SEE DETAIL BELOW.



NOTE:
SEE MECHANICAL DRAWINGS FOR LOCATION, SIZE AND WEIGHT OF ALL ROOF MOUNTED OR SUPPORTED EQUIPMENT.

STANDARD DETAIL 5-B

NOT TO SCALE **STEEL DECK - OPENINGS THROUGH ROOF DECK**



DETAIL 1

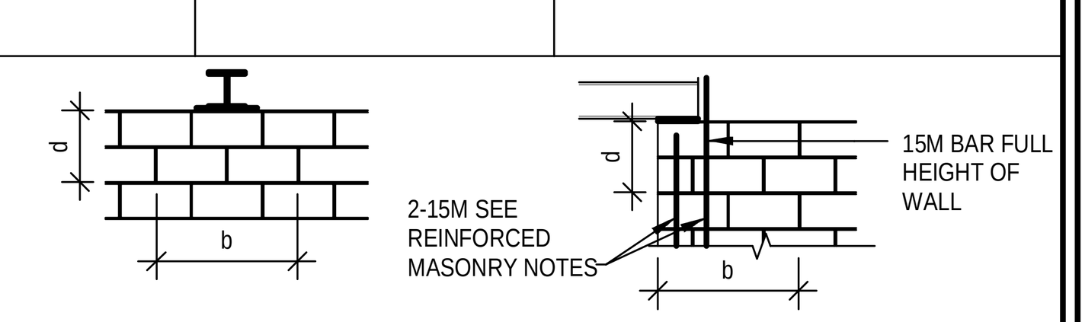
SCALE: NTS

BEARING PLATE SCHEDULE

MARK	SIZE	ANCHOR SIZE	HOLD DOWN BAR	REMARKS	MINIMUM GROUTING bxd
BP1	240x240x16	1-20mm DIA. x400LG.		DETAIL 1	800x400

NOTES:

1. ALL BEAMS AND JOISTS ARE TO BE PROVIDED WITH A BEARING PLATE. LINTELS ARE TO BE PROVIDED WITH A BEARING PLATE WHEN INDICATED ON THE DRAWINGS.
2. THE FIRST AND LAST BEARING PLATES ARE SHOWN AS THUS "BP#" ON PLAN AND ALL BEAMS AND JOISTS BETWEEN ARE TO BE PROVIDED THE SAME BEARING PLATE.
3. FILL BLOCK CORES SOLID BELOW BEARING PLATE 1'-4" LONG BY 2 COURSES DEEP UNLESS NOTED OTHERWISE.
4. CORES AT ALL HOLD DOWN BARS TO BE FILLED SOLID WITH 25MPa GROUT.
5. AT HOLD DOWN BAR SPLICE LOCATIONS, LAP BARS 2'-0" MIN.
6. AT ALL HOLD DOWN BARS, PROVIDE STANDARD HOOK AT U/S OF BEARING PLATES.

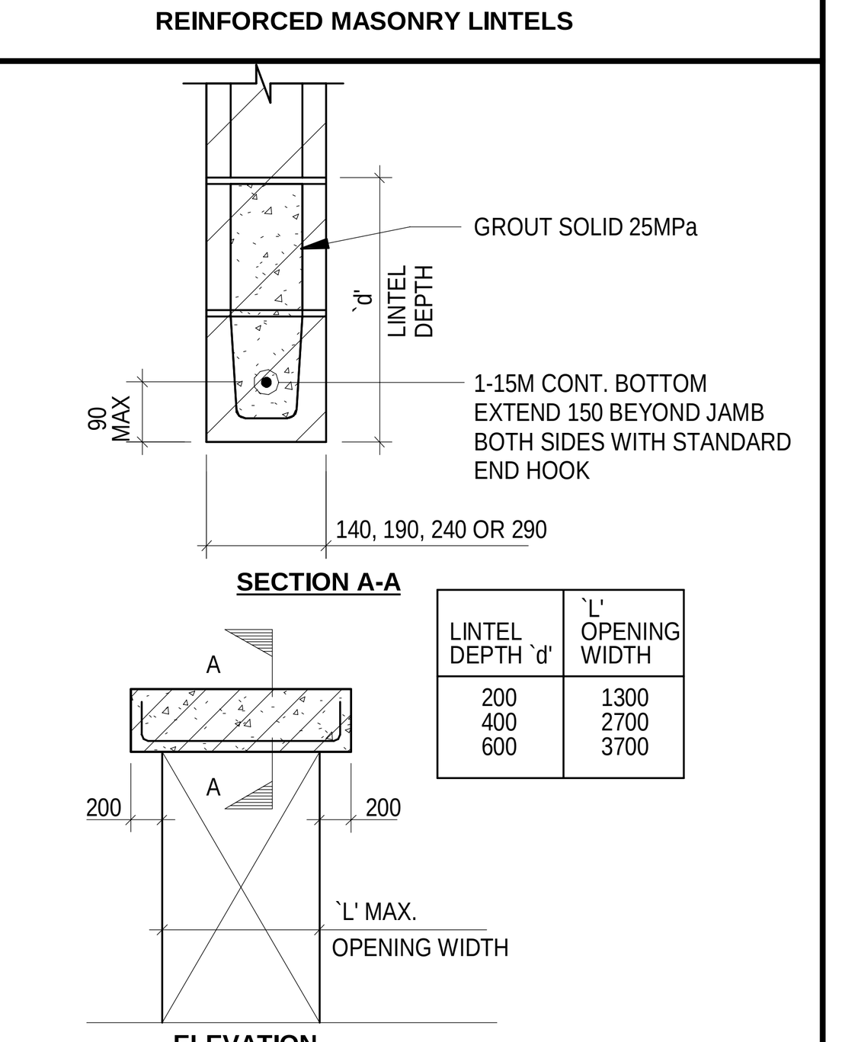


GENERAL PURPOSE LINTELS

STEEL LINTELS

MAXIMUM CLEAR SPAN	MATERIAL	MASONRY TYPE
1400mm	L-89 x 89 x 6.4	90 BRICK OR 90 BLOCK PER WYTHE
1800mm	L-127 x 89 x 6.4 LLV	
2200mm	L-127 x 89 x 7.9 LLV	
2800mm	L-152 x 102 x 9.5 LLV	
2000mm	2 L-89 x 64 x 6.4 LLV	140 BLOCK
1800mm	2 L-89 x 89 x 6.4	190 BLOCK
2400mm	2 L-127 x 89 x 6.4 LLV	
4200mm	S200x27 + PL 170x6	
1400mm	L-102 x 102 x 6.4 + L-127 x 102 x 6.4	240 BLOCK
3000mm	S150x19 + PL 220x6	
1200mm	S100x11 + PL 270x6	290 BLOCK
1900mm	S150x19 + PL 270x6	
3500mm	S200x27 + PL 270x6	

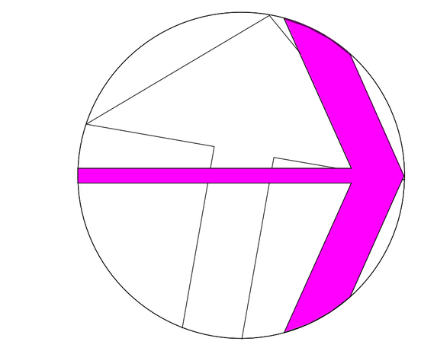
REINFORCED MASONRY LINTELS



LINTEL DEPTH `d'	`L' OPENING WIDTH
200	1300
400	2700
600	3700

CONDITIONS OF USE FOR GENERAL PURPOSE LINTEL SCHEDULE:

1. WHERE LINTEL MARKS ARE SHOWN THUS: "L#". REFER TO SCHEDULE "LINTELS FOR IDENTIFIED OPENINGS" ON THIS DRAWING.
2. A SUITABLE LINTEL IS TO BE SUPPLIED FOR ALL MASONRY OPENINGS.
3. THIS SCHEDULE IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
4. THIS SCHEDULE IS TO BE USED AS A GUIDE WITH REGARD TO WALL SIZE AND OPENING WIDTH FOR ANY LINTELS NOT SPECIFICALLY NOTED ON PLAN.
5. CONCRETE BLOCK UNITS ARE HOLLOW AND UNFILLED EXCEPT FOR FIRST COURSE ABOVE LINTEL WHICH SHALL BE FILLED SOLID UNLESS NOTED OTHERWISE.
6. DO NOT SHORE LINTELS DURING WALL CONSTRUCTION.
7. PROVIDE 200mm BEARING EACH END ON 400mm LONG BY 2 COURSES DEEP OF FILLED OR SOLID MASONRY UNLESS NOTED OTHERWISE ON DRAWING.
8. CONNECT LINTELS DIRECTLY TO STRUCTURE WHERE INSUFFICIENT BEARING IS AVAILABLE.
9. LINTEL SUPPORTING EXTERIOR WYTHE OF MASONRY IN EXTERIOR WALLS SHALL BE HOT DIP GALVANIZED.
10. ALL DOUBLE ANGLE LINTELS TO BE WELDED BACK-TO-BACK TOP AND BOTTOM WITH 5mm FILLET WELDS x 50mm LONG WELD AT 600mm o/c.
11. LINTELS IN CURVED WALLS ARE TO BE ROLLED TO REQUIRED RADIUS.
12. MASONRY CONTROL JOINTS ARE NOT TO BE LOCATED THROUGH LINTELS.
13. FULL HEAD JOINTS ARE REQUIRED FOR DEPTH OF LINTEL.



MTE
Engineers, Scientists, Surveyors
519-204-6510

NO.	DESCRIPTION	DATE
2	Issued for Tender/BP	2022-03-11
1	Owner's Review	2022-03-01

LICENSED PROFESSIONAL ENGINEER
K. S. BOLTON
100504554
March 10, 2022
PROVINCE OF ONTARIO

LAURELWOOD P.S. - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board

51 Ardelt Ave, Kitchener, ON N2C 2R5

OVERALL EXISTING ROOF FRAMING PLAN

SCALE: As indicated	PROJECT: 02394-301
DATE	
DRAWN: AMM	DRAWING: S2.1
CHECKED: KSB	
PRINT DATE	3/10/2022 1:50:33 PM
REVIT FILE	02394-300 - Laurelwood v2020.rvt

HVAC UNIT SCHEDULE

Item	Type	Sys.	Capacity tons	Capacity cfm	Heating Medium	Heating Capacity	Cooling Capacity	ESP in wc	Max. Position Outdoor Air	Size Bhp	Voltage	Electrical MCA	Electrical MOCP	Manufacturer & Model	Weight (lbs.)	Remarks
HVAC-1	PACKAGED ROOFTOP HVAC	VVT	12.5	4000	GAS	240	146	1.2	40%	2.46	575/3/60	29	35	CARRIER 48HCE14	2000±	C/W HIGH STAGE HEATING
HVAC-2	PACKAGED ROOFTOP HVAC	VVT	12.5	4880	GAS	240	146	1.2	40%	3.15	575/3/60	29	35	CARRIER 48HCE14	2000±	C/W HIGH STAGE HEATING
HVAC-3	PACKAGED ROOFTOP HVAC	VVT	12.5	4000	GAS	240	146	1.2	40%	2.46	575/3/60	29	35	CARRIER 48HCE14	2000±	C/W HIGH STAGE HEATING
HVAC-4	PACKAGED ROOFTOP HVAC	VVT	20	8530	GAS	525	256	1.2	40%	5.92	575/3/60	54	60	CARRIER 48A3T020	4900±	C/W HIGH STAGE HEATING
HVAC-5	PACKAGED ROOFTOP HVAC	VVT	20	8275	GAS	525	256	1.2	40%	5.68	575/3/60	54	60	CARRIER 48A3T020	4900±	C/W HIGH STAGE HEATING
HVAC-7	PACKAGED ROOFTOP HVAC	VVT	6	2000	GAS	125	72.0	1.2	40%	1.74	575/3/60	18	20	CARRIER 48HCE07	1200±	C/W MEDIUM STAGE HEATING

GENERAL HVAC UNIT NOTES:
1. ACCEPTABLE MANUFACTURERS: CARRIER, LENNOX, TRANE
2. UNITS HAVE 2 STAGE NATURAL GAS HEAT, 2 STAGE DX COOLING PLUS ECONOMIZER (1 STAGE ON SMALLER UNITS), BELT DRIVE FANS
3. PROVIDE STANDARD ROOF CURB ADAPTER, STAINLESS STEEL GAS HEAT EXCHANGER, CONDENSER COIL GUARD, FLUE GAS EXTENSION, POWER EXHAUST, ECONOMIZER, ALL HOODS & INLET SCREENS, AND 2 SETS MERV 13 DISPOSABLE FILTERS, ELECTRICAL/MECHANICAL CONTROLS. PADLOCK LATCHES, AND PREMIUM EFFICIENCY MOTORS.
4. CONTROLS: SYSTEM CONTROLS BY BAS CONTRACTOR, PROVIDE INTEGRAL CONTROLLER MATCHED TO BAS MANUFACTURER.

ERV SCHEDULE

Item	Type	Supply Air CFM	Supply Air ESP w.g.	Supply Air Fan hp	Exhaust Air CFM	Exhaust Air ESP w.g.	Exhaust Air Fan hp	Exhaust Air Summer DB	Exhaust Air Summer WB	Exhaust Air Winter DB	Exhaust Air Winter WB	Air Temp Off Heat Exchanger Summer DB	Air Temp Off Heat Exchanger Summer WB	Air Temp Off Heat Exchanger Winter DB	Air Temp Off Heat Exchanger Winter WB	Electrical MCA	Electrical Voltage	Manufacturer	Model	Unit Weight lbs	Remarks
ERV-1	OUTDOOR ENERGY RECOVERY VENTILATOR	2000	0.375	1.5	3050	0.375	3.0	75.0	63.0	72.0	56.0	76.1	64.4	65.9	52.0	16.9	575/3/60	ALDES	PH40e	1800±	C/W 24" HIGH ROOF CURB, BOTTOM INLET & DISCHARGE, MOTORS RATED FOR VFD
ERV-2	OUTDOOR ENERGY RECOVERY VENTILATOR	1470	0.375	0.75	2270	0.375	1.5	75.0	63.0	72.0	56.0	75.9	64.2	66.9	52.6	11.3	575/3/60	ALDES	PH30e	1600±	C/W 24" HIGH ROOF CURB, BOTTOM INLET & DISCHARGE, MOTORS RATED FOR VFD

GENERAL ERV UNIT NOTES:
1. ACCEPTABLE MANUFACTURERS: ALDES, GREENHECK, RUSKIN, COOK
2. 24" HIGH INSULATED ROOF CURB, DEFROST CYCLE AND CONTROLS, FILTERS (MERV 13), MIXED AIR SECTION, AND PADLOCK LATCHES AND EXHAUST ONLY DEFROST CYCLE.
3. CONTROLS: SYSTEM CONTROLS BY BAS CONTRACTOR, PROVIDE INTEGRAL CONTROLLER MATCHED TO BAS MANUFACTURER.

HEATING VENTILATION UNIT SCHEDULE

*ESP IS EXTERNAL TO THE CABINET

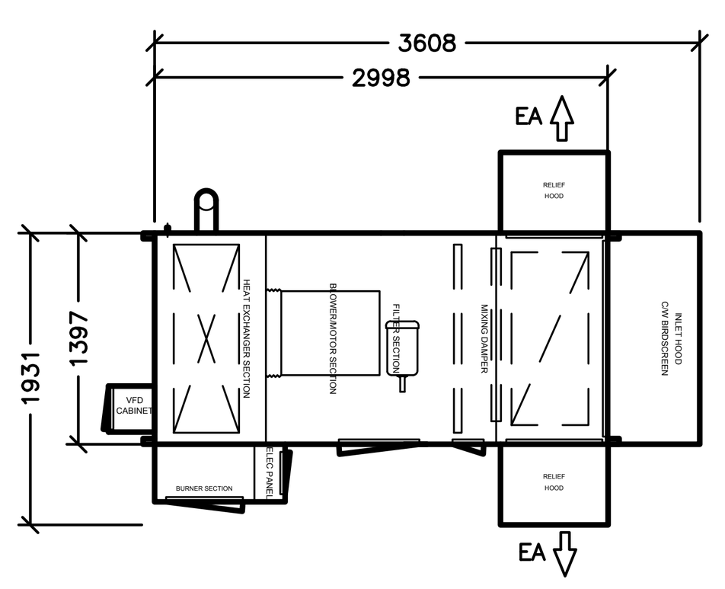
Item	Type	Service	Supply Air Fan Data Capacity cfm	Supply Air Fan Data Size hp	Supply Air Fan Data Drive	Supply Air Fan Data ESP in. wc	Voltage	Electrical MCA	Electrical MOCP	Heating Medium	Heating Capacity MBH	Manufacturer And Model	Weight lbs	Remarks
HV-1	OUTDOOR AIR HANDLING UNIT	GYMNASIUM	6655	5	VARIABLE FREQUENCY DRIVE	1.0	575/3/60	12	15	GAS	300	ENGINEERED AIR – DJE/40/0/MV	2200±	

GENERAL HV UNIT NOTES:
1. ACCEPTABLE MANUFACTURERS: AAON, BOUSQUET, EH PRICE, VALENT, AND DAIKIN
2. UNITS HAVE 2 STAGE NATURAL GAS HEAT
3. PROVIDE STANDARD ROOF CURB ADAPTER, STAINLESS STEEL GAS HEAT EXCHANGER, FLUE GAS EXTENSION, ECONOMIZER, ALL HOODS & INLET SCREENS, AND 2 SETS MERV 13 DISPOSABLE FILTERS, ELECTRICAL/MECHANICAL CONTROLS. PADLOCK LATCHES, AND PREMIUM EFFICIENCY MOTORS.
4. CONTROLS: SYSTEM CONTROLS BY BAS CONTRACTOR, PROVIDE INTEGRAL CONTROLLER MATCHED TO BAS MANUFACTURER.

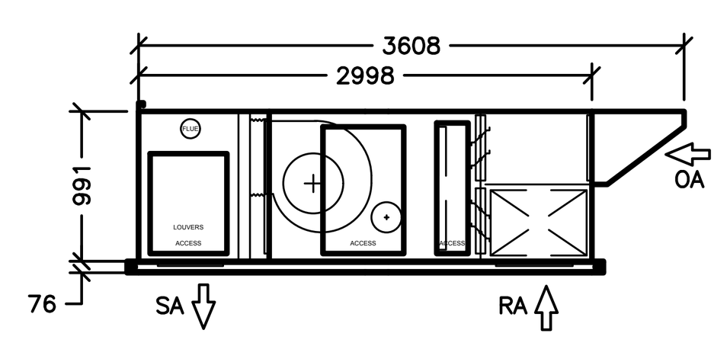
FAN SCHEDULE

Item	Type	Service	Exhaust Air Data Capacity cfm	Exhaust Air Data Size hp	Exhaust Air Data SP in. wc	Voltage	Manufacturer	Model	Remarks
* EF-2	ROOF MOUNTED EXHAUST	WASHROOM EXHAUST	800	1/3 HP	0.625	120/1/60	PENN BARRY	DX16S	C/W ADAPTER CURB AND BACKDRAFT DAMPER. DVR BY BAS CONTRACTOR
* EF-3	ROOF MOUNTED EXHAUST	WASHROOM EXHAUST	800	1/3 HP	0.625	120/1/60	PENN BARRY	DX16S	C/W ADAPTER CURB AND BACKDRAFT DAMPER. DVR BY BAS CONTRACTOR
* EF-4	ROOF MOUNTED EXHAUST	WASHROOM EXHAUST	250	Fhp	0.625	120/1/60	PENN BARRY	DX10R	C/W ADAPTER CURB AND BACKDRAFT DAMPER. DVR BY BAS CONTRACTOR

* ITEMIZED PRICE REFER TO SPECIFICATION



HV-1 PLAN



AHU-1 ELEVATION

HEATING VENTILATION UNIT DETAILS
SCALE: N.T.S

MECHANICAL LEGEND

Item	Description	Item	Description
	CUT EXISTING & CONNECT NEW PIPING		TEE CONNECTION
— — -V- — —	VENT PIPING		PIPE DOWN
——G——	NATURAL GAS PIPING		PIPE UP
——HPG——	HIGH PRESSURE NATURAL GAS PIPING		FLEXIBLE CONNECTION
PRV	PRESSURE REDUCING VALVE		REDUCER/INCREASER
G T	THERMOSTAT (WITH OR WITHOUT GUARD)		UNION
G C	CARBON DIOXIDE (CO2) SENSOR (WITH OR WITHOUT GUARD)		STRAINER
	SUPPLY AIR DUCT		SCREWED OR WELDED PIPE CAP
	RETURN/EXHAUST AIR DUCT		PLUG VALVE
	ACOUSTIC DUCT LINING		BALL VALVE
BD	BALANCING DAMPER		RISER VALVE
OBD	OPPOSED BLADE DAMPER	——EX——	EXISTING DUCT (SIZE AS INDICATED)
M	MOTORIZED DAMPER (OPPOSED BLADE)	AFF	ABOVE FINISHED FLOOR
FD	FIRE DAMPER	AFR	ABOVE FINISHED ROOF
Type Size Cap.	DIFFUSER/GRILLE SIZE (imp), TYPE & CAPACITY (cfm)	FSD	COMBINATION FIRE/SMOKE DAMPER
——SP——	SPRINKLER PIPING	SD	SMOKE DAMPER

GENERAL NOTES

- ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PREPARED SPECIFICATION.
- ALL PIPING, DUCTWORK, AND EQUIPMENT IS TO BE RESTRAINED TO MEET SEISMIC CODE REQUIREMENTS. SUPPLY AND INSTALL ALL SEISMIC RESTRAINT MATERIALS TO MANUFACTURER'S WRITTEN INSTRUCTIONS. REFER TO SPECIFICATION.
- UPON COMPLETION OF THE PROJECT OR UPON COMPLETION OF EACH INDIVIDUAL PHASE OF THE PROJECT THE CONTRACTORS SHALL PROVIDE THE FOLLOWING CERTIFICATES BEFORE CONFORMANCE LETTERS ARE ISSUED BY THE CONSULTANT:
  - COPY OF MANDATORY TSSA/CSA-B149 GAS PRESSURE TEST TAG
  - NFPA-13 SPRINKLER CONTRACTOR'S MATERIAL & TEST CERTIFICATE
  - FIRE PROTECTION ENGINEER'S INSPECTION/CONFORMANCE LETTER

  ALL CERTIFICATES ARE TO BE SUBMITTED TOGETHER IN A SINGLE PACKAGE.

DEI Consulting Engineers
MECHANICAL | ELECTRICAL | AQUATIC
55 Northland Road, Waterloo, ON N2V 1Y8
Phone: 519-725-3555
Website: deiassociates.ca
Project Number: 21449

LICENSED PROFESSIONAL ENGINEER
11 Mar 22
M.B. WHITE
100149074
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
2.	ISSUED FOR TENDER/BP	03.11.22
1.	TENDER READY	03.01.22

CERTIFICATE OF PRACTICE #4292

LAURELWOOD PS - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board
51 Ardelt Ave, Kitchener, ON N2C 2R5

SCHEDULES, LEGEND AND DETAIL

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

SCALE		PROJECT	21121A
DATE	2/9/2021		
DRAWN	AK	DRAWING	M1.1
CHECKED	SO		
PRINT DATE			
REVIT FILE			

FIRST FLOOR PART PLAN A — DEMOLITION
SCALE: 1:100

GENERAL DEMOLITION NOTES

- EXISTING MECHANICAL ITEMS NOT SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
- EXISTING MECHANICAL ITEMS SHOWN BUT NOT NOTED AS BEING REMOVED OR RENOVATED SHALL REMAIN AS PRESENTLY INSTALLED AND OPERATING.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ON SITE ALL LOCATIONS AND SIZES OF ALL SERVICES & EQUIPMENT PRIOR TO THE COMMENCEMENT OF WORK.
- ALL OPENINGS THAT RESULT FROM THE REMOVAL OF EQUIPMENT OR SERVICES SHALL BE NEATLY PATCHED WITH SUITABLE NEW MATERIALS TO SUIT EXISTING CONSTRUCTION.
- PLUMBING VENTS ARE NOT INDICATED OR IDENTIFIED. REMOVE ALL REDUNDANT VENTS WHILE MAINTAINING INTEGRITY OF EXISTING SYSTEMS TO REMAIN.
- REMOVAL OF EXISTING PIPING, OR DUCT SYSTEMS INCLUDES REMOVAL OF ALL HANGERS, INSULATION, FITTINGS, ETC.
- MAINTAIN INTEGRITY OF EXISTING SYSTEMS THAT ARE TO REMAIN OR BE MODIFIED.
- INSTALL NEW SYSTEM OR SERVICES WHERE REQUIRED TO MAINTAIN SYSTEM OPERATION PRIOR TO DEMOLITION OF EXISTING SERVICES.
- THIS CONTRACTOR IS TO REMOVE & REPLACE CEILINGS AS REQUIRED FOR REMOVAL/REPLACEMENT OF SERVICES.

SPECIFIC DEMOLITION NOTES

1. EXISTING VVT DAMPER ACTUATOR AND CONTROL WIRING TO BE REMOVED COMPLETE.
2. EXISTING THERMOSTAT/SENSOR TO BE REMOVED COMPLETE. REPLACE WITH NEW DDC THERMOSTAT/SENSOR.
3. EXISTING SUPPLY AND RETURN DUCTWORK TO BE CUT ON RISER AND REMOVED UP TO EXISTING UNIT COMPLETE.
4. EXISTING REHEAT COIL TO BE REMOVED COMPLETE. INFILL AND RECONNECT EXISTING DUCTWORK.

DEI Consulting Engineers
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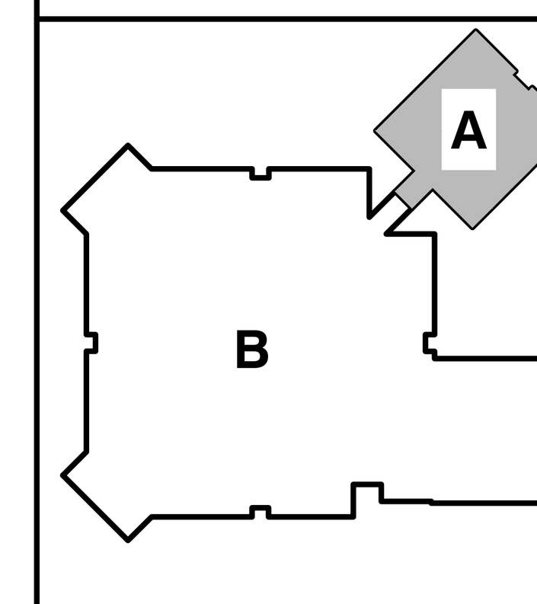
55 Northland Road, Waterloo, ON N2V 1Y8
Phone: 519-725-3555
Website: deiassociates.ca
Project Number: 21449



KEYPLAN

LICENSED PROFESSIONAL ENGINEER
11 Mar 22
M.B. WHITE
100149074
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
2.	ISSUED FOR TENDER/BP	03.11.22
1.	TENDER READY	03.01.22

CERTIFICATE OF PRACTICE #4292

LAURELWOOD PS - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

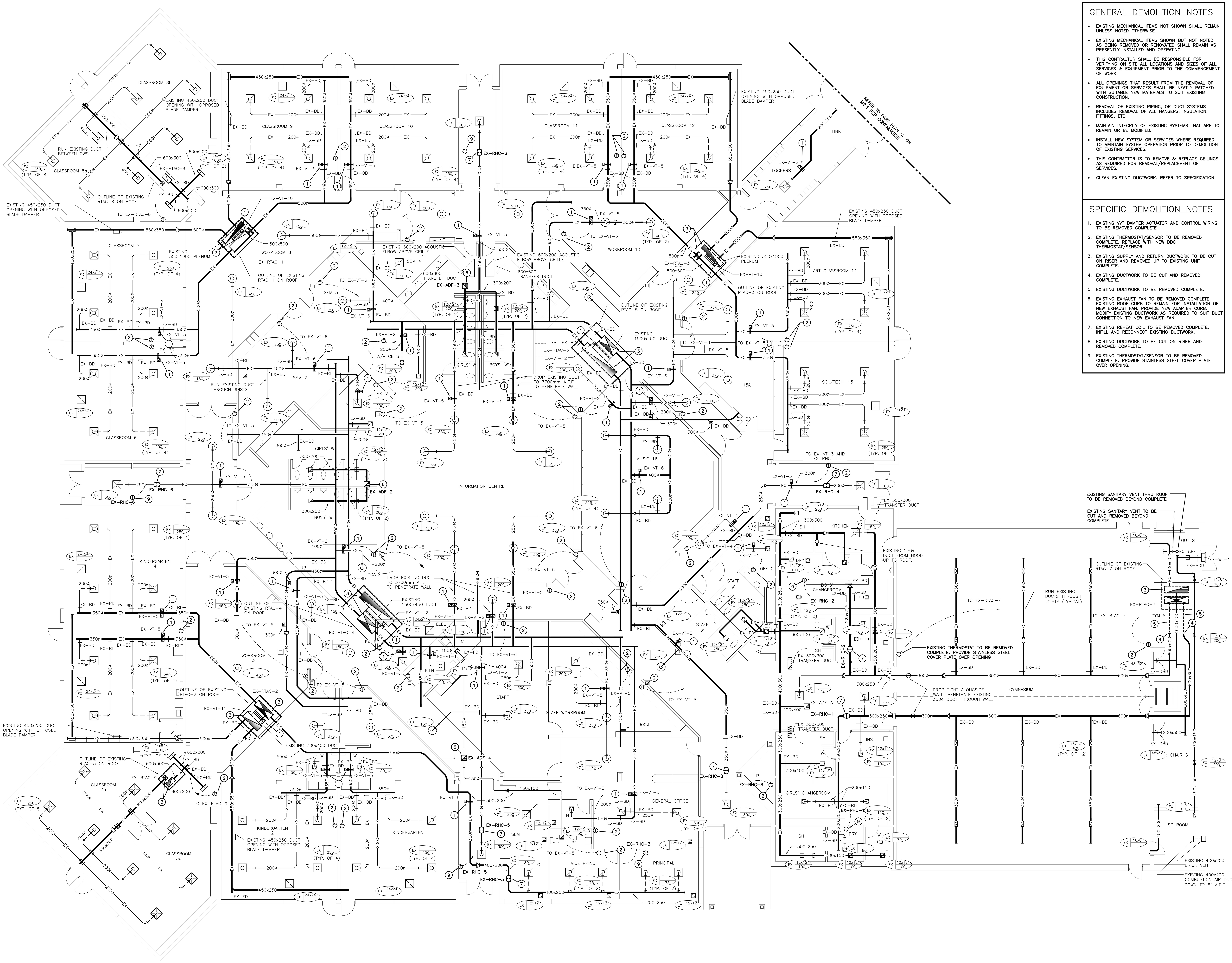
Waterloo Region District School Board

51 Ardelt Ave, Kitchener, ON N2C 2R5

FIRST FLOOR PART PLAN A - DEMOLITION

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

SCALE		PROJECT	21121A
DATE	2/9/2021		
DRAWN	AK	DRAWING	M2.1
CHECKED	SO		
PRINT DATE			
REVIT FILE			



FIRST FLOOR PART PLAN B – DEMOLITION
SCALE: 1:100

GENERAL DEMOLITION NOTES

- EXISTING MECHANICAL ITEMS NOT SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
- EXISTING MECHANICAL ITEMS SHOWN BUT NOT NOTED AS BEING REMOVED OR RENOVATED SHALL REMAIN AS PRESENTLY INSTALLED AND OPERATING.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ON SITE ALL LOCATIONS AND SIZES OF ALL SERVICES & EQUIPMENT PRIOR TO THE COMMENCEMENT OF WORK.
- ALL OPENINGS THAT RESULT FROM THE REMOVAL OF EQUIPMENT OR SERVICES SHALL BE NEATLY PATCHED WITH SUITABLE NEW MATERIALS TO SUIT EXISTING CONSTRUCTION.
- REMOVAL OF EXISTING PIPING, OR DUCT SYSTEMS INCLUDES REMOVAL OF ALL HANGERS, INSULATION, FITTINGS, ETC.
- MAINTAIN INTEGRITY OF EXISTING SYSTEMS THAT ARE TO REMAIN OR BE MODIFIED.
- INSTALL NEW SYSTEM OR SERVICES WHERE REQUIRED TO MAINTAIN SYSTEM OPERATION PRIOR TO DEMOLITION OF EXISTING SERVICES.
- THIS CONTRACTOR IS TO REMOVE & REPLACE CEILINGS AS REQUIRED FOR REMOVAL/REPLACEMENT OF SERVICES.
- CLEAN EXISTING DUCTWORK. REFER TO SPECIFICATION.

SPECIFIC DEMOLITION NOTES

1. EXISTING VVT DAMPER ACTUATOR AND CONTROL WIRING TO BE REMOVED COMPLETE
2. EXISTING THERMOSTAT/SENSOR TO BE REMOVED COMPLETE. REPLACE WITH NEW DDC THERMOSTAT/SENSOR
3. EXISTING SUPPLY AND RETURN DUCTWORK TO BE CUT ON RISER AND REMOVED UP TO EXISTING UNIT COMPLETE.
4. EXISTING DUCTWORK TO BE CUT AND REMOVED COMPLETE.
5. EXISTING DUCTWORK TO BE REMOVED COMPLETE.
6. EXISTING EXHAUST FAN TO BE REMOVED COMPLETE. EXISTING ROOF CURB TO REMAIN FOR INSTALLATION OF NEW EXHAUST FAN. PROVIDE NEW ADAPTER CURB. MODIFY EXISTING DUCTWORK AS REQUIRED TO SUIT DUCT CONNECTION TO NEW EXHAUST FAN.
7. EXISTING REHEAT COIL TO BE REMOVED COMPLETE. INFILL AND RECONNECT EXISTING DUCTWORK.
8. EXISTING DUCTWORK TO BE CUT ON RISER AND REMOVED COMPLETE.
9. EXISTING THERMOSTAT/SENSOR TO BE REMOVED COMPLETE. PROVIDE STAINLESS STEEL COVER PLATE OVER OPENING.

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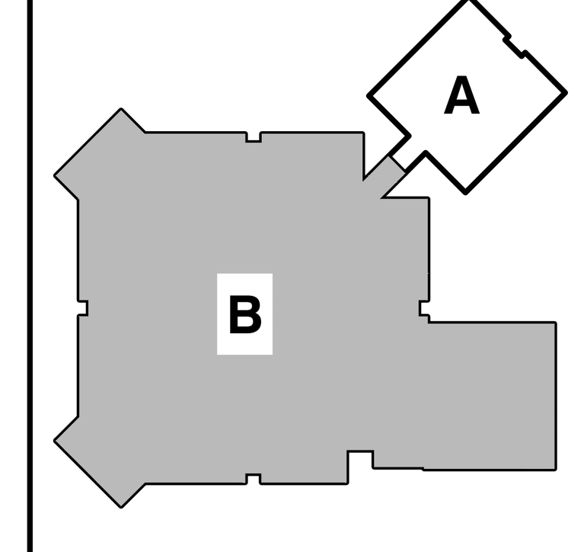
Project Number: 21449



KEYPLAN

LICENSED PROFESSIONAL ENGINEER
11 Mar 22
M.B. WHITE
100149074
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
2.	ISSUED FOR TENDER/BP	03.11.22
1.	TENDER READY	03.01.22

CERTIFICATE OF PRACTICE #4292

LAUREL WOOD PS - HVAC AND CONTROLS UPGRADE

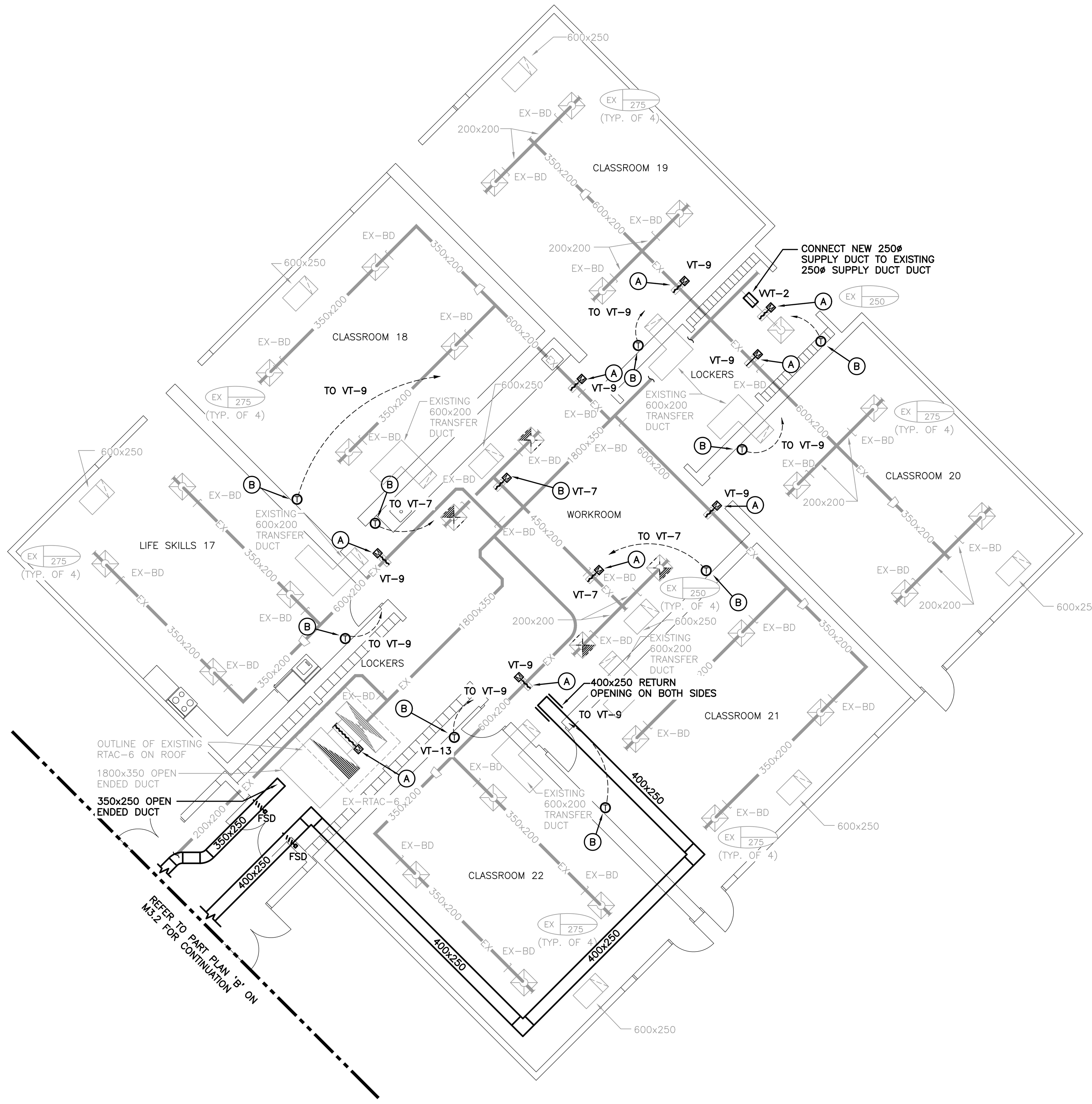
460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board
51 Ardelt Ave, Kitchener, ON N2C 2R5

FIRST FLOOR PART PLAN B - DEMOLITION

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

SCALE		PROJECT	21121A
DATE	2/9/2021		
DRAWN	AK	DRAWING	M2.2
CHECKED	SO		
PRINT DATE			
REVIT FILE			



FIRST FLOOR PART PLAN A — RENOVATIONS

SCALE: 1:100

GENERAL RENOVATION NOTES

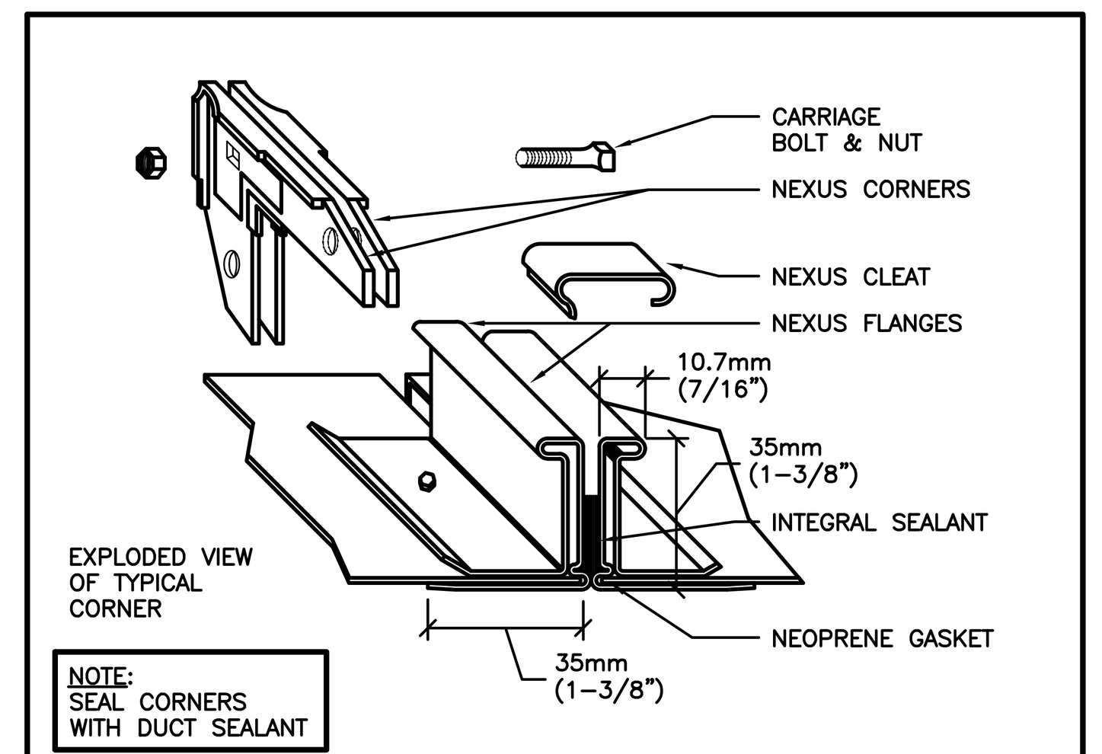
- PROVIDE VENTING FOR SANITARY FIXTURES TO OBC REQUIREMENTS. CO–ORDINATE VENTS THRU ROOF WITH GENERAL CONTRACTOR. MAINTAIN MINIMUM 3600MM (12'–0") BETWEEN SANITARY VENT AND ALL AIR INTAKE/EXHAUST OPENINGS.
- CO–ORDINATE ANY OWSJ BRIDGING RELOCATION OR REMOVAL/REPLACEMENT WITH THE GENERAL CONTRACTOR. PAY ALL COSTS REQUIRED TO MODIFY BRIDGING FOR INSTALLATION OF DUCTWORK.
- THIS CONTRACTOR SHALL PROVIDE TIEWRAP TO WRAP 50 BUNDLES OF EXISTING LOOSE WIRES IN THE EXISTING CORRIDOR CEILING ON EACH FLOOR.
- REFER TO DEMOLITION DRAWINGS FOR EXTENT OF EXISTING PIPING ABOVE CEILINGS TO REMAIN.
- NOT ALL EXISTING PIPING, DUCTWORK, WIRING, ETC. IS INDICATED. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO REVIEW ALL EXISTING CONDITIONS ON SITE AND MAKE SURE ALL PIPING, DUCTWORK, WIRING, ETC, CAN BE INSTALLED AS INDICATED PRIOR TO SUBMITTING TENDER PRICE.

SPECIFIC RENOVATION NOTES

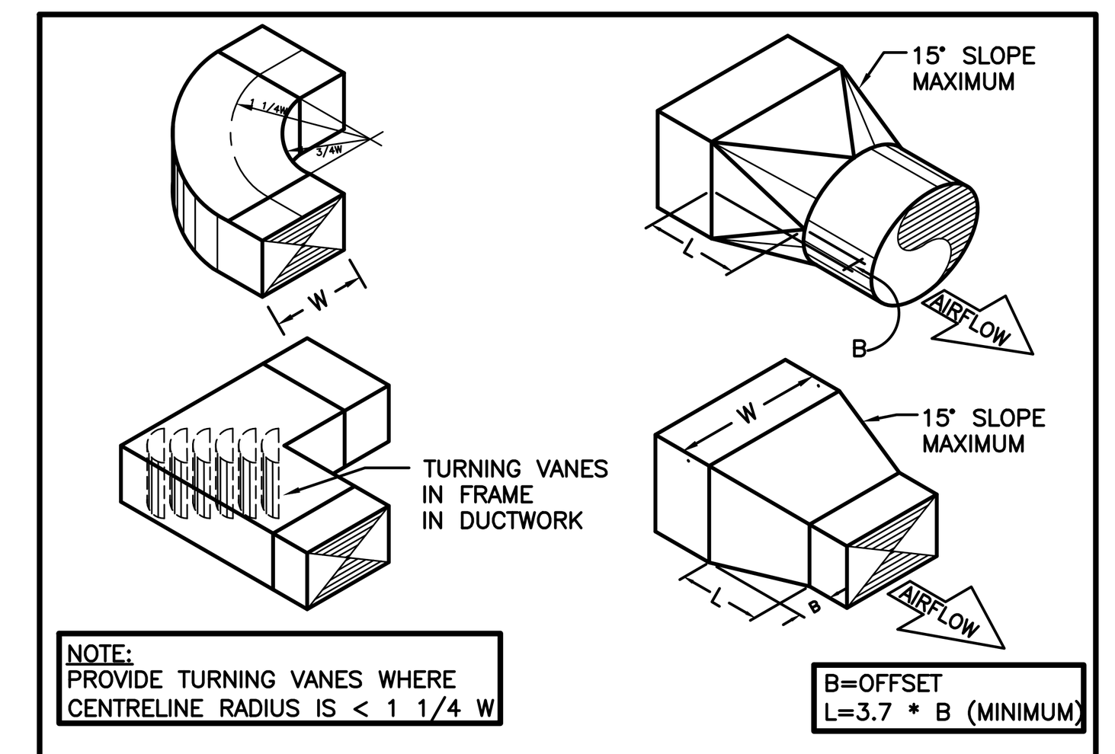
A. PROVIDE NEW MOTORIZED DAMPER ACTUATOR AND CONTROL WIRING.

B. NEW DDC THERMOSTAT/SENSOR. PROVIDE NEW CONTROL WIRING. FISH EXISTING WALL AS REQUIRED FOR NEW CONTROL WIRING.

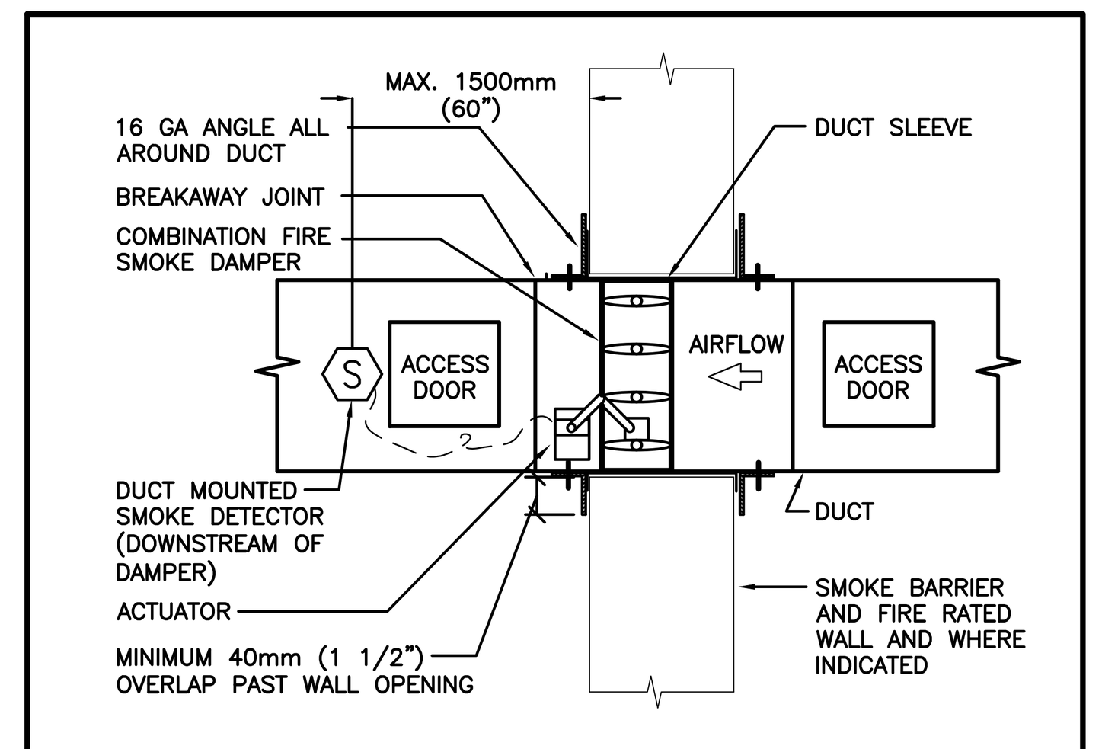
C. INSTALL CO^2 SENSOR IN RETURN DUCT.



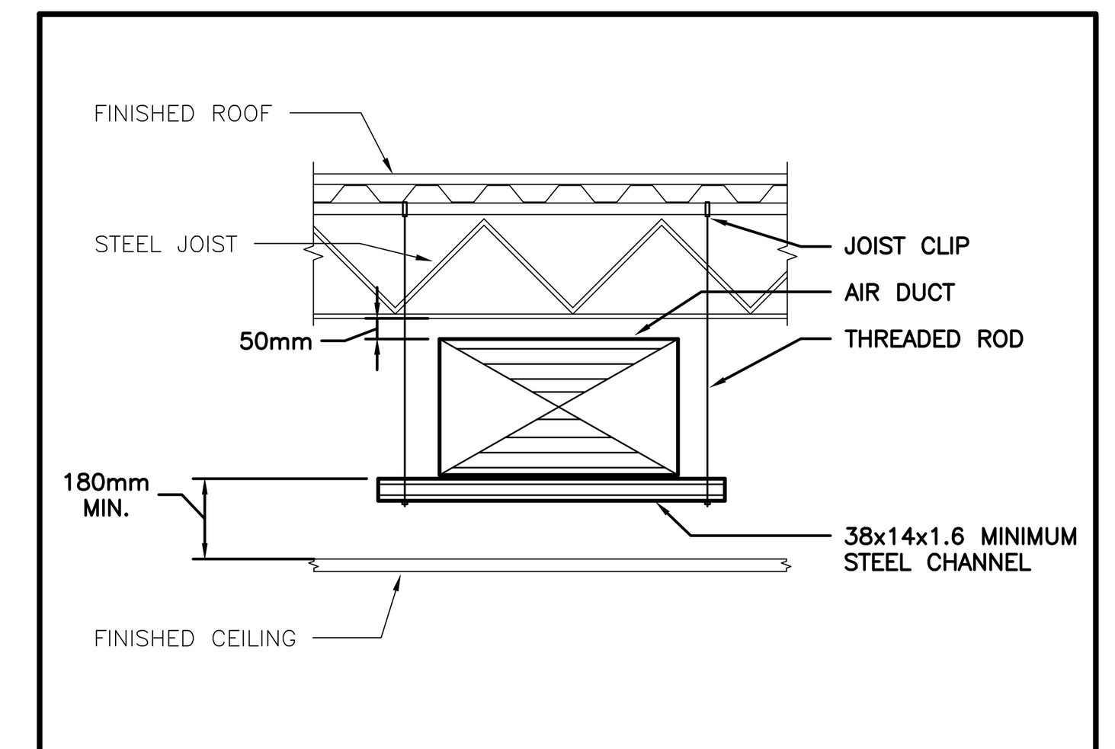
DUCT CONSTRUCTION



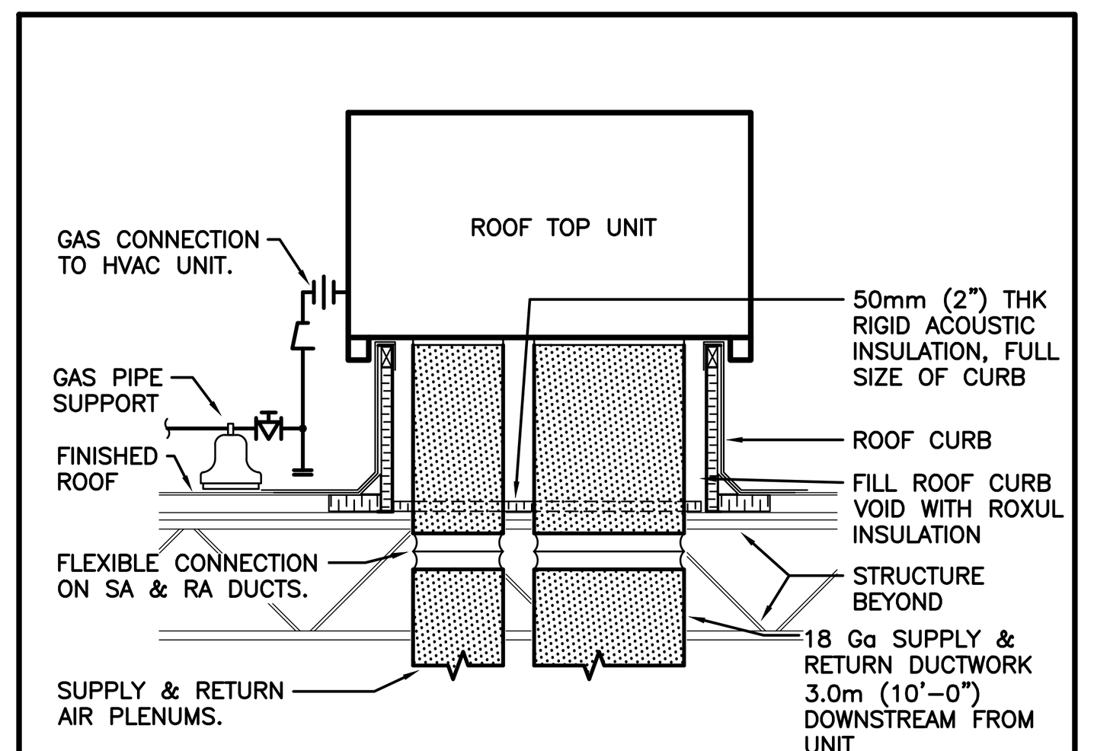
DUCT ELBOWS AND TRANSITIONS



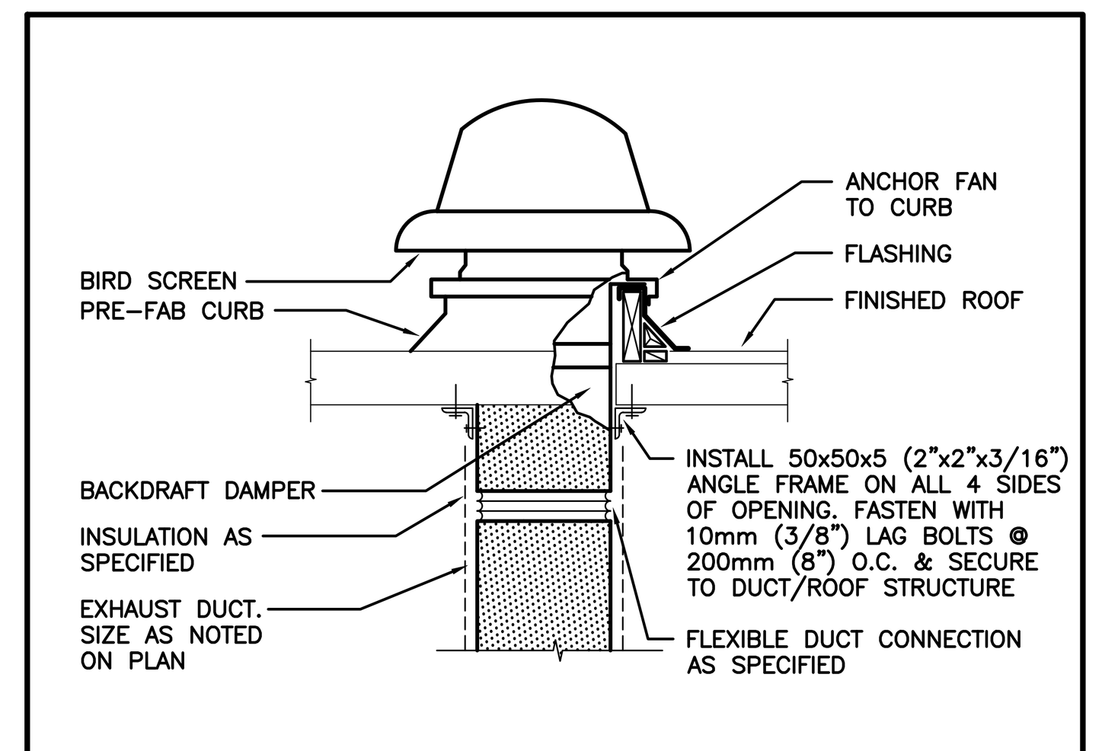
COMBINATION FIRE/SMOKE DAMPER INSTALLATION



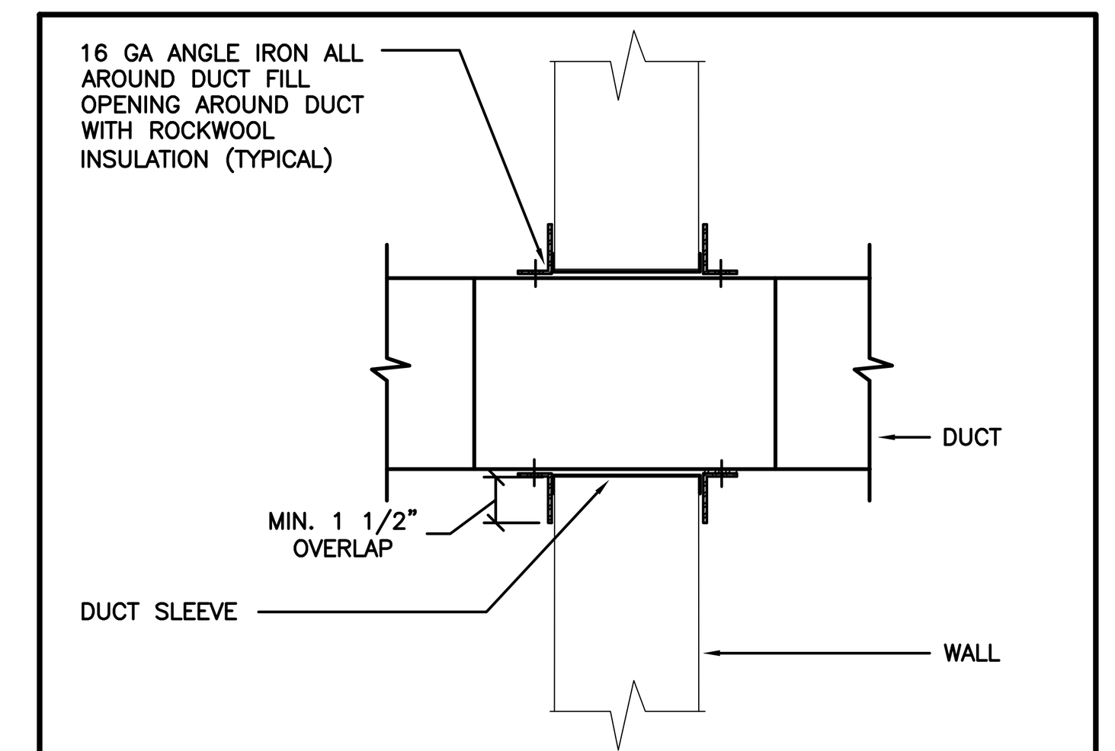
DUCT SUPPORT IN CEILING FROM STEEL FRAME



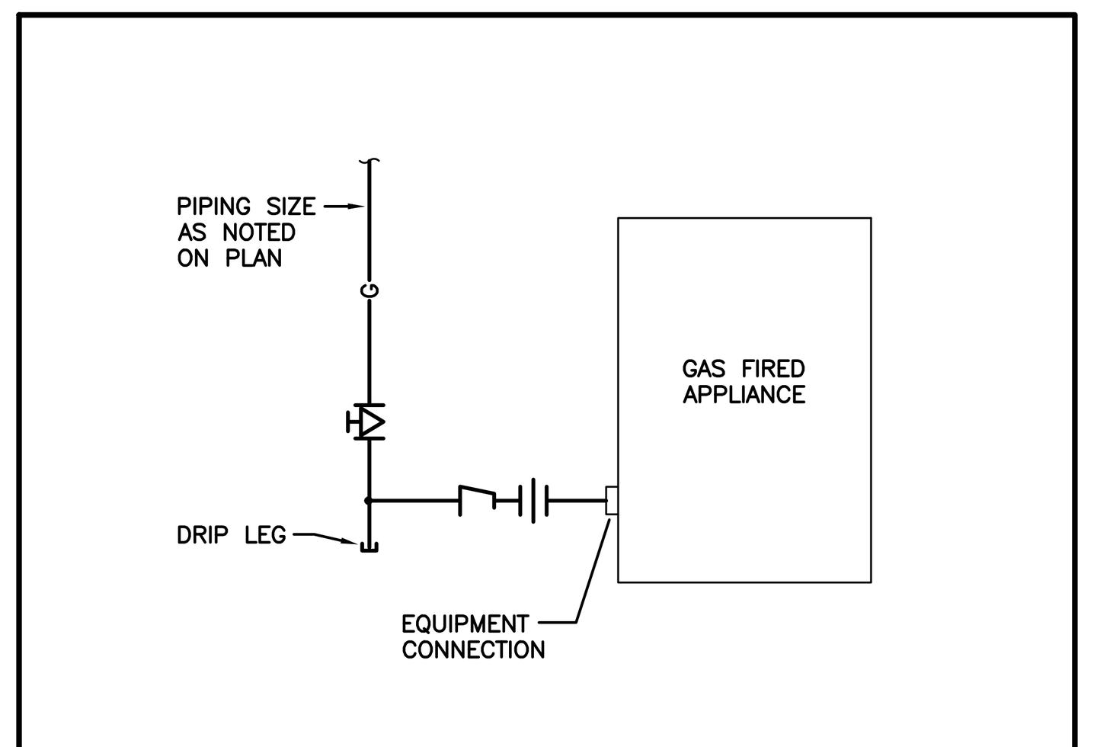
ROOFTOP HVAC UNIT



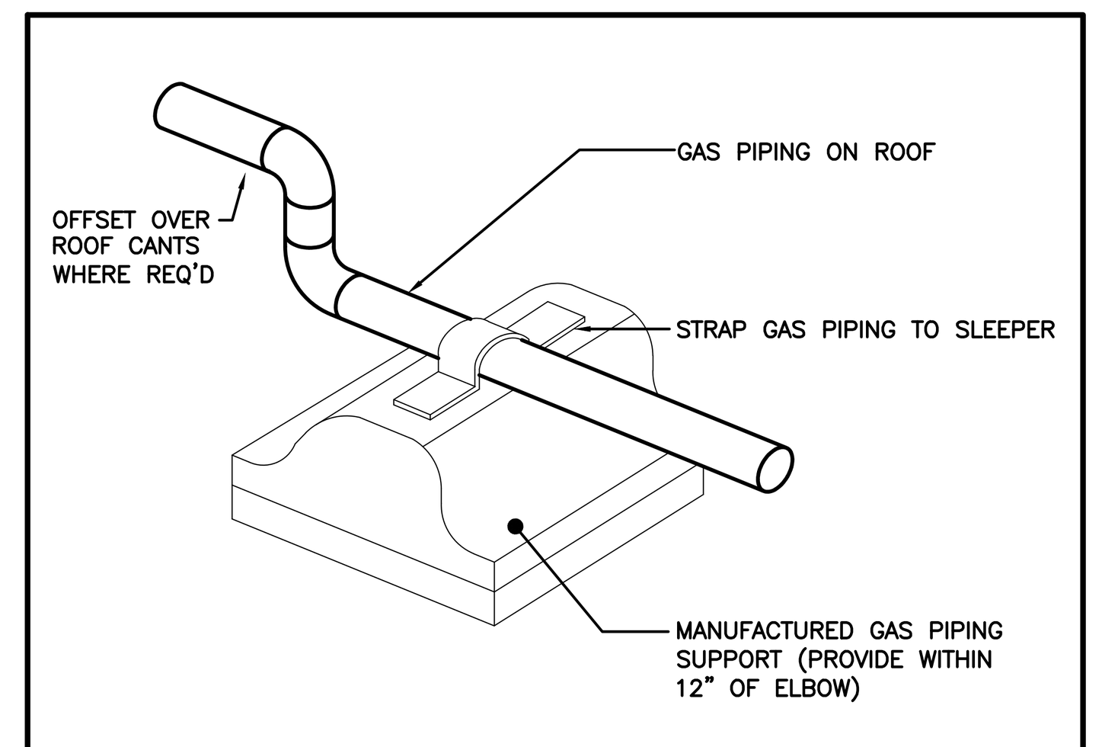
EXHAUST FAN ON ROOF



DUCT THRU NON RATED FIRE SEPARATION



GAS PIPING CONNECTION



GAS PIPE SUPPORT ON ROOF

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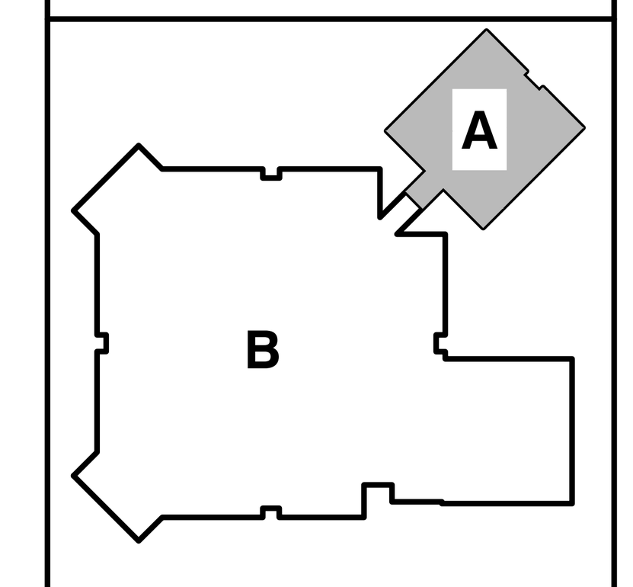
Phone: 519 725 3555
Website: deiassociates.ca
Project Number: 21449



KEYPLAN

LICENSED PROFESSIONAL ENGINEER
11 Mar 22
M.B. WHITE
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
2.	ISSUED FOR TENDER/BP	03.11.22
1.	TENDER READY	03.01.22

CERTIFICATE OF PRACTICE #4292

LAURELWOOD PS - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board

51 Ardelt Ave, Kitchener, ON N2C 2R5

FIRST FLOOR PART PLAN A - RENOVATION AND DETAILS

HOSSACK & ASSOCIATES ARCHITECTS

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DATE 2/9/2021	
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PRINT DATE	
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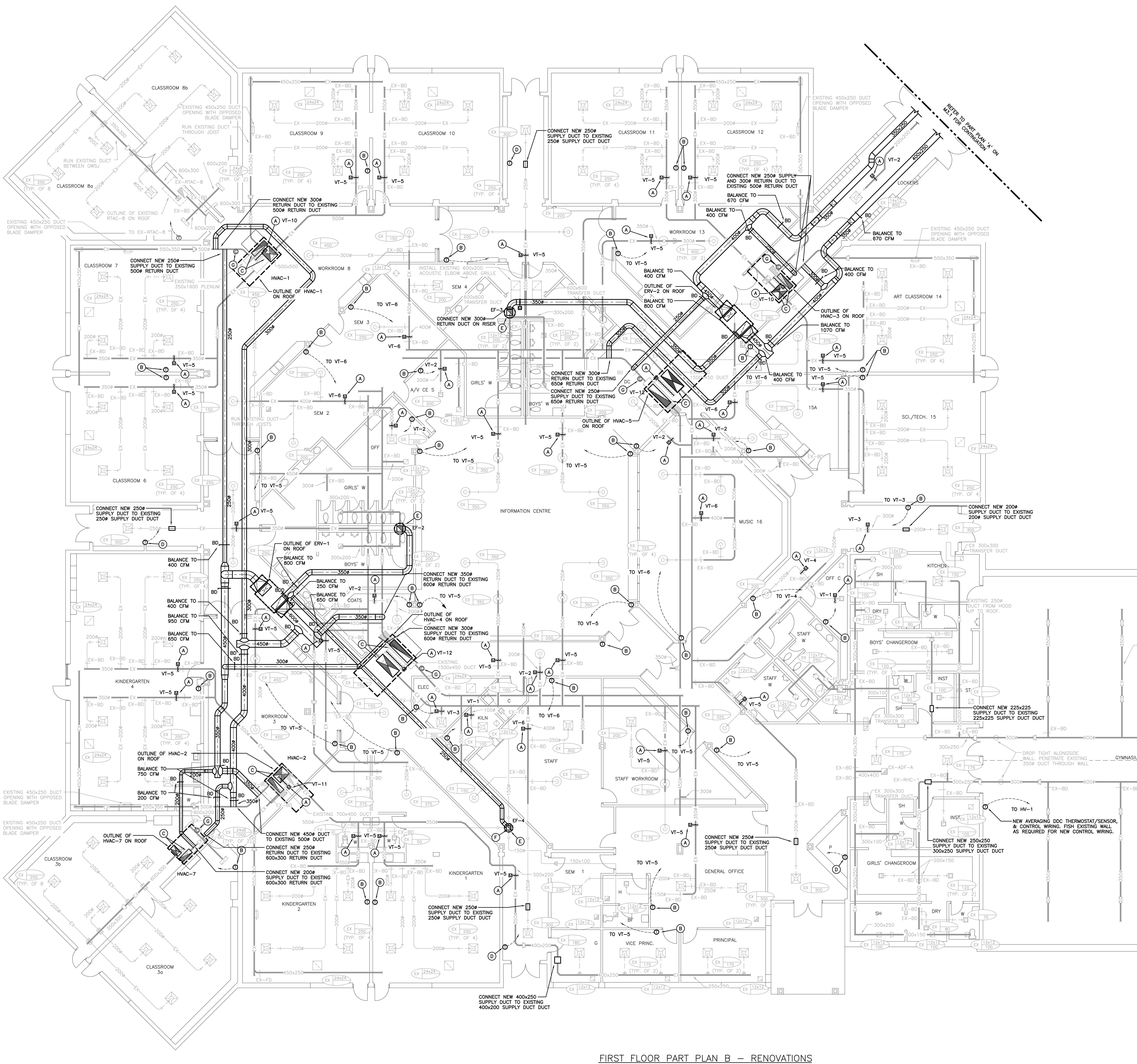

GENERAL RENOVATION NOTES

- PROVIDE VENTING FOR SANITARY FIXTURES TO OBC REQUIREMENTS. CO–ORDINATE VENTS THRU ROOF WITH GENERAL CONTRACTOR. MAINTAIN MINIMUM 3600MM (12'–0") BETWEEN SANITARY VENT AND ALL AIR INTAKE/EXHAUST OPENINGS.
- CO–ORDINATE ANY OWSJ BRIDGING RELOCATION OR REMOVAL/REPLACEMENT WITH THE GENERAL CONTRACTOR. PAY ALL COSTS REQUIRED TO MODIFY BRIDGING FOR INSTALLATION OF DUCTWORK.
- THIS CONTRACTOR SHALL PROVIDE TIEWRAP TO WRAP 50 BUNDLES OF EXISTING LOOSE WIRES IN THE EXISTING CORRIDOR CEILING ON EACH FLOOR.
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SPECIFIC RENOVATION NOTES

A. PROVIDE NEW MOTORIZED DAMPER ACTUATOR AND CONTROL WIRING.

B. NEW DDC THERMOSTAT/SENSOR. PROVIDE NEW CONTROL WIRING. FISH EXISTING WALL AS REQUIRED FOR NEW CONTROL WIRING.

C. CONNECT NEW SUPPLY AND RETURN DUCTWORK UP TO NEW ROOFTOP UNIT. TRANSITION ON RISER.

D. NEW DDC THERMOSTAT/SENSOR FOR NEW ELECTRIC HEATER. REFER TO ELECTRICAL DRAWINGS.

E. CONNECT NEW ACOUSTICALLY LINED EXHAUST DUCT TO EXISTING CONNECT TO NEW EXHAUST FAN ON ROOF. PROVIDE NEW ADAPTER CURB.

F. CONNECT NEW 250ø EXHAUST DUCT TO EXISTING 300x300 EXHAUST DUCT.

G. INSTALL NEW CO^2 SENSOR IN RETURN DUCT.

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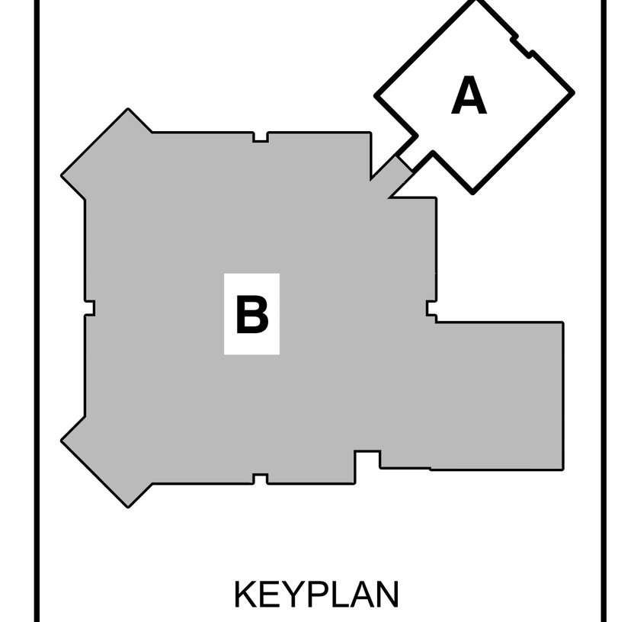

KEYPLAN

LICENSED PROFESSIONAL ENGINEER
11 Mar 22
M.B. WHITE
100149074
PROVINCE OF ONTARIO

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CERTIFICATE OF PRACTICE #4292

LAURELWOOD PS - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board
51 Ardelt Ave, Kitchener, ON N2C 2R5

FIRST FLOOR PART PLAN B - RENOVATION

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

SCALE	PROJECT
	21121A
DATE 2/9/2021	
DRAWN AK	DRAWING
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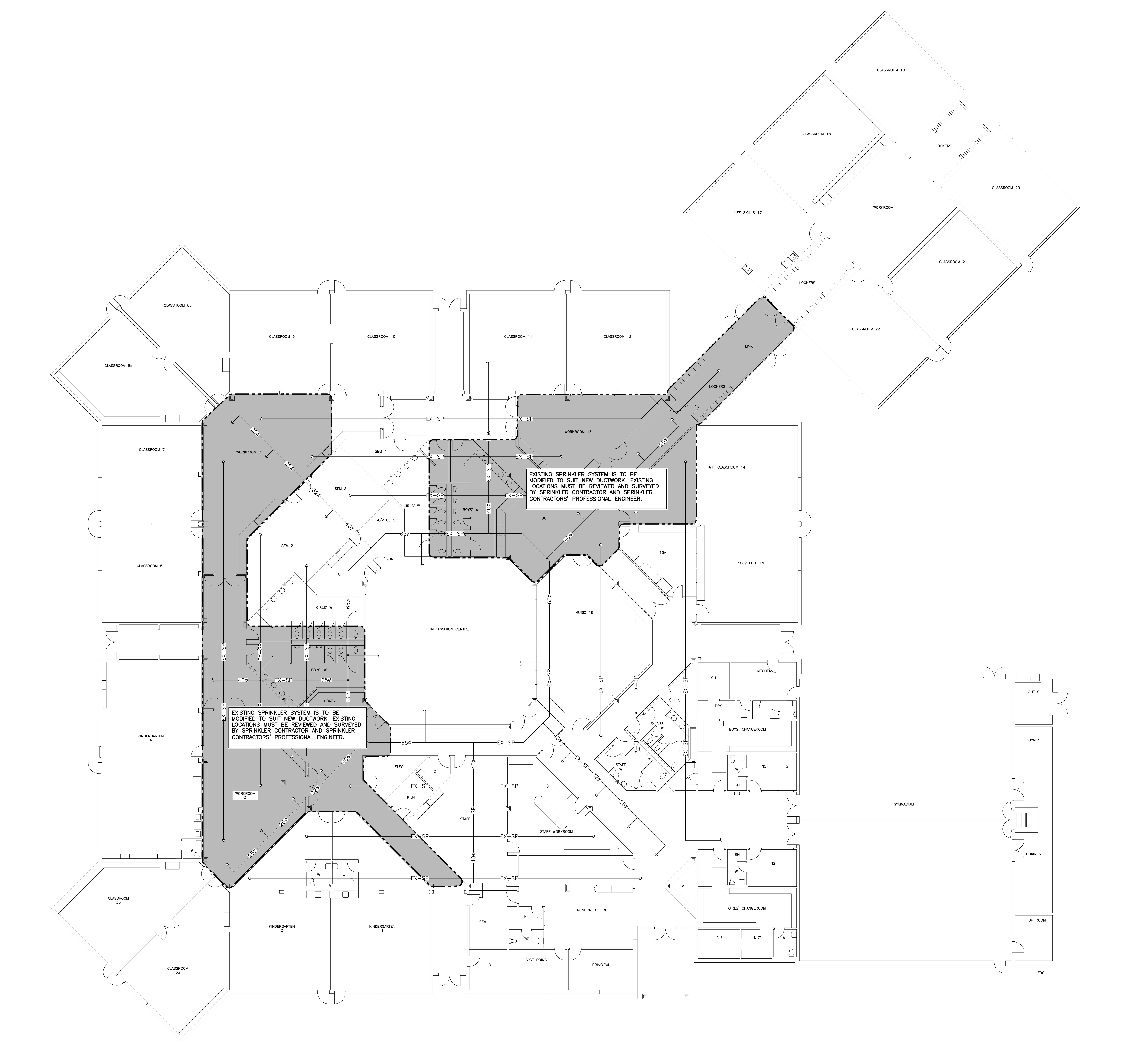
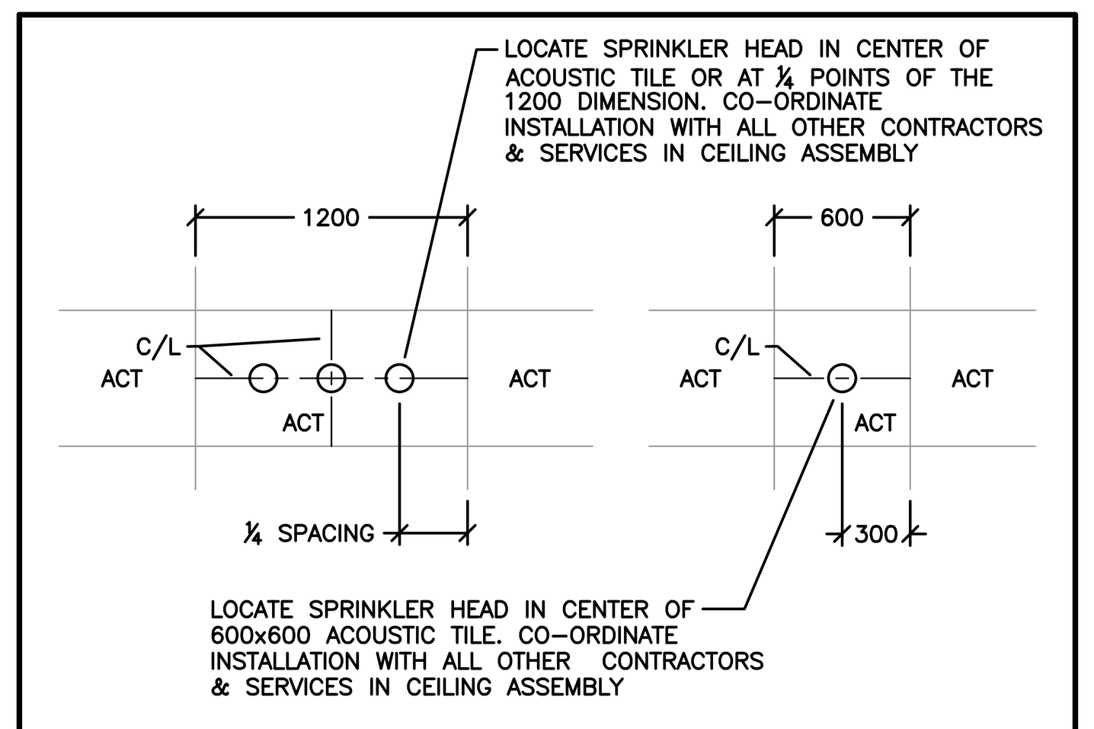


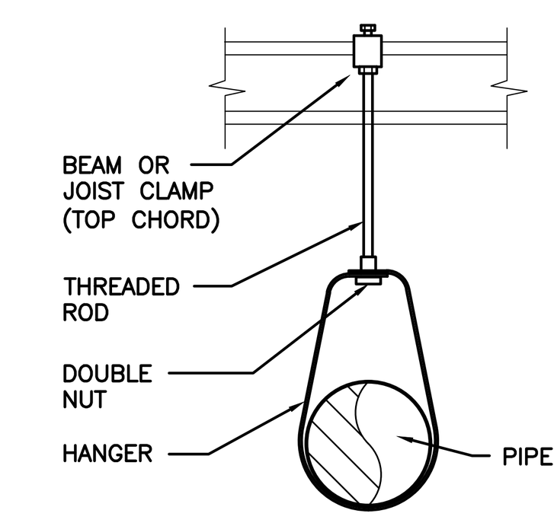
FIRST FLOOR PLAN – FIRE PROTECTION
SCALE: 1:150

GENERAL SPRINKLER NOTES

1. SUBMIT PRELIMINARY DESIGN & HYDRAULIC CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER, AND MANUFACTURERS' PRODUCT SHEETS FOR SHOP DRAWING SUBMISSION AS SPECIFIED PRIOR TO COMMENCING WORK.
2. ENSURE DESIGN MEETS OR EXCEEDS PRESENT NFPA 13 STANDARDS. ENSURE SPRINKLER SYSTEMS ARE INSTALLED TO NFPA 13 STANDARDS. UPON COMPLETION, SPRINKLER CONTRACTOR TO PROVIDE REPRODUCIBLE DRAWING (AT 1/8"=1'–0" SCALE) AND HYDRAULIC CALCULATIONS OF AS–BUILT CONDITION.
3. SPRINKLER CONTRACTOR'S 'PROFESSIONAL ENGINEER' TO PROVIDE O.B.C. AND NFPA REQUIRED INSPECTION AND CERTIFICATION.
4. REFER TO ARCHITECTURAL DRAWINGS FOR REFLECTED CEILING PLAN.
5. PROVIDE SPRINKLER HEAD TYPES AS FOLLOWS:
   - 5.1. PROVIDE UPRIGHT HEADS WITHIN 12" OF EXPOSED DECK THROUGHOUT EXPOSED STRUCTURE AREAS. PROVIDE HEAD GUARDS IN GYM, AREAS WHERE HEADS ARE BELOW 8'–0" & STORAGE ROOMS.
   - 5.2. PROVIDE CONCEALED PENDENT HEADS IN CEILINGS OF UNSUPERVISED AREAS (CORRIDORS, WASHROOMS). COVER PLATE FINISH SELECTED BY CONSULTANT.
   - 5.3. PROVIDE SEMI–RECESSED HEADS IN ALL OTHER CEILING AREAS (CLASSROOMS, OFFICES, SEMINAR RMs, etc.). HEAD & ESCUTCHEON FINISH SELECTED BY CONSULTANT.
6. SPRINKLER HEADS TO BE IN CENTRELINE OF CEILING TILE. MINIMUM 150mm (6") FROM EDGE.
7. FINAL NUMBER AND LOCATION OF SPRINKLER HEADS TO BE DETERMINED BY CONTRACTOR'S HYDRAULIC CALCULATIONS AND APPROVED DRAWINGS.
8. SPRINKLER PIPING TO BE COORDINATED WITH OTHER SERVICES PRIOR TO INSTALLATION
9. SPRINKLER CONTRACTOR TO VISIT SITE AND EVALUATE EXISTING CONDITIONS PRIOR TO TENDER CLOSING. INCLUDE ALL MODIFICATIONS IN TENDER PRICE.
10. EXISTING SPRINKLER SYSTEM TO BE RENOVATED/MODIFIED TO SUIT NEW LAYOUT. CONTRACTOR IS RESPONSIBLE TO SURVEY EXISTING SYSTEMS FOR CREATION OF SHOP DWGS.
11. PROVIDE SPRINKLER HEADS UNDER ALL DUCTWORK AND EQUIPMENT OVER 1200mm WIDE.
12. COMMISSIONING OF INTEGRATED TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEM.
   - 12.1. SPRINKLER CONTRACTOR TO PROVIDE SERVICES WITH THE FIRE COMMISSIONING AGENT (FCA) TO MEET THEIR REQUIREMENTS OF ADMINISTRATION, VERIFICATION, AND FINAL SIGNOFF TO THE LOCAL AUTHORITIES AND CONSULTANT. THE FCA IS BEING RETAINED BY THE ELECTRICAL CONTRACTOR, HOWEVER, THIS CONTRACTOR'S WORK TO SATISFY THE FCA REQUIREMENTS SHALL BE INCLUDED IN THE TENDER PRICE.
   - 12.2. CHECK/TEST: MOVEMENT OF ALL VALVES, CREATE WATER FLOW AT ALL DEVICES TO VERIFY DETECTION AT FIRE ALARM PANEL, OPERATION OF ALL PUMPS &/OR COMPRESSORS.
   - 12.3. PERFORM ALL WORK IN ACCORDANCE WITH NFPA 3.
   - 12.4. RETURN SPRINKLER/STANDPIPE SYSTEM TO NORMAL OPERATION ON COMPLETION OF TESTING



SPRINKLER HEAD IN ACOUSTIC TILE



SPRINKLER PIPE HANGER DETAIL

DEI Consulting Engineers
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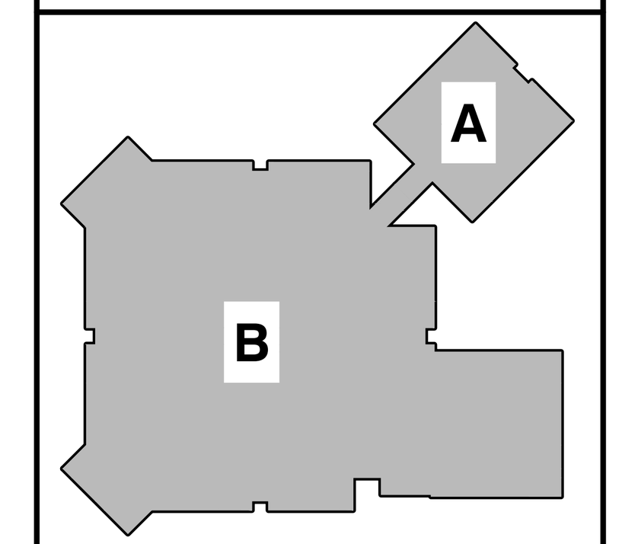

KEYPLAN

LICENSED PROFESSIONAL ENGINEER
11 Mar 22
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100149074
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DRAWINGS ARE NOT TO BE SCALED. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT; AND MUST REPORT ANY DISCREPANCIES TO THE CONSULTANTS BEFORE PROCEEDING WITH THE WORK. THE USE OF THIS DRAWING OR PART THEREOF IS FORBIDDEN WITHOUT THE WRITTEN APPROVAL OF THE CONSULTANTS.

CERTIFICATE OF PRACTICE #4292

LAURELWOOD PS - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board
51 Ardelt Ave, Kitchener, ON N2C 2R5

FIRST FLOOR FIRE PROTECTION

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

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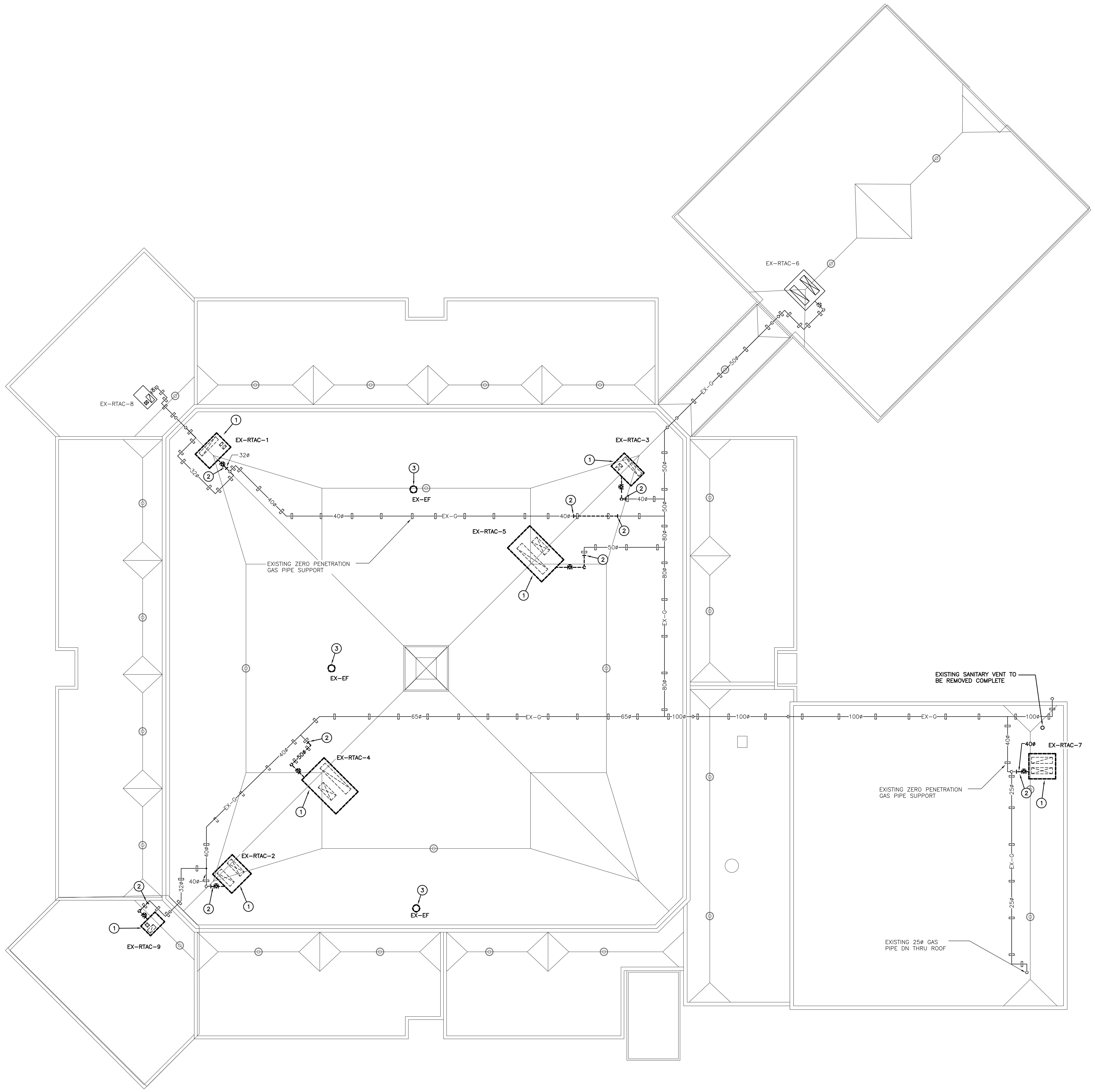

ROOF PLAN – DEMOLITION

SCALE: 1:150

GENERAL DEMOLITION NOTES

- EXISTING MECHANICAL ITEMS NOT SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
- EXISTING MECHANICAL ITEMS SHOWN BUT NOT NOTED AS BEING REMOVED OR RENOVATED SHALL REMAIN AS PRESENTLY INSTALLED AND OPERATING.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ON SITE ALL LOCATIONS AND SIZES OF ALL SERVICES & EQUIPMENT PRIOR TO THE COMMENCEMENT OF WORK.
- ALL OPENINGS THAT RESULT FROM THE REMOVAL OF EQUIPMENT OR SERVICES SHALL BE NEATLY PATCHED WITH SUITABLE NEW MATERIALS TO SUIT EXISTING CONSTRUCTION.
- REMOVAL OF EXISTING PIPING, OR DUCT SYSTEMS INCLUDES REMOVAL OF ALL HANGERS, INSULATION, FITTINGS, ETC.
- MAINTAIN INTEGRITY OF EXISTING SYSTEMS THAT ARE TO REMAIN OR BE MODIFIED.
- INSTALL NEW SYSTEM OR SERVICES WHERE REQUIRED TO MAINTAIN SYSTEM OPERATION PRIOR TO DEMOLITION OF EXISTING SERVICES.
- THIS CONTRACTOR IS TO REMOVE & REPLACE CEILINGS AS REQUIRED FOR REMOVAL/REPLACEMENT OF SERVICES.

SPECIFIC DEMOLITION NOTES

1. EXISTING HVAC UNIT TO BE DISCONNECTED AND REMOVED COMPLETE.
2. EXISTING GAS PIPING TO BE CUT AND REMOVED COMPLETE. REPLACE EXISTING ISOLATION VALVE WITH NEW.
3. EXISTING EXHAUST FAN TO BE REMOVED COMPLETE. EXISTING ROOF CURB TO REMAIN FOR INSTALLATION OF NEW EXHAUST FAN MODIFY EXISTING DUCTWORK AS REQUIRED TO SUIT DUCT CONNECTION TO NEW EXHAUST FAN.

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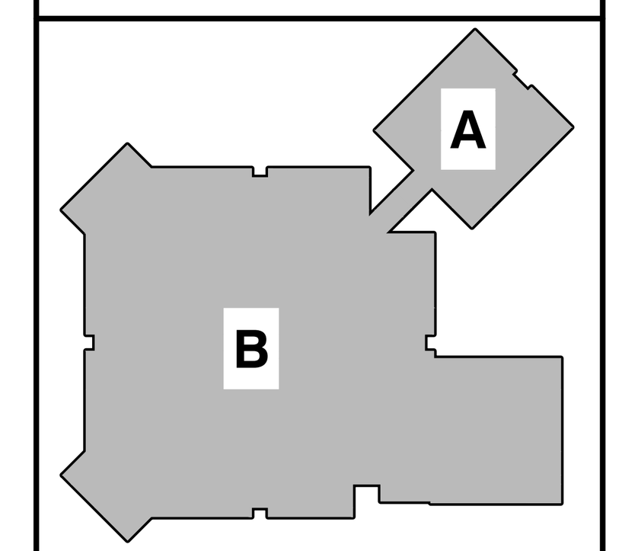

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Waterloo Region District School Board

51 Ardelt Ave, Kitchener, ON N2C 2R5

ROOF PLAN - DEMOLITION

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

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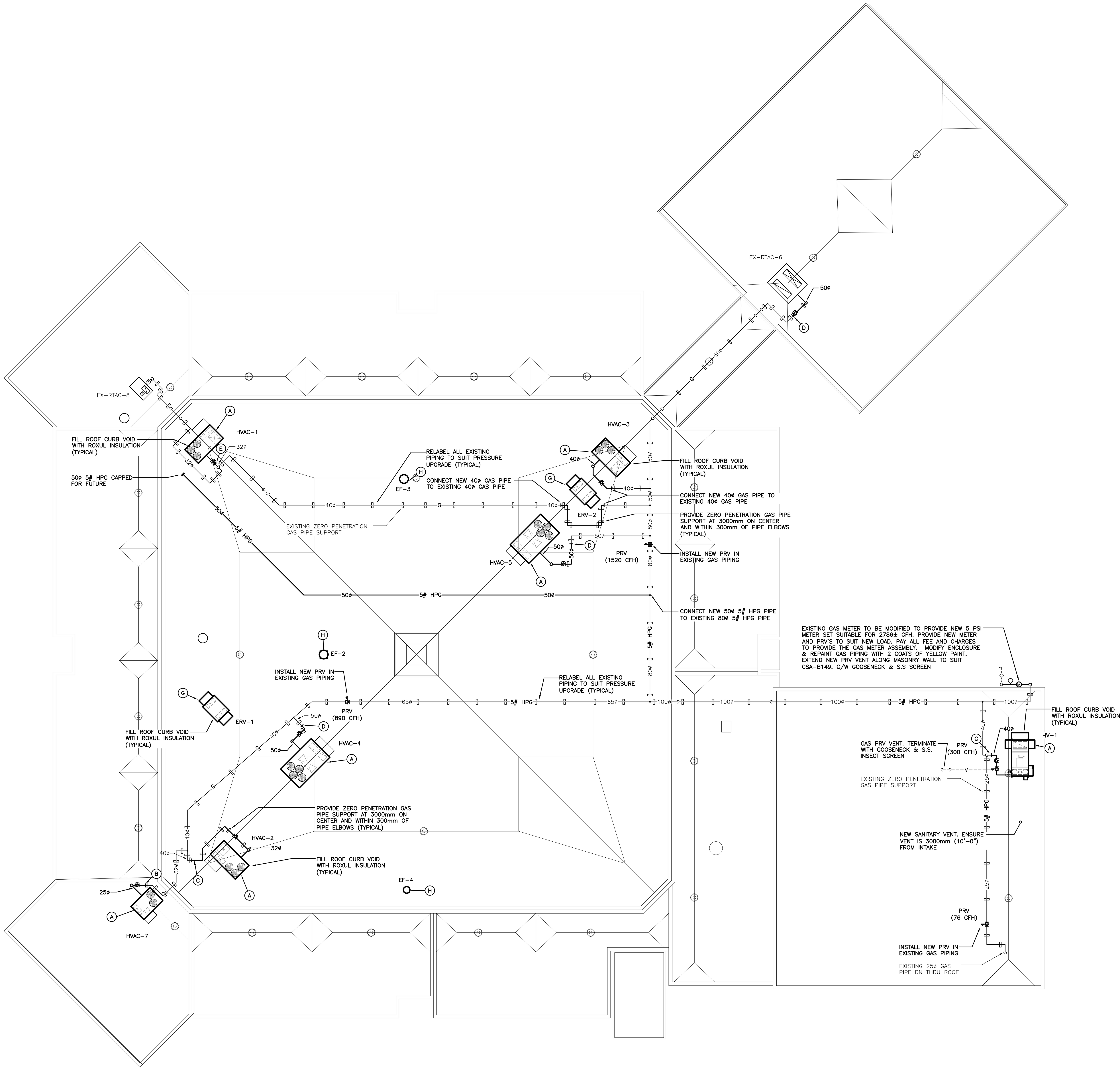

ROOF PLAN – RENOVATION

SCALE: 1:150

GENERAL RENOVATION NOTES

- MAINTAIN MINIMUM 3700MM (12'-0") LATERAL DISTANCE BETWEEN SANITARY VENTS AND ALL AIR INTAKE/EXHAUST OPENINGS.
- MAINTAIN MINIMUM 3000MM (10'-0") LATERAL DISTANCE BETWEEN PRV, FUEL FIRED APPLIANCE, AND/OR EXHAUST VENTS AND ALL AIR INTAKE/EXHAUST OPENINGS.
- ALL EQUIPMENT SHALL BE MINIMUM 3.0M FROM EDGE OF ROOF.

SPECIFIC RENOVATION NOTES

A. INSTALL NEW HVAC UNIT ON EXISTING ROOF CURB COMPLETE WITH NEW ADAPTER CURB.

B. CONNECT NEW 25ø GAS PIPING TO EXISTING 32ø GAS PIPING COMPLETE WITH NEW ISOLATION VALVE.

C. CONNECT NEW 32ø GAS PIPING TO EXISTING 40ø GAS PIPING COMPLETE WITH NEW ISOLATION VALVE.

D. CONNECT NEW 50ø GAS PIPING TO EXISTING 50ø GAS PIPING COMPLETE WITH NEW ISOLATION VALVE.

E. CONNECT NEW 32ø GAS PIPING TO EXISTING 32ø GAS PIPING COMPLETE WITH NEW ISOLATION VALVE.

F. CONNECT NEW 40ø 5# HPG PIPING TO EXISTING 40ø 5# HPG PIPING COMPLETE WITH NEW ISOLATION VALVE.

G. INSTALL NEW ERV UNIT ON NEW 600MM (24") ROOF CURB.

H. CONNECT NEW EXHAUST FAN TO EXISTING DUCTWORK. C/W ADAPTER CURB

NOTE:
ALL EXISTING GAS PIPING SHALL BE RE-LABELED WITH REVISED PRESSURE. ALL EXISTING LABELS TO BE REMOVED. PAINT ALL GAS PIPING WITH MINIMUM TWO (2) COATS OF YELLOW PAINT

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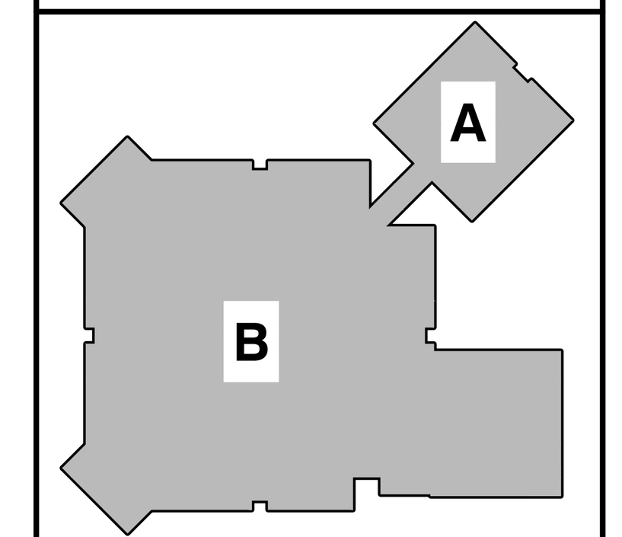

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ROOF PLAN - RENOVATION

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Tel (905) 607-8284 Fax (905) 607-8290

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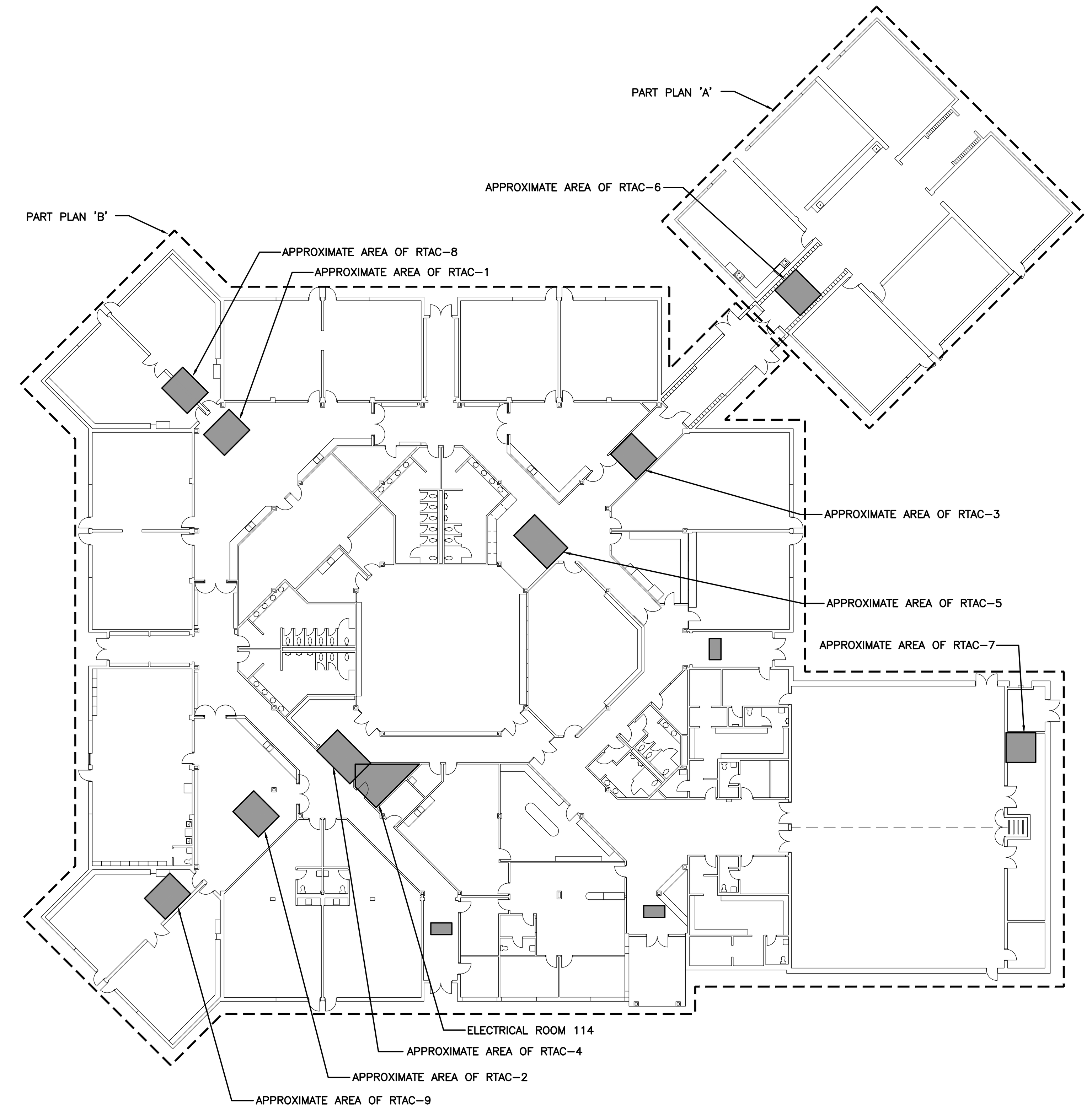
PORTABLE LAYOUT PART PLAN 'A' – RTU REPLACEMENT

SCALE: 1:100

REMOVE, STORE, AND RE–INSTALL LIGHTING TO SUIT NEW MECHANICAL DUCTWORK INSTALLATION. REFER TO MECHANICAL DRAWINGS.

LIGHTING IS TO BE RETROFIT. REFER TO LIGHT FIXTURE SCHEDULE. REMOVE EXISTING BALLASTS AND RE–WIRE TO SUIT 120V T8 LAMPS.



KEY PLAN

SCALE: NTS

GENERAL NOTES

- 'ER' INDICATES EXISTING ITEM TO REMAIN.
- 'R' INDICATES EXISTING ITEM IN RELOCATED POSITION.
- 'D' INDICATES EXISTING ITEM TO BE DELETED. UNLESS OTHERWISE NOTED DISCONNECT AND REMOVE NOTED DEVICE AND WIRING BACK TO SOURCE.
- ALL DEVICES SHOWN ARE NEW UNLESS OTHERWISE NOTED.
- EXISTING ELECTRICAL EQUIPMENT NOT SHOWN SHALL REMAIN UNLESS OTHERWISE NOTED.
- MAINTAIN SERVICE TO ALL EXISTING DEVICES TO REMAIN.
- REVISE PANEL DIRECTORIES TO SUIT CHANGES (TYPED).

SPECIFIC RENOVATION NOTES

1. INDICATES APPROXIMATE LOCATION OF ROOFTOP UNIT ABOVE. DISCONNECT EXISTING FEEDER TO SUIT. INSTALL NEW FEEDER IN CONJUNCTION WITH NOTED DETAIL AND DISTRIBUTION RISER DIAGRAM.
2. INDICATES 120V POWER CONNECTION TO FIRE SMOKE DAMPER. PROVIDE ADDITIONAL MONITORING MODULE AND DUAL VOLTAGE RELAY TO SUIT. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION FOR EXACT REQUIREMENTS.
3. INDICATED REHEAT COIL IS TO BE REMOVED COMPLETE. DISCONNECT AND MAINTAIN WIRING. EXTEND EXISTING 600V 3P WIRING TO SUIT NEW FAN FORCED HEATER.

LED LIGHT FIXTURE SCHEDULE

Item	Manufacturer/Catalog Number	Voltage	Lamp	Mounting	Description
R (3)	TUROLIGHT CAT. #MV–T8BPSP4/10.4W/40/F/DE EARTHRONICS MODEL LT814840BDECT	120V	LED T8	RETROFIT	REPLACEMENT 120VAC T8 LAMP

ALL UPGRADED FIXTURES MUST HAVE WRDSB SUPPLIED GREEN TYPE 'B' LED IDENTIFICATION STICKER ON SURFACE MOUNTED FIXTURES OR ON THE T–BAR CEILING ADJACENT TO T–BAR LAY–IN FIXTURES (CONTACT CALEB GINGRICH REGEHR).

COMPLETE RETROFIT IN COMPLIANCE WITH UL1598C.

HEATER SCHEDULE

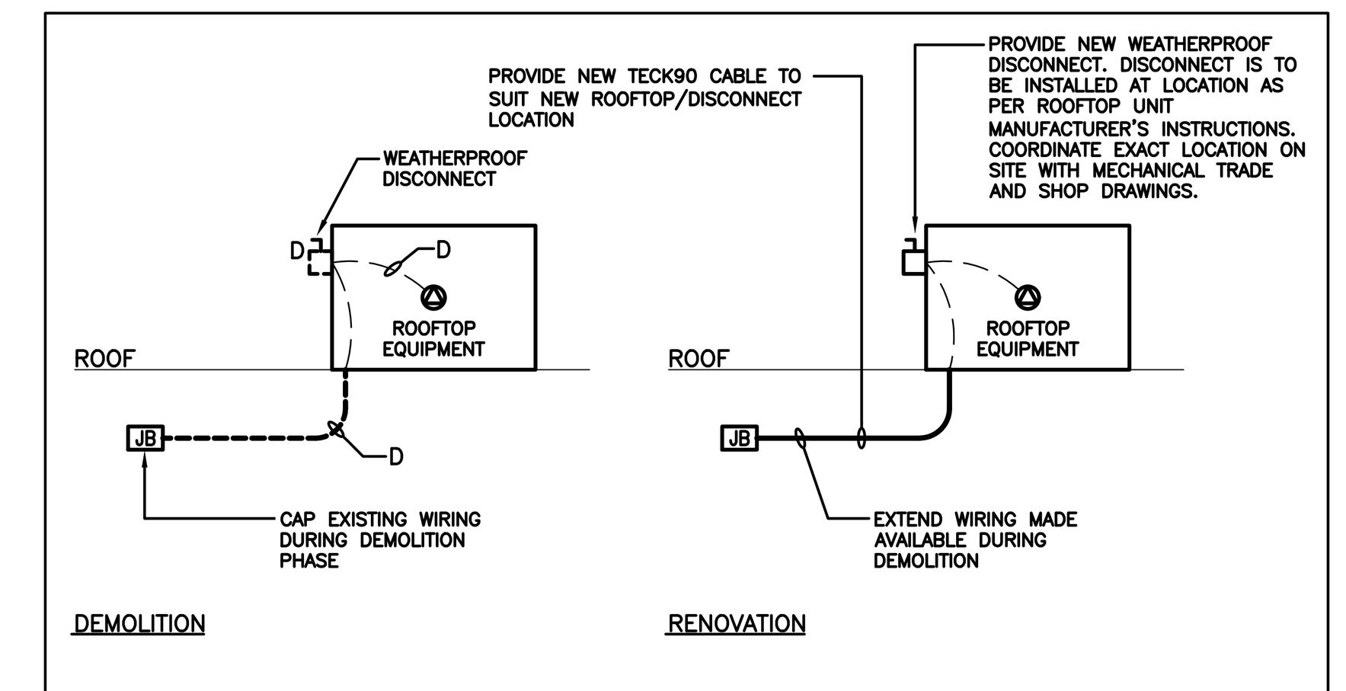
FOR INFORMATION REGARDING EQUAL MANUFACTURERS REFER TO SPECIFICATION.

Item	Manufacturer/Catalog Number
A	3000 WATT 600V VOLT THREE PHASE FAN FORCED HEATER C/W SURFACE MOUNTING BOX, STANDARD FACTORY FINISH TO SUIT ARCHITECT. PROVIDE 24V CONTROL RELAY FOR CONTROL FOR BAS THERMOSTAT. OUELLET CAT. #OAC03036–T–R

ELECTRICAL SYMBOLS

NOTE: ALL SYMBOLS MAY NOT BE USED

POWER		GENERAL	
(symbol)	PANEL AS INDICATED	ER	INDICATED EXISTING ITEM TO REMAIN
(symbol)	FUSED DISCONNECT	D	INDICATES EXISTING ITEM TO BE DELETED
(symbol)	UNFUSED DISCONNECT	R	INDICATES EXISTING ITEM TO BE RELOCATED/IN RELOCATED POSITION
JB	JUNCTION BOX	GF	GROUND FAULT
(symbol)	DIRECT CONNECTION	WP	WEATHERPROOF
STANDARD CIRCUITING LABELING		(X)	NOTE INDICATOR
A–1–1: POWER PANEL LABEL / CIRCUIT INDICATION / SWITCH LEG (IF APPLICABLE)		(X) hexagon	MECHANICAL ITEM NO.
		LIGHTING	
ELECTRIC HEAT		X	FLUORESCENT LIGHT FIXTURE TYPE AS INDICATED
(X)	FAN FORCED ELECTRIC HEATER (TYPE AS INDICATED)		



NOTES:

- CONTRACTOR SHALL INCLUDE IN PRICING TO INSTALL NEW TECK90 CU CONDUCTORS FROM LOCAL JUNCTION BOX THROUGH ROOF CONE AS DETAILED.
- INSTALLATION OF JUNCTION BOXES AND CONDUCTOR SPLICING ON ROOFTOP IS NOT AN ACCEPTABLE METHOD OF INSTALLATION. ALL SPLICING MUST BE COMPLETED WITH JUNCTION BOX ON ROOF DECK. PROVIDE UNISTRUT AND SUSPEND FROM ADEQUATE STRUCTURE.
- WEATHERPROOF DISCONNECT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED POSITIONING. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL SHOP DRAWINGS PRIOR TO ROUGH–IN.

A–ROOFTOP UNIT RE–FEED

SCALE: NTS

PANEL 'PP–1'

THE CONTRACTOR IS TO COORDINATE ROOM NAMES AND NUMBERS NOTED WITH THE FINAL ROOM INFORMATION ISSUED DURING CONSTRUCTION AND ADJUST DIRECTORIES TO SUIT.

VOLTAGE: 347/600 VOLTS
PHASE: 3P, 4W
MAINS: 400A
NEUTRAL BUS: FULL
MOUNTING: SURFACE
NOTES: C/W SPRINKLER HOOD SINGLE TUB

Load	Breaker	Ckt	Ckt	Breaker	Load
RTAC–1	35A	1	2	35A	RTAC–3
		3	4		
	3P	5	6	3P	
RTAC–6	15A	7	8	35A	RTAC–2
		9	10		
	3P	11	12	3P	
HV–7	15A	13	14	70A	RTAC–4
		15	16		
	3P	17	18	3P	
RTAC–5	70A	19	20	20A	WEST ADDITION
		21	22		
	3P	23	24	3P	
ELECTRIC HEAT	15A	25	26	15A	ELECTRIC HEAT
	2P	27	28	2P	
ELECTRIC HEAT	15A	29	30	15A	RHC
		31	32		
	3P	33	34	3P	
SPACE		35	36	15A	EAST ADDITION ROOFTOP
SPACE		37	38		
SPACE		39	40	3P	
UNKNOWN LOAD	15A	41	42	15A	UNKNOWN LOAD
SPACE		43	44	60A	ERV–1
SPACE		45	46		
SPACE		47	48	3P	
SPACE		49	50	60A	ERV–2
SPACE		51	52		
SPACE		53	54	3P	
SPACE		55	56		SPACE
SPACE		57	58		SPACE
SPACE		59	60		SPACE

NOTE: THE INDICATED PANEL ASSEMBLY MUST HAVE AN INTERRUPTING CAPACITY OF 25000 A. PROVIDE BY EITHER FULLY RATED BREAKERS OR INTEGRATED EQUIPMENT RATING WITH THE UPSTREAM BREAKER.

DISTRIBUTION RISER NOTES

1. REFER TO SPECIFICATION FOR INFORMATION REGARDING MOULDED CASE CIRCUIT BREAKERS.
2. ALL DISTRIBUTION EQUIPMENT ARE TO BE PROVIDED WITH WARNING LABELS CONFORMING TO THE ONTARIO ELECTRICAL SAFETY CODE RULE #2–306(1),(2)
3. INSTALL GROUND WIRE TO SUIT THE ELECTRICAL SAFETY CODE IN ALL CONDUIT.

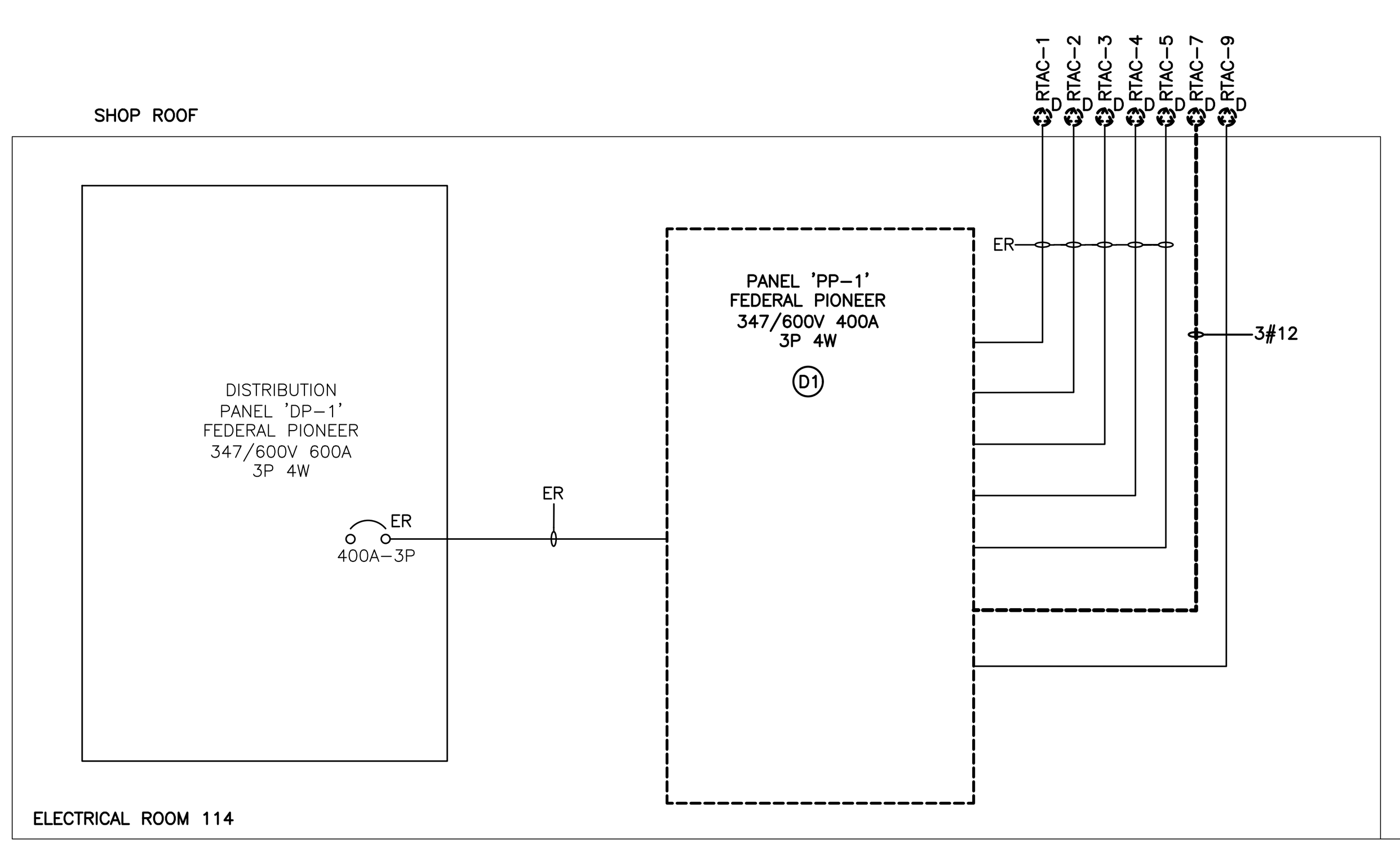
SPECIFIC DEMOLITION NOTES

D1 FEDERAL PIONEER PANEL TO BE REPLACED WITH NEW PANEL AS PER THE RENOVATION DRAWINGS. DISCONNECT FEEDER AND BRANCH CIRCUITS BUT MAINTAIN FOR RE–CONNECTION TO NEW PANEL.

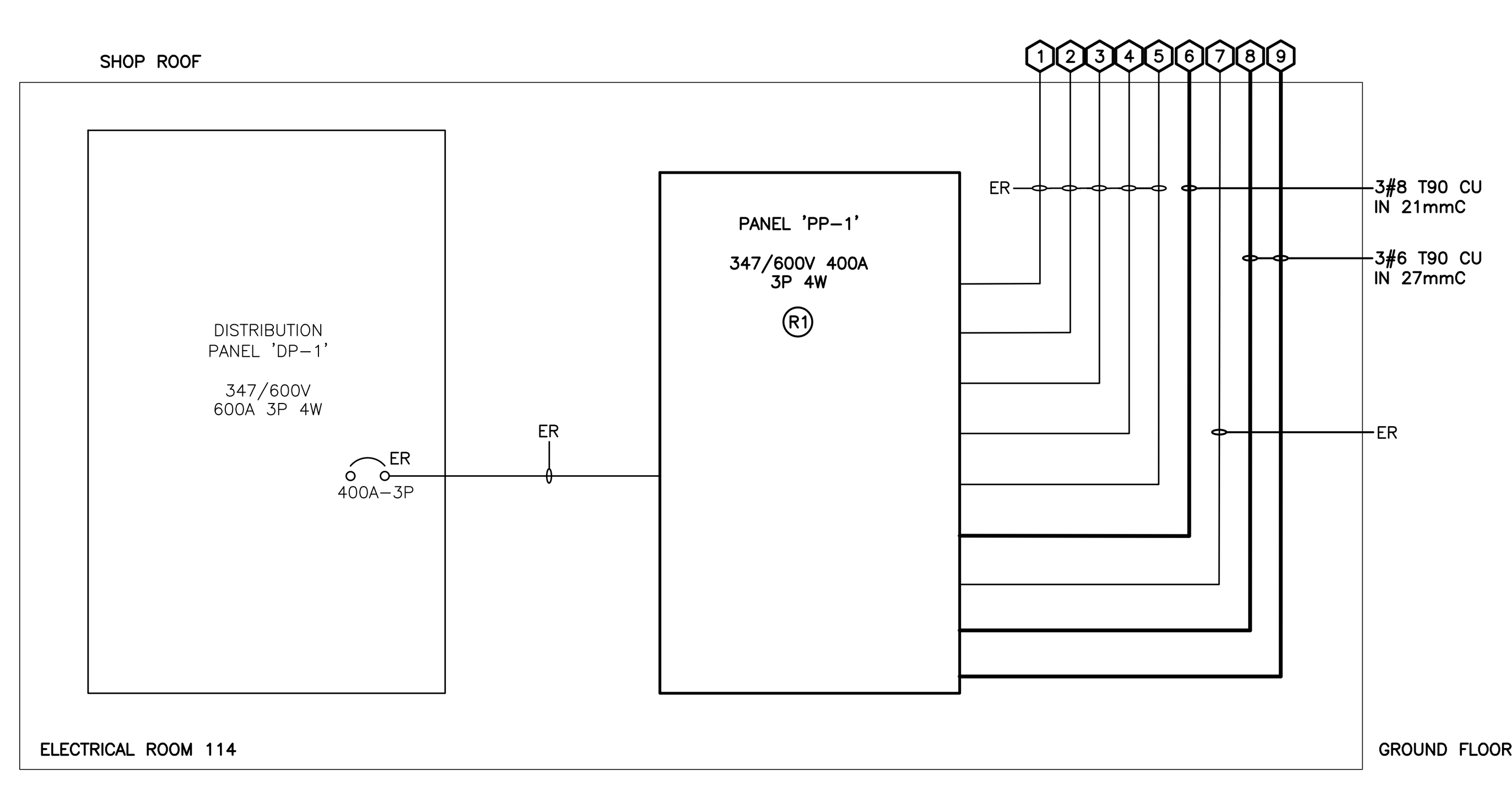
SPECIFIC RENOVATION NOTES

R1 RECONNECT EXISTING MAIN AND BRANCH CIRCUIT WIRING WHERE APPLICABLE.

ALL NEW CONDUIT MUST BE PAINTED TO MATCH ORIGINAL SURFACES IN ALL AREAS OF EXPOSED INSTALLATION.



RISER DIAGRAM – DEMOLITION



RISER DIAGRAM – RENOVATION

DISTRIBUTION RISER DIAGRAM

EQUIPMENT WIRING SCHEDULE

E=ELECTRICAL
M=MECHANICAL
O=OTHERS

Description: Electrical Item	Description	Provided by	Data: Voltage	Size hp/kW/Amps	Phase	Starter: Magnetic	Manual	Contactor	Combination	Variable Frequency Drive	Control Device: Hand/Off/Auto	On/Off Selector	Start/Stop PB.	High/Low/Off	Pilot Light	Isolating Device: Disconnect	WP Disconnect	Brkr/Fuse	Starter/Device Wired By	Remote Items: Thermostat	RA Thermostat	Time Clock	Var.Speed Cntrl	Motor Rated Sw. c/w Pilot Light	Dual Voltage Relay	Control Panel	Wired by	Bldg Auto System	Wired by	Interlock: Interlock To	Interlock By	Remarks: Description
1	HVAC–1	M	575	29 MCA	3												E	E	E								M	M	M			
2	HVAC–2	M	575	29 MCA	3												E	E	E								M	M	M			
3	HVAC–3	M	575	29 MCA	3												E	E	E								M	M	M			
4	HVAC–4	M	575	55 MCA	3												E	E	E								M	M	M			
5	HVAC–5	M	575	55 MCA	3												E	E	E								M	M	M			
6	HV–7	M	575	5HP	3												E	E	E	M							M	M	M			
7	HVAC–9	M	575	18 MCA	3												E	E	E								M	M	M			
8	ERV–1	M	575	7.5 HP	3					M							E	E	E									M	M			
9	ERV–2	M	575	5 HP	3					M							E	E	E									M	M			
10	EXHAUST FAN EF–2	M	120	1/3 HP	1												E	E	E						M		E/M	M	M			
11	EXHAUST FAN EF–3	M	120	1/3 HP	1												E	E	E						M		E/M	M	M			
12	EXHAUST FAN EF–4	M	120	FHP	1												E	E	E						M		E/M	M	M			

DEI Consulting Engineers
MECHANICAL | ELECTRICAL | AQUATIC
55 Northland Road, Waterloo, ON N2V 1Y8
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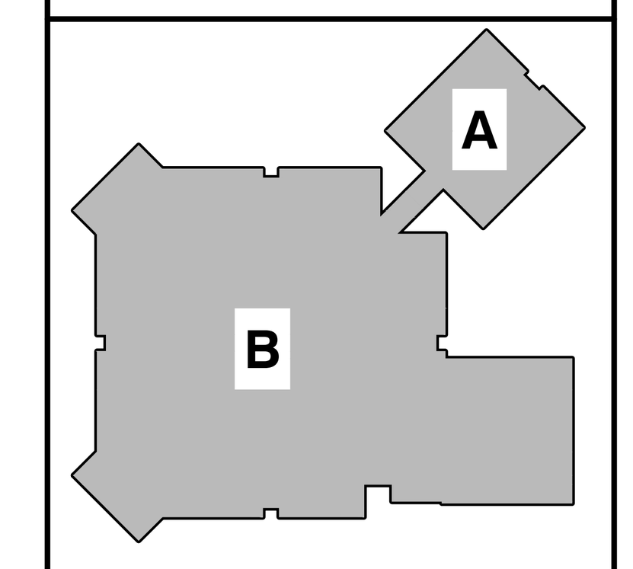
Website: deiassociates.ca
Project Number: 21449



KEYPLAN

J. JACKSON
3/11/22
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
2.	ISSUED FOR TENDER/BP	03.11.22
1.	TENDER READY	03.01.22

CERTIFICATE OF PRACTICE #4292

LAURELWOOD PS - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

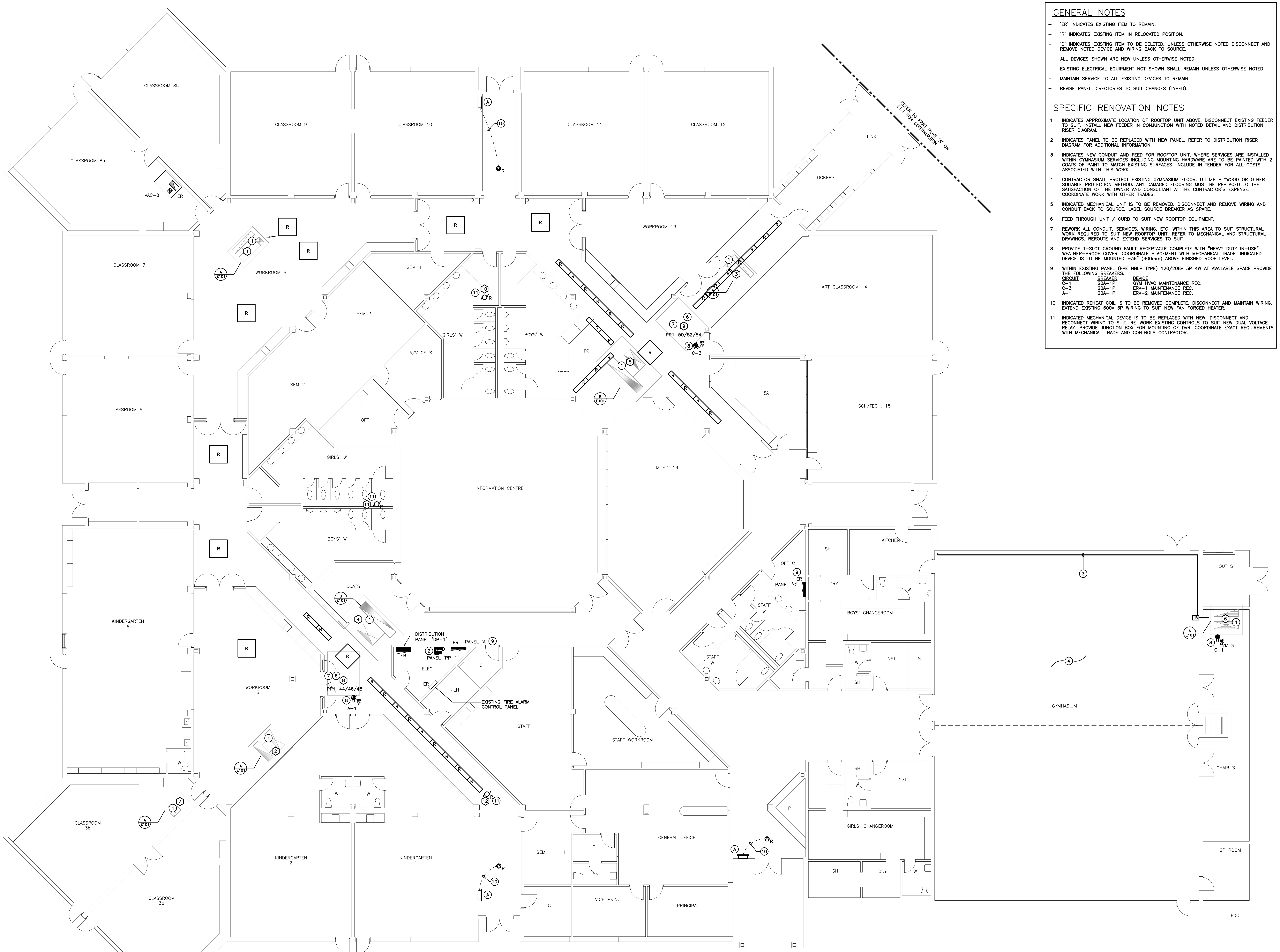
Waterloo Region District School Board

51 Ardelt Ave, Kitchener, ON N2C 2R5

KEY PLAN, DETAILS, DISTRIBUTION RISER DEMOLITION, AND RENOVATION

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

SCALE	PROJECT 21121A
DATE 2/9/2021	
DRAWN AK	DRAWING E1.1
CHECKED SD	
PRINT DATE	
REVIT FILE	



FIRST FLOOR PART PLAN B – RENOVATION

SCALE: 1:100

REMOVE, STORE, AND RE–INSTALL LIGHTING TO SUIT NEW MECHANICAL DUCTWORK INSTALLATION. REFER TO MECHANICAL DRAWINGS.

LIGHTING IS TO BE RETROFIT. REFER TO LIGHT FIXTURE SCHEDULE. REMOVE EXISTING BALLASTS AND RE–WIRE TO SUIT 120V T8 LAMPS.

GENERAL NOTES

- 'ER' INDICATES EXISTING ITEM TO REMAIN.
- 'R' INDICATES EXISTING ITEM IN RELOCATED POSITION.
- 'D' INDICATES EXISTING ITEM TO BE DELETED. UNLESS OTHERWISE NOTED DISCONNECT AND REMOVE NOTED DEVICE AND WIRING BACK TO SOURCE.
- ALL DEVICES SHOWN ARE NEW UNLESS OTHERWISE NOTED.
- EXISTING ELECTRICAL EQUIPMENT NOT SHOWN SHALL REMAIN UNLESS OTHERWISE NOTED.
- MAINTAIN SERVICE TO ALL EXISTING DEVICES TO REMAIN.
- REVISE PANEL DIRECTORIES TO SUIT CHANGES (TYPED).

SPECIFIC RENOVATION NOTES

1 INDICATES APPROXIMATE LOCATION OF ROOFTOP UNIT ABOVE. DISCONNECT EXISTING FEEDER TO SUIT. INSTALL NEW FEEDER IN CONJUNCTION WITH NOTED DETAIL AND DISTRIBUTION RISER DIAGRAM.

2 INDICATES PANEL TO BE REPLACED WITH NEW PANEL. REFER TO DISTRIBUTION RISER DIAGRAM FOR ADDITIONAL INFORMATION.

3 INDICATES NEW CONDUIT AND FEED FOR ROOFTOP UNIT. WHERE SERVICES ARE INSTALLED WITHIN GYMNASIUM SERVICES INCLUDING MOUNTING HARDWARE ARE TO BE PAINTED WITH 2 COATS OF PAINT TO MATCH EXISTING SURFACES. INCLUDE IN TENDER FOR ALL COSTS ASSOCIATED WITH THIS WORK.

4 CONTRACTOR SHALL PROTECT EXISTING GYMNASIUM FLOOR. UTILIZE PLYWOOD OR OTHER SUITABLE PROTECTION METHOD. ANY DAMAGED FLOORING MUST BE REPLACED TO THE SATISFACTION OF THE OWNER AND CONSULTANT AT THE CONTRACTOR'S EXPENSE. COORDINATE WORK WITH OTHER TRADES.

5 INDICATED MECHANICAL UNIT IS TO BE REMOVED. DISCONNECT AND REMOVE WIRING AND CONDUIT BACK TO SOURCE. LABEL SOURCE BREAKER AS SPARE.

6 FEED THROUGH UNIT / CURB TO SUIT NEW ROOFTOP EQUIPMENT.

7 REWORK ALL CONDUIT, SERVICES, WIRING, ETC. WITHIN THIS AREA TO SUIT STRUCTURAL WORK REQUIRED TO SUIT NEW ROOFTOP UNIT. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS. REROUTE AND EXTEND SERVICES TO SUIT.

8 PROVIDE T–SLOT GROUND FAULT RECEPTACLE COMPLETE WITH "HEAVY DUTY IN–USE" WEATHER–PROOF COVER. COORDINATE PLACEMENT WITH MECHANICAL TRADE. INDICATED DEVICE IS TO BE MOUNTED ±36" (900mm) ABOVE FINISHED ROOF LEVEL.

9 WITHIN EXISTING PANEL (FPE NBLP TYPE) 120/208V 3P 4W AT AVAILABLE SPACE PROVIDE THE FOLLOWING BREAKERS.

CIRCUIT	BREAKER	DEVICE
C–1	20A–1P	GYM HVAC MAINTENANCE REC.
C–3	20A–1P	ERV–1 MAINTENANCE REC.
A–1	20A–1P	ERV–2 MAINTENANCE REC.

10 INDICATED REHEAT COIL IS TO BE REMOVED COMPLETE. DISCONNECT AND MAINTAIN WIRING. EXTEND EXISTING 600V 3P WIRING TO SUIT NEW FAN FORCED HEATER.

11 INDICATED MECHANICAL DEVICE IS TO BE REPLACED WITH NEW. DISCONNECT AND RECONNECT WIRING TO SUIT. RE–WORK EXISTING CONTROLS TO SUIT NEW DUAL VOLTAGE RELAY. PROVIDE JUNCTION BOX FOR MOUNTING OF DVR. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL TRADE AND CONTROLS CONTRACTOR.

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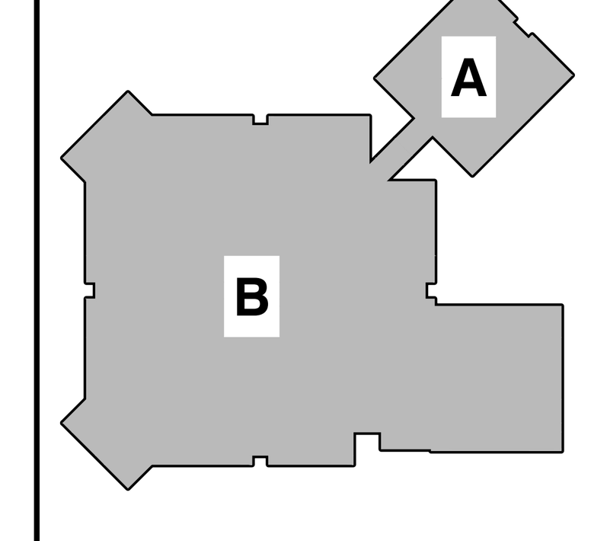


KEYPLAN

LICENSED PROFESSIONAL ENGINEER
J.J. JACKSON
3/11/22
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
2.	ISSUED FOR TENDER/BP	03.11.22
1.	TENDER READY	03.01.22

CERTIFICATE OF PRACTICE #4292

LAURELWOOD PS - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board

51 Ardelt Ave, Kitchener, ON N2C 2R5

FIRST FLOOR PART PLAN 'B' - RENOVATION

HOSSACK & ASSOCIATES ARCHITECTS
4-2150 DUNWIN DRIVE
MISSISSAUGA, ONTARIO L5L 5M8
Tel (905) 607-8284 Fax (905) 607-8290

SCALE		PROJECT	21121A
DATE	2/9/2021		
DRAWN	KZ	DRAWING	E1.2
CHECKED	SD		
PRINT DATE			
REVIT FILE			

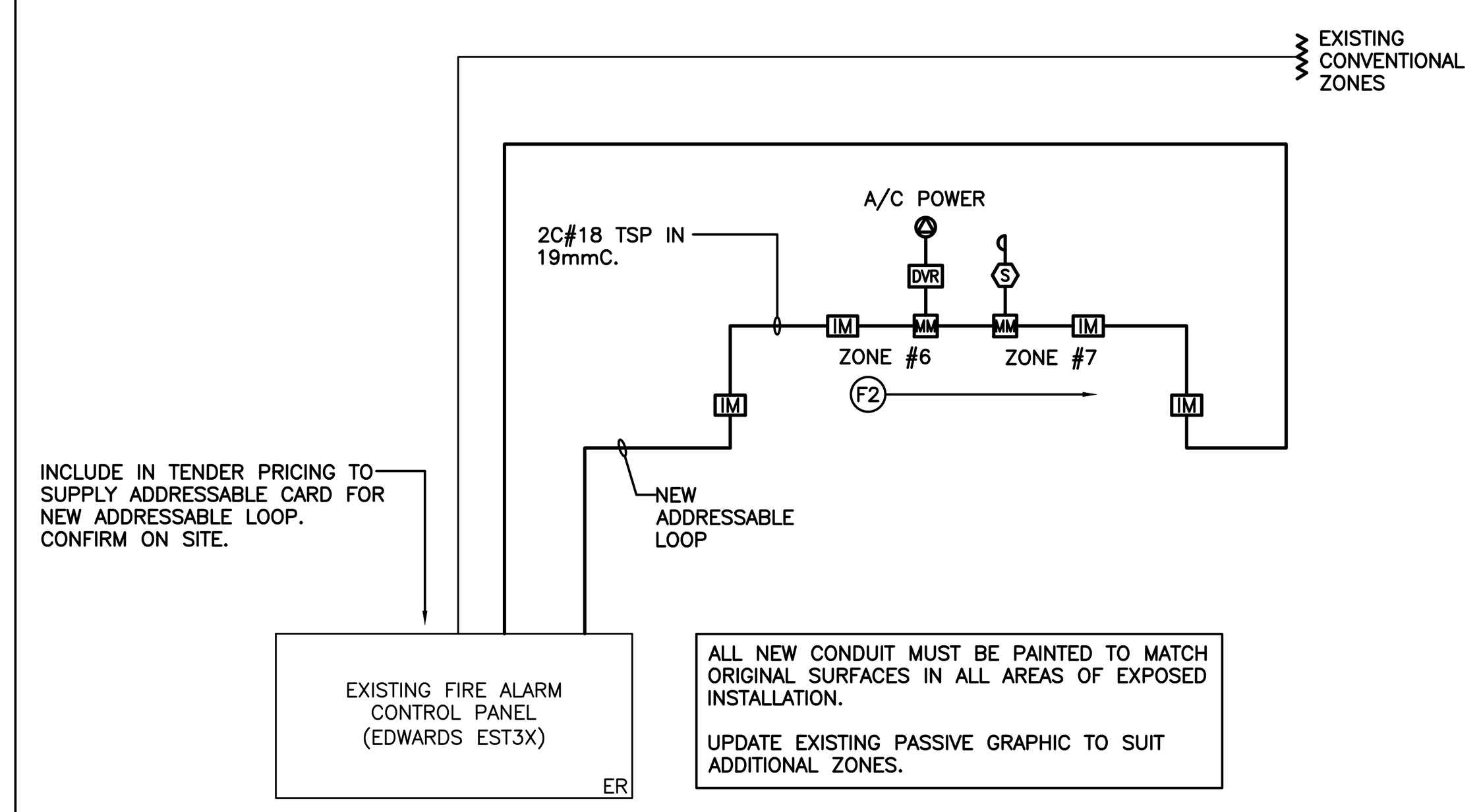
FIRE ALARM ANNUNCIATOR SCHEDULE

Zone	Description	Alarm	Supervisory	New	Existing
1	EXISTING ZONE	●			●
2	EXISTING ZONE	●			●
3	EXISTING ZONE	●			●
4	EXISTING ZONE	●			●
5	EXISTING ZONE	●			●
6	ERV–2 FSD AC POWER		●	●	
7	ERV–2 FIRE SMOKE DAMPERS	●		●	
8	SPARE				
9	SPARE				
10	SPARE				

FIRE ALARM RISER NOTES

F1 REFER TO FLOOR PLANS FOR EXACT LOCATION AND QUANTITIES OF DEVICES.

F2 INDICATES FIRE ALARM CONNECTION TO SMOKE DAMPER INTEGRAL DUCT DETECTOR. PROVIDE DUAL INPUT MONITOR/CONTACT MODULE AND DUAL VOLTAGE RELAY TO MONITOR AC POWER SUPPLY TO DAMPER AND ASSOCIATED DUCT DETECTOR BY MECHANICAL TRADE. REFER TO MECHANICAL DRAWINGS.



PARTIAL FIRE ALARM RISER DIAGRAM (F1)
SCALE: NTS

FIRE ALARM SYSTEMS

.1 INSTALLATION OF FIRE ALARM DEVICES MUST CONFORM TO ULC–S524 (LATEST EDITION).

.2 ALL WIRING MUST BE COLOUR CODED, SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND CONFORM TO THE LATEST EDITION OF THE ELECTRICAL SAFETY CODE.

.3 ALL NEW FIRE ALARM DETECTION AND SIGNALING DEVICES ADDED DUE TO RENOVATIONS AND ADDITIONS SHALL BE CONNECTED TO EXISTING LOCAL ZONE OR NEW ZONE AS INDICATED.

.4 ONCE INSTALLATION IS COMPLETE THE MANUFACTURER'S REPRESENTATIVE MUST MAKE AN INSPECTION OF THE DEVICES INSTALLED.

.5 THIS TEST MUST CONFORM TO THE ONTARIO BUILDING CODE AND THE LATEST EDITION OF ULC CAN4–S537.

.6 ALL COSTS ASSOCIATED WITH THIS INSPECTION BY THE CONTRACTOR AND MANUFACTURER MUST BE CARRIED IN THE TENDER PRICE.

.7 UPON SUCCESSFUL COMPLETION OF TESTING THE MANUFACTURER MUST SUBMIT TO THE CONTRACTOR AND CONSULTANT:
– A CERTIFICATE OF VERIFICATION
– FIELD TECHNICIAN VERIFICATION SHEETS FOR EACH DEVICE VERIFIED (INCLUDE COPIES OF SAME IN MAINTENANCE MANUALS)

.12 PROVIDE INTEGRATED TESTING OF THIS LIFE SAFETY SYSTEM IN CONFORMANCE WITH THE NOTED SPECIFICATION SECTION. INCLUDE ALL ASSOCIATED COSTS IN TENDER.

.13 EQUIPMENT:

	DEVICE	EDWARDS
2	CONTROL PANEL: (ADDRESSABLE)	
		EST 3X
	INTELLIGENT DEVICES:	
18	MONITOR MODULE	SIGA–MM1
19	CONTROL MODULE	SIGA–CR
19	ISOLATOR MODULE	SIGA–IM
21	ANNUNCIATOR	EST3–6ANN

INTEGRATED TESTING OF LIFE SAFETY AND FIRE PROTECTION SYSTEMS

.1 LIFE SAFETY AND FIRE PROTECTION SYSTEMS ARE TO BE INSTALLED TO COMPLY WITH THE PROVISIONS OF THE CURRENT ONTARIO BUILDING AND FIRE CODES. AS A RESULT, COMMISSIONING OF THESE INTEGRATED SYSTEMS MUST BE PERFORMED AS A WHOLE TO ENSURE THE PROPER OPERATION AND INTER–RELATIONSHIP BETWEEN SYSTEMS.

.2 THESE SYSTEMS AS APPLICABLE TO ANY GIVEN PROJECT INCLUDE BUT ARE NOT LIMITED TO FIRE ALARM AND ACCESS CONTROL AND EGRESS DEVICES.

.3 ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH CAN/ULC S1001–2011. SPECIAL CONSIDERATION IS TO BE GIVEN TO THE SEQUENCE OF OPERATIONS . THE WORK TO BE PERFORMED BY THIS CONTRACTOR IS ALSO DESCRIBED IN CAN/ULC S1001–2011.

.4 ALL APPLICABLE CONTRACTORS, SUB–CONTRACTORS, TESTING AGENTS, AND SUPPLIERS ARE TO INCLUDE ALL REQUIRED COSTS IN THEIR RESPECTIVE TENDER COSTS. THIS TESTING AGENT MUST BE A THIRD PARTY FIRM NOT ASSOCIATED WITH THIS PROJECT IN ANY WAY AND BE UNDER CONTRACT WITH THE ELECTRICAL SUB–CONTRACTOR NOT THE FIRE ALARM SUPPLIER.

ELECTRICAL SPECIFICATION

GENERAL NOTES

.1 PROVIDE LABOUR MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE INSTALLATION WITH QUALITY WORKMANSHIP ACCEPTABLE TO THE OWNER, ARCHITECT AND CONSULTANT.

.2 OBTAIN ALL PERMITS AND PAY ALL TAXES, FEES AND OTHER COSTS INCURRED WITH THIS WORK. FILE ALL PLANS. OBTAIN NECESSARY APPROVALS, CERTIFICATES AND INSPECTIONS. SUBMIT ALL FINAL CERTIFICATES TO THE CONSULTANT.

.3 COMPLY WITH RULES AND RECOMMENDATIONS OF THE BOARD OF UNDERWRITERS, ELECTRICAL SAFETY AUTHORITY, THE CANADIAN STANDARDS ASSOCIATION AND ALL REQUIREMENTS OF THE LOCAL UTILITY.

.4 VISIT THE SITE BEFORE SUBMITTING TENDERS TO EVALUATE ANY SITE CONDITIONS THAT MIGHT ARISE. INCLUDE ALL SITE CONDITIONS IN TENDER, EXTRAS WILL NOT BE ACCEPTED UNLESS BELIEVED TO BE REASONABLE BY THE OWNER AND CONSULTANT.

.5 CUTTING AND PATCHING SHALL BE BY THE CONTRACTOR REQUIRING TO INSTALL THE SERVICE.

.6 THE DRAWINGS ARE DIAGRAMMATIC, THE SERVICES SHALL BE INSTALLED TO CONSERVE HEADROOM AND INTERFERE AS LITTLE AS POSSIBLE WITH THE FREE USE OF THE SPACES THROUGH WHICH THEY PASS.

.7 SUBMIT COPIES OF SHOP DRAWINGS AS PDF FILES VIA EMAIL FOR ALL MAJOR EQUIPMENT. THESE WILL BE REVIEWED BY THE CONSULTANT. RESUBMIT AS OFTEN AS MAY BE FOUND NECESSARY.

.8 PROVIDE ALL NECESSARY PROTECTION FOR FINISHED OR UNFINISHED WORK. ALL OPENINGS IN CONDUITS, DUCTS AND EQUIPMENT SHALL BE CAPPED TO ENSURE SERVICES ARE KEPT CLEAN WHEN NOT IN USE.

.9 MAINTAIN INSURANCE TO FULLY PROTECT THE CONTRACTOR, OWNER AND CONSULTANT FROM ANY AND ALL CLAIMS SUCH AS UNDER THE WORKMEN'S COMPENSATION ACT, ETC. POST PROJECT NOTIFICATION AT THE SITE IN ACCORDANCE WITH THE MINISTRY OF LABOUR REQUIREMENTS.

.10 PROVIDE STRUCTURAL SUPPORTS, PLATFORMS, SUPPORTING RODS, HANGERS, INSERTS AND BRACKETS FOR EQUIPMENT AND SERVICES. DO NOT SUPPORT SERVICES FROM STEEL DECK.

.11 INSTRUCT THE OWNER'S STAFF IN THE CARE, MAINTENANCE AND OPERATION OF THE SYSTEMS.

.12 WARRANTY ALL LABOUR, MATERIAL AND EQUIPMENT FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF SYSTEM.

.13 COORDINATE WITH OTHER CONTRACTORS INSTALLING EQUIPMENT OR MATERIAL AND ARRANGE EQUIPMENT IN PROPER RELATION WITH APPARATUS OF ALL OTHER TRADES.

.14 PROVIDE LAMICOID TAGS FOR IDENTIFICATION OF NEW EQUIPMENT ADDED.

.15 ALL AREAS NOT AFFECTED BY RENOVATION OR DEMOLITION SHALL REMAIN AS PRESENTLY INSTALLED UNLESS OTHERWISE NOTED.

.17 ALL EXISTING ELECTRICAL DEVICES, OUTLET BOXES, ETC., NOT SHOWN ON DRAWINGS OR MENTIONED IN THE FOLLOWING NOTES AND INSTALLED IN WALLS SLATED FOR DEMOLITION, SHALL BE DISCONNECTED AND REMOVED COMPLETELY IN ALL RESPECTS.

.18 SUBMIT ONE COPY OF OPERATING AND MAINTENANCE INSTRUCTIONS IN A THREE RING BINDER LABELED FOR THE PROJECT COMPLETE WITH ITEMIZED SECTIONS CONTAINING PROJECT DATA, SHOP DRAWINGS, ETC. UPON ACCEPTANCE OF THE OPERATION AND MAINTENANCE MANUAL BY THE CONSULTANT PROVIDE TWO ADDITIONAL COPIES BOUND IN SEPARATE THREE RING BINDERS. A PDF FILE OF THE ENTIRE MANUAL IS TO BE PROVIDED ON A USB STICK. ONLY ONE USB STICK IS TO BE PROVIDED CONTAINING BOTH THE APPROVED MANUALS AND RECORD DRAWINGS.

.19 CONTRACTOR SHALL PROVIDE 2 SETS OF REPRODUCIBLE ELECTRICAL DRAWINGS. MARK THEREON ALL CHANGES AS WORK PROGRESSES AND AS CHANGES OCCUR. THIS SHALL INCLUDE FIELD AND CONTRACT CHANGES TO ELECTRICAL SYSTEMS. IDENTIFY EACH DRAWING IN LOWER RIGHT HAND CORNER IN LETTERS AT LEAST 3mm (1/8") HIGH AS FOLLOWS: – "RECORD DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW ELECTRICAL SYSTEMS AS INSTALLED. (SIGNATURE OF CONTRACTOR)(DATE)". SUBMIT HARD COPY TO CONSULTANT FOR APPROVAL. WHEN RETURNED, MAKE CORRECTIONS (IF ANY) AS DIRECTED. ONCE APPROVED, SUBMIT COMPLETED REPRODUCIBLE PAPER RECORD DRAWINGS AS WELL AS A SCANNED PDF COPY FILE ON USB STICK WITH OPERATING AND MAINTENANCE MANUALS.

.20 CONTRACTOR SHALL PROVIDE RED LINE RECORD DRAWINGS OF EACH AND EVERY ELECTRICAL DRAWING FOR DEI & ASSOCIATES INC. TO CAD THE RECORD DRAWINGS. THE CAD DRAWING FILES WILL BE PROVIDED TO THE OWNER AS PART OF THE MAINTENANCE MANUALS.

.21 THE CONTRACTOR IS TO DETERMINE GENERAL INSPECTION FEES WITH THE ELECTRICAL SAFETY AUTHORITY AND INCLUDE AS PART OF TENDER.

.22 A SUBMISSION HAS BEEN MADE (IF REQUIRED BY THIS SCOPE OF PROJECT) BY THE CONSULTANT TO THE ELECTRICAL SAFETY AUTHORITY FOR REVIEW OF THIS PROJECT. THE PAYMENT OF THE REQUIRED REVIEW COSTS WILL BE COORDINATED BY THE CONSULTANT. A COPY OF THE ELECTRICAL SAFETY AUTHORITY REVIEW REPORT WILL BE FORWARDED TO THE SUCCESSFUL CONTRACTOR FOR INFORMATION AND ACTION.

BASIC MATERIALS

.1 JUNCTION, OUTLET AND PULL BOXES MUST BE APPROVED TO SUIT INSTALLATION METHODS AND ENVIRONMENT.

.2 CONDUIT MUST BE CONCEALED UNLESS INSTALLED IN SERVICE OR STORAGE ROOMS.

.3 CONDUIT MUST BE INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING LINES IN A NEAT AND WORKMANLIKE MANNER.

.4 ALL FEEDER AND BRANCH CIRCUIT WIRING MUST BE COPPER, T90 RATING/STYLE RUN IN EMT CONDUIT WITH INTERNAL INSULATED GREEN GROUND WIRE UNLESS NOTED OTHERWISE. MINIMUM WIRE SIZE SHALL BE #12 AND MINIMUM CONDUIT SIZE SHALL BE 3/4" (19mm).

.5 AC90 CABLE MAY BE USED FOR BRANCH CIRCUIT WIRING IN STEEL STUD WALLS AND "DROPS" IN T–BAR CEILING AREAS TO LIGHT FIXTURES AND FIRE ALARM DEVICES. LENGTH OF DROP MUST BE LIMITED TO 8'–0" (2400mm).

.6 WHERE DEVICES ARE TO BE INSTALLED ON EXISTING WALLS IN FINISHED AREA, WHICH CANNOT BE FISHED, INSTALL FEEDS IN A SURFACE METAL RACEWAY EQUAL TO WIREMOLD V700 SERIES.

.7 COLOUR CODE CONDUITS, BOXES AND METALLIC SHEATHED CABLES.

.8 CODE WITH PLASTIC TAPE OR PAINT AT POINTS WHERE CONDUIT OR CABLE ENTERS WALL, CEILING, OR FLOOR, AND AT 15m(45') INTERVALS.

.9 COLOUR BANDS MUST BE 25mm(1") WIDE AND CODED AS FOLLOWS FOR NOTED SYSTEMS. (WRITER TO EDIT)

SYSTEM	COLOUR
UP TO 208V	YELLOW
209 TO 600V	WHITE

.10 THIS CONTRACTOR MUST PAINT ALL SYSTEM JUNCTION BOXES AND COVERS IN CONFORMANCE WITH THE ABOVE SCHEDULE.

DRAW BREAKDOWN

.1 THIS CONTRACTOR MUST SUBMIT A BREAKDOWN OF THE TENDER PRICE INTO CLASSIFICATIONS TO THE SATISFACTION OF THE CONSULTANT, WITH THE AGGREGATE OF THE BREAKDOWN TOTALING THE TOTAL CONTRACT AMOUNT. EACH ITEM MUST BE BROKEN OUT INTO MATERIAL AND LABOUR COSTS. PROGRESS CLAIMS, WHEN SUBMITTED ARE TO BE ITEMIZED AGAINST EACH ITEM OF THE DRAW BREAKDOWN. THIS SHALL BE DONE IN TABLE FORM SHOWING CONTRACT AMOUNT, AMOUNT THIS DRAW, TOTAL TO DATE, % COMPLETE AND BALANCE.

.2 BREAKDOWN SHALL BE AS FOLLOWS:
.1 PERMITS AND FEES
.2 MOBILIZATION (MAXIMUM 1%)
.3 MISCELLANEOUS DISTRIBUTION EQUIPMENT
.4 WIRING FOR MECHANICAL EQUIPMENT
.5 COMMISSIONING AND CLOSEOUT DOCUMENTS (MINIMUM 3%)

.3 THE BREAKDOWN MUST BE APPROVED BY THE CONSULTANT PRIOR TO SUBMISSION OF THE FIRST DRAW.

.4 BREAKDOWNS NOT COMPLYING TO THE ABOVE WILL NOT BE APPROVED.

.5 BREAKDOWN MUST INDICATE TOTAL CONTRACT AMOUNT.

.6 MOBILIZATION AMOUNT MAY ONLY BE DRAWN WHEN ALL REQUIRED SHOP DRAWINGS HAVE BEEN REVIEWED BY THE CONSULTANT.

SHOP DRAWINGS AND PRODUCT DATA

.1 FURNISH COMPLETE CATALOG DATA FOR MANUFACTURED ITEMS OF EQUIPMENT TO BE USED IN THE WORK TO CONSULTANT FOR REVIEW WITHIN 30 DAYS AFTER AWARD OF CONTRACT.
.2 IF MATERIAL OR EQUIPMENT IS NOT AS SPECIFIED OR SUBMITTAL IS NOT COMPLETE, IT WILL BE REJECTED BY CONSULTANT.
.3 ADDITIONAL SHOP DRAWINGS REQUIRED BY THE CONTRACTOR FOR MAINTENANCE MANUALS, SITE COPIES ETC., SHALL BE PHOTOCOPIES OF THE "REVIEWED" SHOP DRAWINGS. ALL COSTS TO PROVIDE ADDITIONAL COPIES OF SHOP DRAWINGS SHALL BE BORNE BY THE CONTRACTOR.
.4 PARTIAL SUBMITTALS WILL NOT BE ACCEPTED.
.5 CATALOG DATA OR SHOP DRAWINGS FOR EQUIPMENT, WHICH ARE NOTED AS BEING REVIEWED BY CONSULTANT OR HIS ENGINEER SHALL NOT SUPERSEDE CONTRACT DOCUMENTS.
.6 REVIEW COMMENTS OF CONSULTANT SHALL NOT RELIEVE THIS DIVISION FROM RESPONSIBILITY FOR DEVIATIONS FROM CONTRACT DOCUMENTS UNLESS CONSULTANT'S ATTENTION HAS BEEN CALLED TO SUCH DEVIATIONS IN WRITING AT TIME OF SUBMISSION, NOR SHALL THEY RELIEVE THIS DIVISION FROM RESPONSIBILITY FOR ERRORS IN ITEMS SUBMITTED.
.7 CHECK WORK DESCRIBED BY CATALOG DATA WITH CONTRACT DOCUMENTS FOR DEVIATIONS AND ERRORS.
.8 SHOP DRAWINGS AND PRODUCT DATA SHALL SHOW:
.1 MOUNTING ARRANGEMENTS.
.2 OPERATING AND MAINTENANCE CLEARANCES. E.G. ACCESS DOOR SWING SPACES.
.9 SHOP DRAWINGS AND PRODUCT DATA SHALL BE ACCOMPANIED BY:
.1 DETAILED DRAWINGS OF BASES, SUPPORTS, AND ANCHOR BOLTS.
.2 MANUFACTURER TEST DATA WHERE REQUESTED.
.3 MANUFACTURER TO CERTIFY AS TO CURRENT MODEL PRODUCTION.
.4 CERTIFICATION OF COMPLIANCE TO APPLICABLE CODES.
.10 STATE SIZES, CAPACITIES, BRAND NAMES, MOTOR HP, ACCESSORIES, MATERIALS, GAUGES, DIMENSIONS, AND OTHER PERTINENT INFORMATION. LIST ON CATALOG COVERS PAGE NUMBERS OF SUBMITTED ITEMS. UNDERLINE APPLICABLE DATA.
.11 ONCE THESE SHOP DRAWINGS ARE RETURNED "REVIEWED" OR "REVIEWED AS NOTED" FABRICATION, PRODUCTION, AND INSTALLATION MAY COMMENCE. NOTE: IF A SHOP DRAWING IS RETURNED "REVIEWED AS NOTED" THIS CONTRACTOR MUST PROVIDE WRITTEN INDICATION THAT THE COMMENTS HAVE BEEN COMPLIED WITH.

.12 A PARTIAL LIST OF SHOP DRAWINGS INCLUDES:
.1 DISCONNECTS
.2 PANELBOARDS

FIRESTOPPING

.1 FIRESTOPPING MATERIAL AND INSTALLATION WITHIN ANNULAR SPACE BETWEEN CONDUITS, DUCTS, AND ADJACENT FIRE SEPARATION.

.2 PROVIDE MATERIALS AND SYSTEMS CAPABLE OF MAINTAINING EFFECTIVE BARRIER AGAINST FLAME, SMOKE, AND GASES.

.3 COMPLY WITH THE REQUIREMENTS OF CAN4–S115–M35, AND DO NOT EXCEED OPENING SIZED FOR WHICH THEY HAVE BEEN TESTED.

.4 SYSTEMS TO HAVE AN F OR FT RATING (AS APPLICABLE) NOT LESS THAN THE FIRE PROTECTION RATING REQUIRED FOR CLOSURES IN A FIRE SEPARATION. PROVIDE "FIREWRAP" BLANKET AROUND SERVICES PENETRATING FIREWALLS.

.5 EXTENT OF BLANKET MUST CORRESPOND TO ULC RECOMMENDATIONS. IN GENERAL WRAP INDIVIDUAL CONDUITS WITH APPROVED FIREWRAP MATERIALS ON EACH SIDE OF FIREWALL. REFER TO ARCHITECTURAL DRAWINGS FOR FT RATINGS. PROVIDE 1 AND/OR 2 LAYERS OF FIREWRAP WITH TRANSVERSE AND LONGITUDINAL SEAMS OVERLAPPED AND/OR BUTTED (SECOND LAYER OFFSET FROM FIRST LAYER). CUT EDGES ARE TO BE SEALED WITH ALUMINUM FOIL TAPE. PROVIDE 50 MM STAINLESS STEEL BANDING AT 200 MM INTERVALS. INSTALL FIREWRAP TO MANUFACTURERS' RECOMMENDATIONS FOR PROPER FT RATING. ACCEPTABLE MANUFACTURERS ARE 3M FIREMASTER DUCTWRAP OR APPROVED EQUAL.

.6 THE FIRESTOPPING MATERIALS ARE NOT TO SHRINK, SLUMP OR SAG AND BE FREE OF ASBESTOS, HALOGENS AND VOLATILE SOLVENTS.

.7 FIRESTOPPING MATERIALS ARE TO CONSIST OF A COMPONENT SEALANT APPLIED WITH A CONVENTIONAL CAULKING GUN AND TROWEL.

.8 FIRESTOP MATERIALS ARE TO BE CAPABLE OF RECEIVING FINISH MATERIALS IN THOSE AREAS, WHICH ARE EXPOSED AND SCHEDULED TO RECEIVE FINISHES.

.9 FIRESTOPPING SHALL BE INSPECTED AND APPROVED BY LOCAL AUTHORITY PRIOR TO CONCEALMENT OR ENCLOSURE.

.10 INSTALL MATERIAL AND COMPONENTS IN ACCORDANCE WITH ULC CERTIFICATION, MANUFACTURERS INSTRUCTIONS AND LOCAL AUTHORITY.

.11 SUBMIT PRODUCT LITERATURE AND INSTALLATION MATERIAL ON FIRESTOPPING IN SHOP DRAWING AND PRODUCT DATA MANUAL.

.12 ACCEPTABLE MANUFACTURERS:
FYREESLEEVE INDUSTRIES INC.
GENERAL ELECTRIC PENSIL FIRESTOP SYSTEMS
INTERNATIONAL PROTECTIVE COATINGS CORP.
RECTORSEAL CORPORATION (METACAULK)
PROSET SYSTEMS
3M
AD SYSTEMS
HILTI
ROYAL

NOTE: FIRE STOP MATERIAL MUST CONFORM TO REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION. CONTRACTOR TO CONFIRM PRIOR TO APPLICATION AND ENSURE MATERIAL USED IS COMPATIBLE WITH THAT USED BY OTHER TRADES ON SITE.

.13 ENSURE FIRESTOP MANUFACTURER REPRESENTATIVE PERFORMS ON SITE INSPECTIONS AND CERTIFIES INSTALLATION. SUBMIT INSPECTION REPORTS/CERTIFICATION AT TIME OF SUBSTANTIAL COMPLETION.

DISCONNECT SWITCHES

.1 MUST CONFORM TO CSA C22.2 NO. 4 (LATEST EDITION).

.2 FUSIBLE, AND/OR NON–FUSIBLE, HORSEPOWER RATED DISCONNECT SWITCHES, SIZE AS INDICATED.

.3 PROVISION FOR PADLOCKING IN OFF SWITCH POSITION BY THREE LOCKS.

.4 MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IS IN "ON" POSITION.

.5 QUICK–MAKE, QUICK–BREAK ACTION.

.6 ON–OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.

.7 PROVIDE LAMICOID LABEL.

.8 DISCONNECT SWITCHES MUST BE ONE OF THE FOLLOWING:
.1 CUTLER HAMMER
.2 SCHNEIDER ELECTRIC
.3 SIEMENS

PANEL BOARDS

.1 PANEL BOARDS MUST CONFORM TO CSA C22.2 NO. 29 (LATEST EDITION).

.2 IN ADDITION TO CSA REQUIREMENTS MANUFACTURER'S NAMEPLATE MUST SHOW FAULT CURRENT THAT PANEL INCLUDING BREAKERS HAS BEEN BUILT TO WITHSTAND. SERIES RATING IS ACCEPTABLE–SUBMIT INFORMATION WITH SHOP DRAWINGS.

.3 BUS AND BREAKERS/SWITCHES MUST BE RATED FOR 10KA (SYMMETRICAL) INTERRUPTING CAPACITY OR AS INDICATED.

.4 SEQUENCE PHASE BUSSING WITH ODD NUMBERED BREAKERS ON LEFT AND EVEN ON RIGHT, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE.

.5 PANEL BOARD MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT AS INDICATED.

.6 TWO KEYS FOR EACH PANEL BOARD AND KEY PANEL BOARDS ALIKE.

.7 ALUMINUM BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS.

.8 MAINS MUST BE SUITABLE FOR BOLT–ON BREAKERS. PROVIDE MAIN (IF APPLICABLE) AND BRANCH BREAKERS AS BOLT–ON STYLE.

.9 TRIM AND DOOR FINISH MUST BE BAKED GRAY ENAMEL.

.10 BREAKERS WITH THERMAL AND MAGNETIC TRIPPING IN PANEL BOARD EXCEPT AS INDICATED OTHERWISE.

.11 PROVIDE NAMEPLATE FOR EACH PANEL BOARD WITH ENGRAVED DESCRIPTION AS INDICATED.

.12 FOR EACH NEW AND EXISTING PANEL PROVIDE COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING LOCATION OF EACH CIRCUIT.

.13 LOCATE PANEL BOARDS AS INDICATED AND MOUNT SECURELY, PLUMB, TRUE AND SQUARE, TO ADJOINING SURFACES.

.14 INSTALL SURFACE MOUNTED PANEL BOARDS ON PLYWOOD BACKBOARDS. WHERE PRACTICAL, GROUP PANEL BOARDS ON COMMON BACKBOARD.

.15 CONNECT LOADS TO CIRCUITS.

.16 CONNECT NEUTRAL CONDUCTORS TO COMMON NEUTRAL BUS.

.17 POWER DISTRIBUTION CIRCUIT BREAKER PANEL BOARDS MUST BE ONE OF THE FOLLOWING:
– CUTLER HAMMER CAT. #POW–R–LINE–C PRL–3A OR PLR–4A
– SCHNEIDER ELECTRIC CAT. #CDP OR I–LINE SERIES
– SIEMENS CAT. #P2 SERIES

.18 ALL REDUNDANT BREAKERS ARE TO REMAIN AND BE RE–LABELED AS "SPARE".

DEI Consulting Engineers
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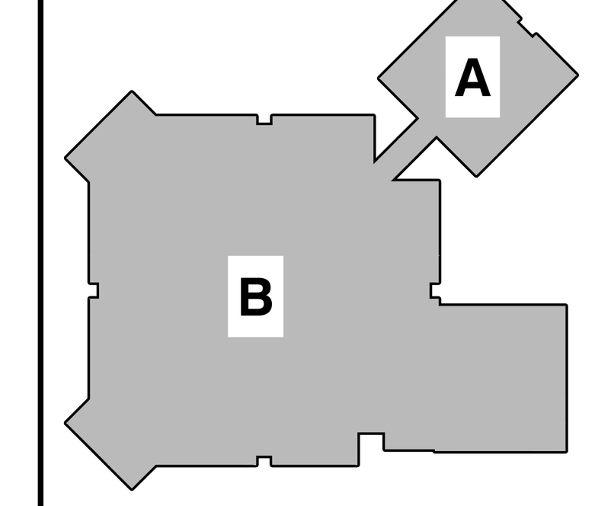

KEYPLAN

LICENSED PROFESSIONAL ENGINEER
J. JACKSON
3/11/22
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
2.	ISSUED FOR TENDER/BP	03.11.22
1.	TENDER READY	03.01.22

CERTIFICATE OF PRACTICE #4292

LAURELWOOD PS - HVAC AND CONTROLS UPGRADE

460 Brentcliffe Dr, Waterloo, ON N2T 2R5

Waterloo Region District School Board

51 Ardelt Ave, Kitchener, ON N2C 2R5

FIRE ALARM RISER DIAGRAM AND ELECTRICAL SPECIFICATION

HOSSACK & ASSOCIATES ARCHITECTS

SCALE	PROJECT 21121A
DATE 2/9/2021	
DRAWN KZ	DRAWING E1.3
CHECKED SD	
PRINT DATE	
REVIT FILE	