

**GENERAL NOTES**

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- CONTRACTOR MUST VISIT THE SITE AND FULLY FAMILIARIZE THEMSELVES WITH THE SCOPE OF THE WORK PRIOR TO PROJECT COMMENCEMENT.
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# NATIONAL RESEARCH COUNCIL CANADA

## MONTREAL ROAD CAMPUS

### Ottawa, Ontario, Canada

PREPARED BY:  
 REAL PROPERTY PLANNING AND MANAGEMENT  
 ENGINEERING SERVICES (RPPM)  
 1200 MONTREAL ROAD, M-19 (RM 340),  
 OTTAWA, ONTARIO, CANADA K1A 0R6

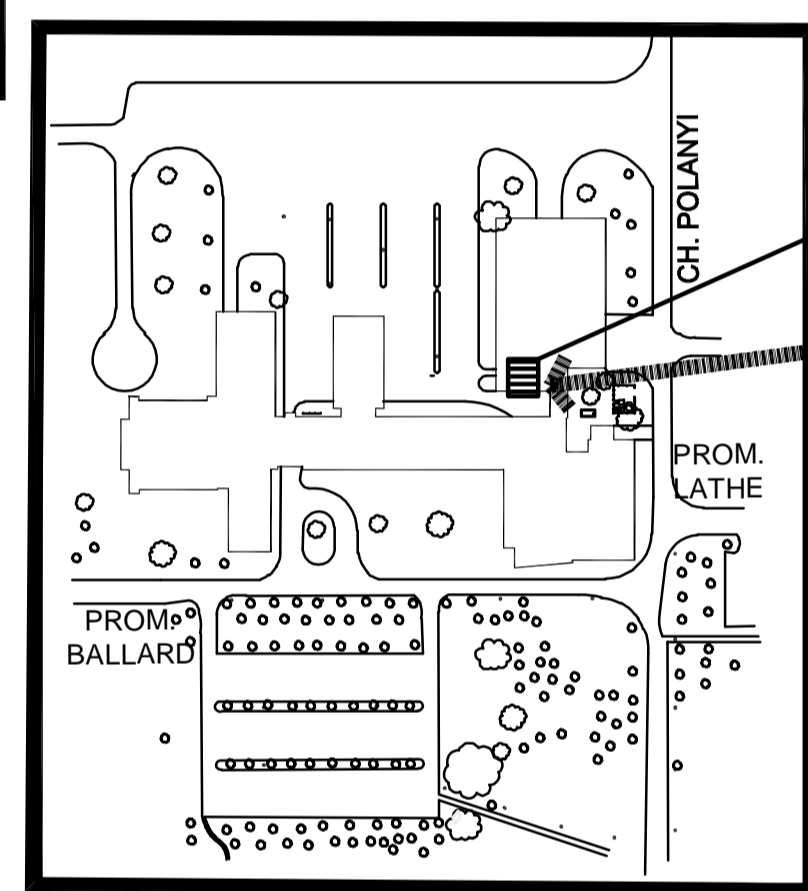
PROJECT:  
 PROJECT NO. = 6136  
 BUILDING M-50  
 ROOM 186 E  
 VENTILATION SYSTEM MODIFICATIONS

**ABBREVIATIONS:**

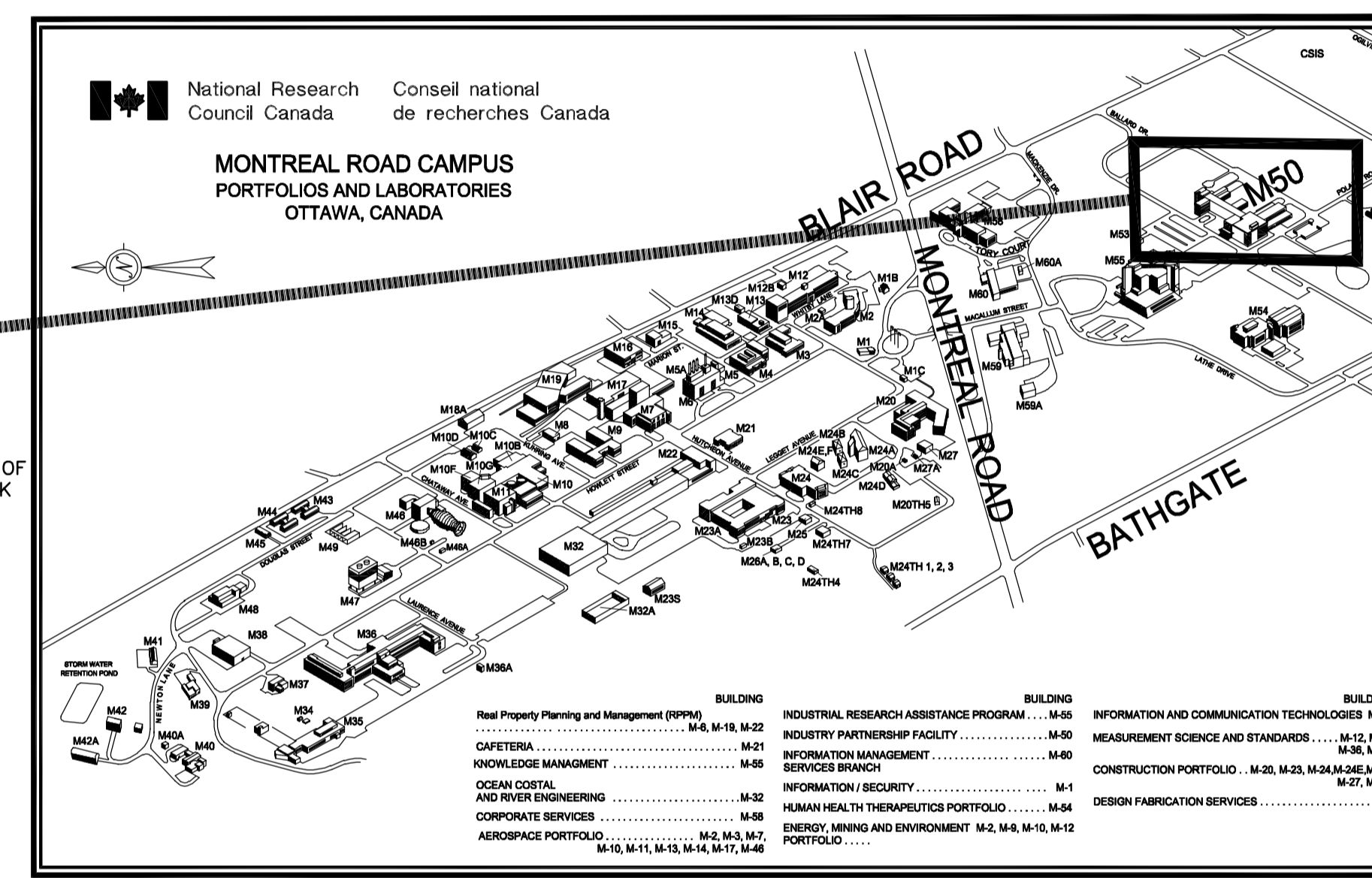
AFF.	ABOVE FINISHED FLOOR	EPV	EXISTING PIPE VENT	GA.	GALV	GALVANIZED	REINF.	REINFORCING
AL.	ALUMINUM	EPVA	EXISTING PIPE VENT ACID		GPSBD	GYPSPM BOARD	REQ'D	REQUIRED
A/V	AIR/VAPOUR	EPVNZ	EXISTING PIPE VENT NITROGEN		G.C.	GENERAL CONTRACTOR	R.O.	ROUGH OPENING
APPROX.	APPROXIMATELY	EX	EXISTING		HORZ	HORIZONTAL	SM	SIMILAR
CEIL.	CEILING	EW	EXISTING GUY WIRES		I.D	INSIDE DIAMETER	SPEC	SPECIFICATIONS
CONC.	CONCRETE	ELAD	EXISTING LADDER		INCL	INCLUDING	SQ	SQUARE
CONT.	CONTINUOUS	EXSHWR	EXISTING EMERGENCY SHOWER STATION		INSUL	INSULATION	S.S.	STAINLESS STEEL
CONST.	CONSTRUCTION	E.E.W	EXISTING EYE WASH STATION		INT.	INTERIOR	STRCT	STRUCTURAL
COMP.	COMPLETELY	ERC/ZH	EXISTING ROOF CURB / EXHAUST		MIN.	MINIMUM	SUS	SUSPENDED
C/W	COMPLETE WITH	ERD	EXISTING ROOF DRAIN		MM	MILLIMETRE	T&G	TONGUE & GROOVE
DIA.	DIAMETER	EXP	EXPANSION		N.I.C.	NOT IN CONTRACT	T&B	TOP & BOTTOM
DWG.	DIAGONAL DRAWING	EXT.	EXTERIOR		O.C.	ON CENTER	T/F	TOP OF FRAME
E.A.P.	EXISTING ACCESS PANEL	E.W.	EYE WASH		O.D.	OUTSIDE DIAMETER	T/S	TOP OF STEEL
E.F.D.	EXISTING FLOOR DRAIN	FIN	FINISH		O.F.	OPPOSITE	TYP	TYPICAL
E.F.P.	EXISTING FLOOR PLATES	FEXT	FIRE EXTINGUISHER		OPP.	OPPOSITE	U/S	UNDERSIDE
		F.R.	FIRE RATED		POLY.	POLYETHYLENE	VERT	VERTICAL
					P.T.	PRESSURE TREATED		

**DRAWING SHEET LIST:**

COVER SHEET	6136-G00	- COVER SHEET - GENERAL DRAWING LIST - PROJECT INFO - KEY PLANS
ARCHITECTURAL, AND ELECTRICAL	6136-G01	- REFLECTED CEILING PLAN - ELECTRICAL SINGLE LINE DIAGRAM AND FLOOR PLAN
MECHANICAL	6136-M01	- MECHANICAL PLANS: DEMOLITION AND NEW WORK - ENERGY RECOVERY VENTILATOR CONTROL SCHEMATIC - EQUIPMENT SCHEDULE LEGEND AND DETAILS



2 KEY PLAN LOCATION - M50 BUILDING  
SCALE = N.T.S.



1 KEY PLAN LOCATION OTTAWA-MTL RD CAMPUS  
SCALE = N.T.S.

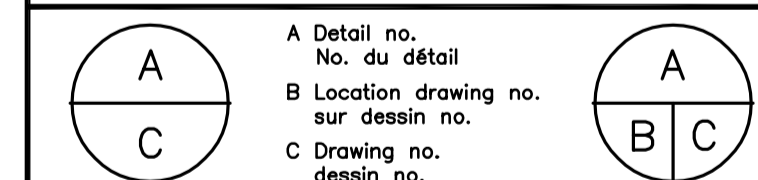


3 MISC. PICS - ROOM 186 E  
N.T.S.

**KEY PLAN PLAN CLÉ**

0	DD MM YYYY	XXXX	???
No.	Date	Revision	By: Par:
Date Printed	DD MM YYYY	Date imprimée	

- Verify all dimensions and site conditions and be responsible for same
- Vérifier toutes les dimensions et l'état des lieux et en assumer la responsabilité



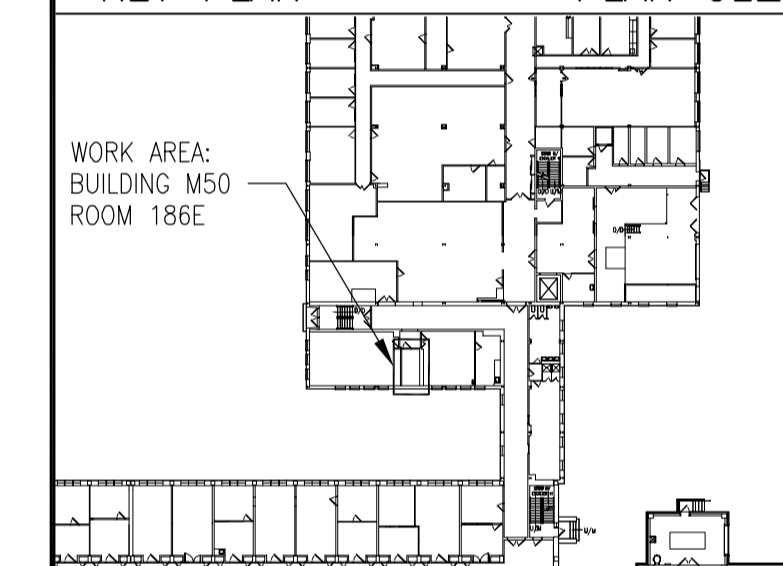
project	BUILDING M-50-ROOM 186E VENTILATION MODIFICATIONS			project
drawing	MONTREAL ROAD CAMPUS			dessin
designed	S.F./J.D.G./K.L.	conçu	date	date
drawn	S.F.	dessiné	scale	échelle
checked	J.W.G.	vérifié	sheet	feuille
approved	A.L.S.	approuvé	W.O.no.	D.T.no.
dwg.no.	6136-G00			dessin no.



**GENERAL NOTES**

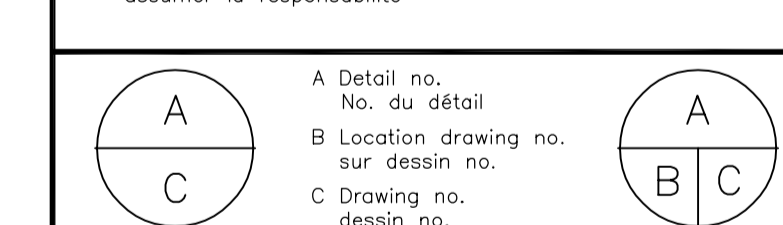
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**KEY PLAN PLAN CLÉ**



1	00 05 2022	ISSUED FOR TENDER/ÉMIS POUR L'APPEL D'OFFRES	JDG
No.	Date	Revision/Révision	By: Par:
Date Printed DD MM YYYY		Date imprimée	

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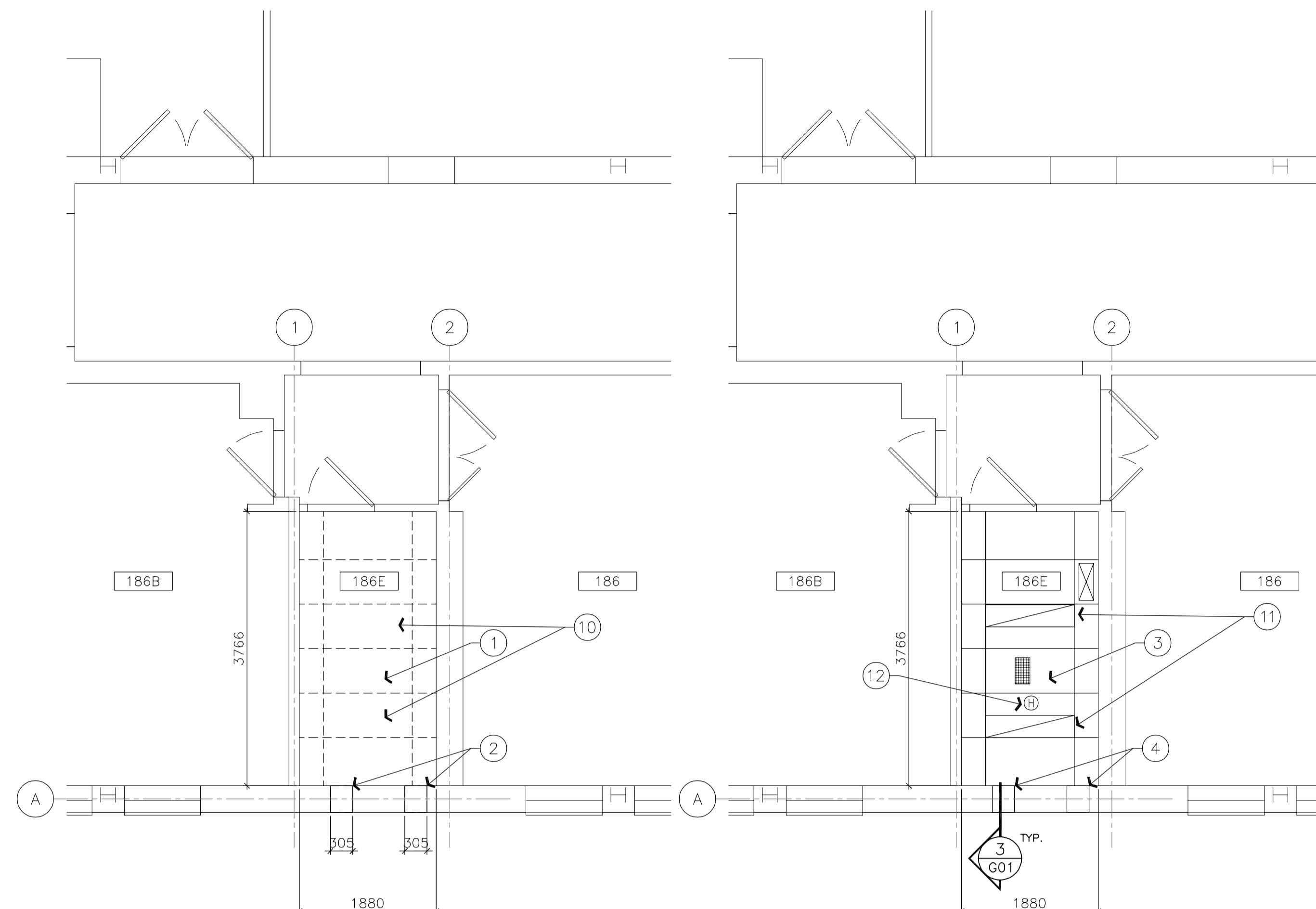
project **BUILDING M-50-ROOM 186E VENTILATION MODIFICATIONS** projet

project **MONTREAL ROAD CAMPUS** projet

drawing **ARCHITECTURAL + ELECTRICAL - DEMOLITION AND NEW WORK** dessin

designed <b>JDG/ KL</b>	conçu	date <b>APRIL / 2022</b>	date
drawn <b>JDG/ KL</b>	dessiné	scale <b>AS NOTED</b>	échelle
checked <b>SWH</b>	vérifié	sheet <b>1</b> of/de <b>1</b>	feuille
approved <b>ALS</b>	approuvé	W.O.no.	D.T.no.

dwg.no. **6136-G01** dessin no.



**1 REFLECTED CEILING PLAN - DEMOLITION**  
SCALE = 1:50

**2 REFLECTED CEILING PLAN - CONSTRUCTION**  
SCALE = 1:50

**3 SECTION DETAIL**  
SCALE = 1:20

**DEMOLITION NOTES - ARCHITECTURAL:**

- EXISTING SUSPENDED CEILING SYSTEM TO BE REMOVED, COMPLETE WITH ALL ASSOCIATED ATTACHMENT, T-BAR, HANGERS, PANELS, ETC. AND DISPOSE OF OFF SITE.
- NEW 305mm x 305mm WALL PENETRATION, COORDINATE WITH MECHANICAL FOR LOCATION ALONG WALL AND FOR ELEVATION OF NEW WALL. SCAN EXISTING BLOCK WALL PRIOR TO NEW PENETRATIONS.

**CONSTRUCTION NOTES - ARCHITECTURAL:**

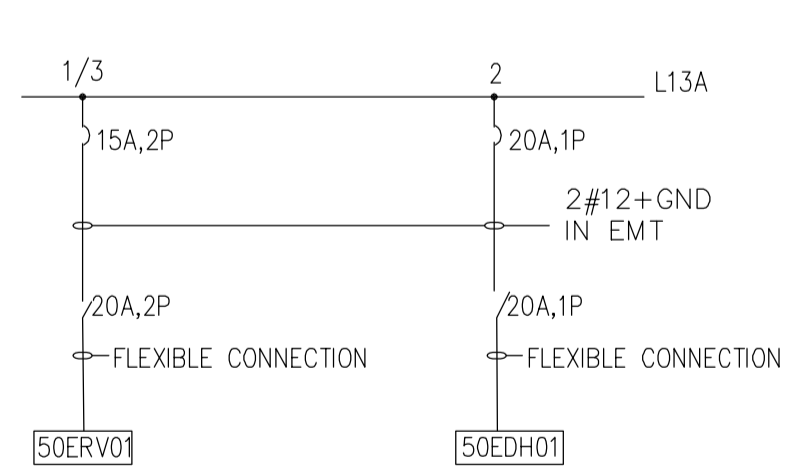
- PROVIDE AND INSTALL NEW SUSPENDED CEILING SYSTEM, REFER TO SPECIFICATIONS, COORDINATE CEILING HEIGHT WITH MECHANICAL DRAWINGS AND APPROVE WITH NRC DEPARTMENT REPRESENTATIVE.
- APPLY URETHANE FOAM SEALANT AROUND NEW DUCT PENETRATION AT INSULATION SHEATHING AND EXISTING WALL SHEATHING. PROVIDE FULLY-ADHERED OR LIQUID APPLIED AIR CONTROL MEMBRANE APPLIED OVER EXISTING WALL SHEATHING TO FORM CONTINUOUS AIR CONTROL.
- PROVIDE AND INSTALL NEW "L" SHAPED LINTEL: L89 x 102 x 6.4.
- EXISTING STEEL BEAM TO REMAIN.
- 305mm x 305mm DUCT. REFER TO MECHANICAL.
- EXISTING BRICK TO REMAIN.
- EXISTING CONCRETE BLOCK TO REMAIN.

**DEMOLITION NOTES - ELECTRICAL:**

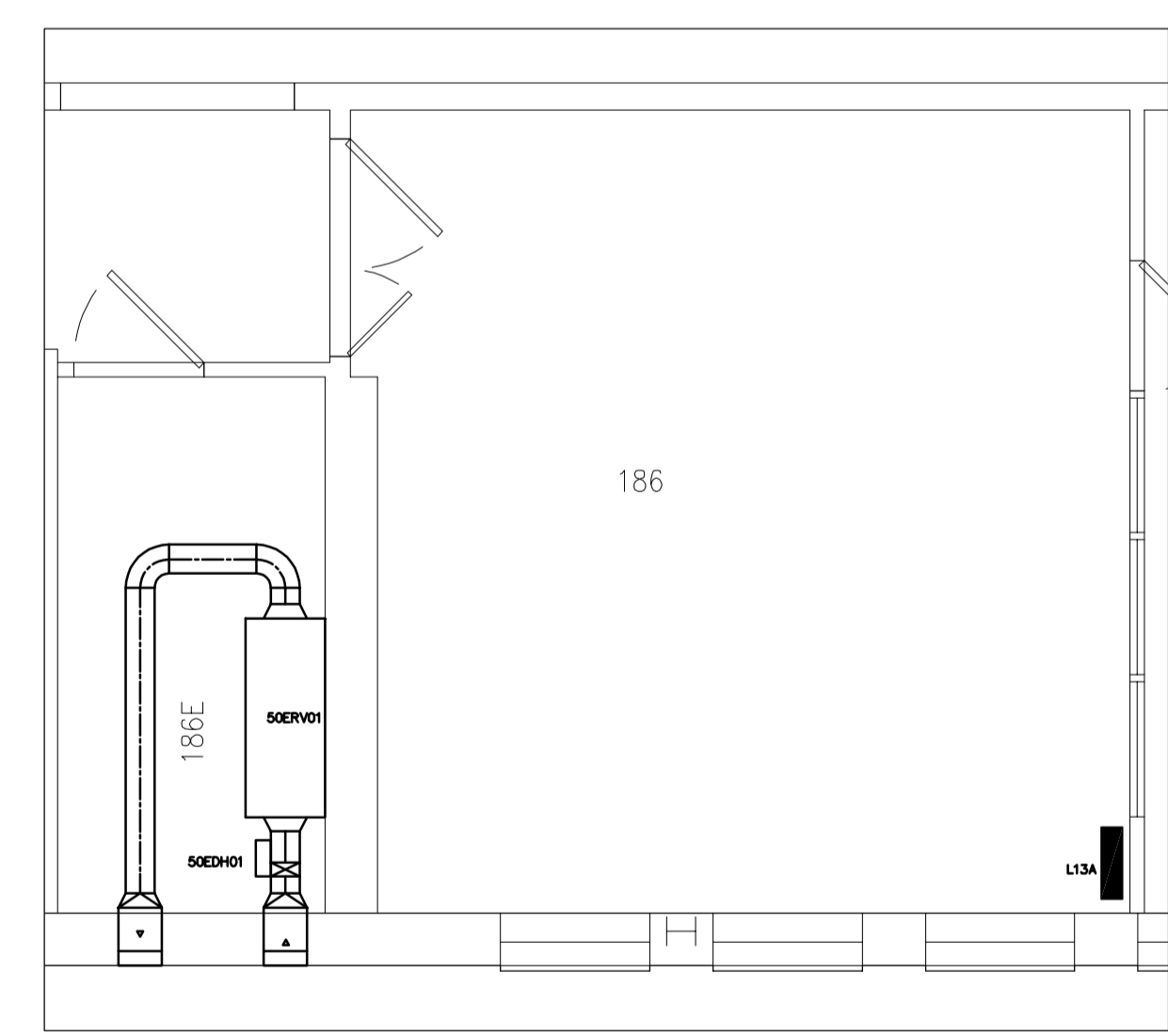
- DISCONNECT AND REMOVE (2) EXISTING 1X4 RECESSED LIGHT, RETAIN EXISTING CIRCUIT FOR NEW LIGHT.

**NEW WORK NOTES - ELECTRICAL:**

- PROVIDE (2) NEW 120V LED RECESSED LIGHT FIXTURE IN SUSPENDED CEILING.
  - SIGNIFY DAY-BRITE CFL, FLUXGRID 1X4, 4000K, 3000 LUMEN, INTEGRAL SENSOR, 1FG30L8404DUNVDM-SWZCS.
  - PROVIDE SURFACE MOUNT ZIGBEE WIRELESS DIMMER SWITCH, PHILIPS,UD8451/10 ZGP SWITCH DM 2B.
  - WIRED TO EXISTING CIRCUIT.
  - FOR SUSPENDED CEILING INSTALLATIONS SUPPORT EACH LUMINAIRE INDEPENDENTLY OF THE CEILING SUPPORT SYSTEM WITH SEPARATE CHAINS AT EACH END. NO. 80 STEEL SASH CHAIN MINIMUM.
- EXISTING F/A HEAT DETECTOR TO BE REINSTATED TO CEILING
- PROVIDE POWER TO HVAC EQUIPMENT
  - PROVIDE NEW WIRING AS SHOWN
  - CONNECT TO EXISTING BREAKER, UPDATE PANEL SCHEDULE.
  - PROVIDE MOTOR RATED TOGGLE SWITCH ATTACHED TO UNIT.



**4 WIRING DIAGRAM**  
SCALE =



**5 PARTIAL FLOOR PLAN**  
SCALE = 1:50

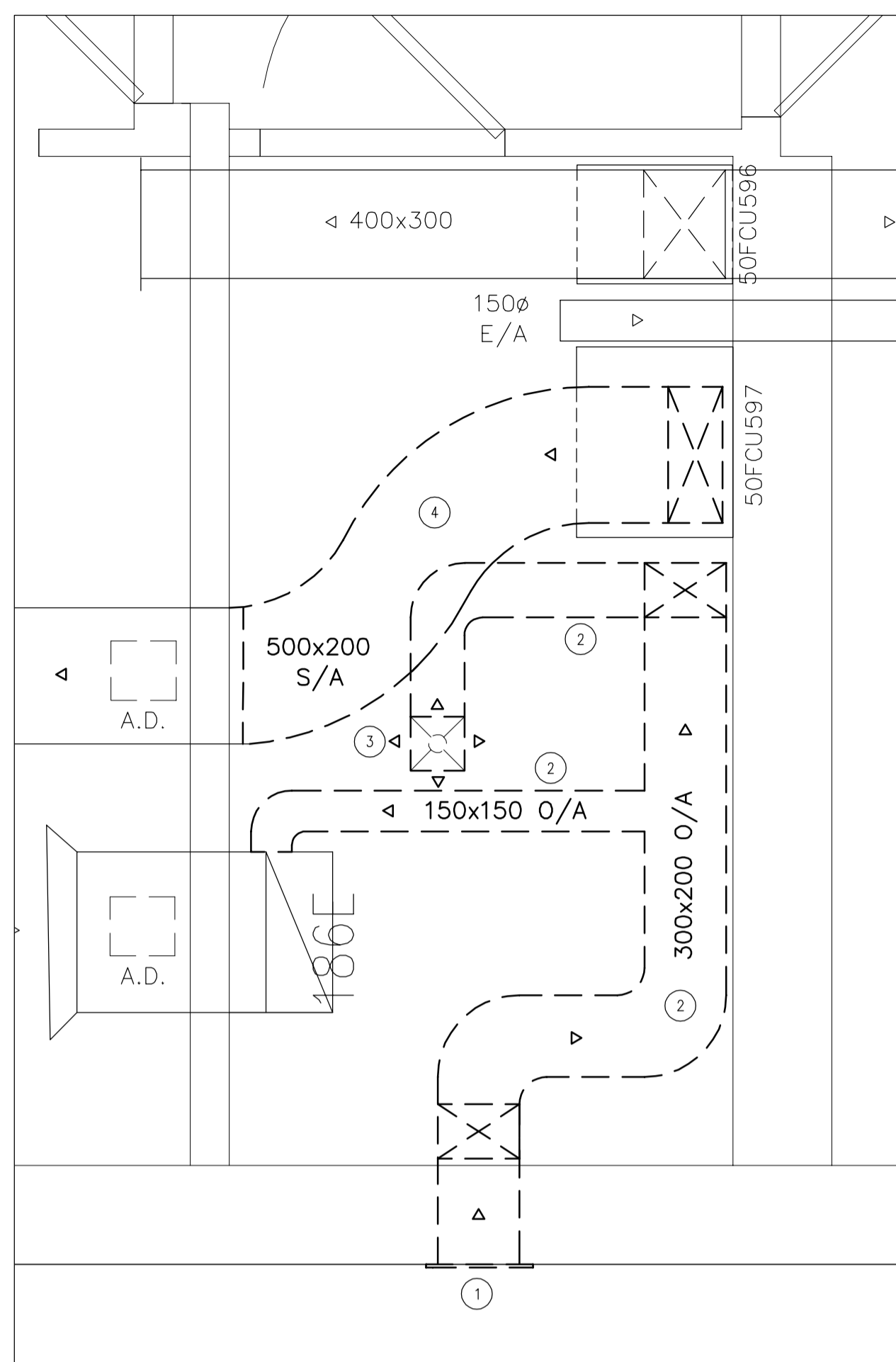
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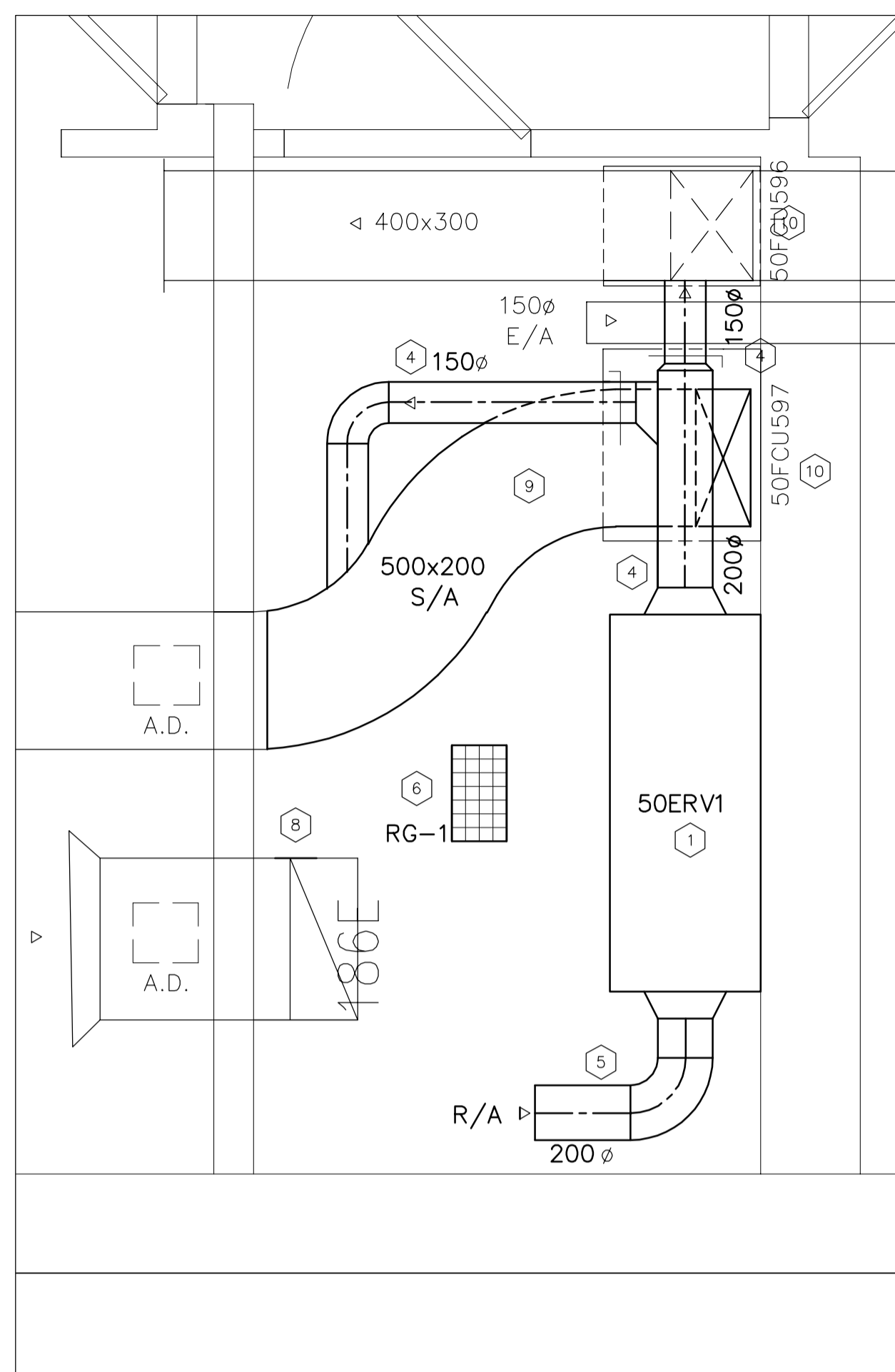
MECHANICAL DRAWING LIST	
DWG NO.	DRAWING TITLE
XXXX-M01	---
XXXX-M02	---

MECHANICAL LINE TYPE LEGEND	
LINE	DESCRIPTION
---	INDICATES NEW
- - -	INDICATES EXISTING (TO REMAIN)
- · - · -	INDICATES DEMOLISHED/ REMOVED

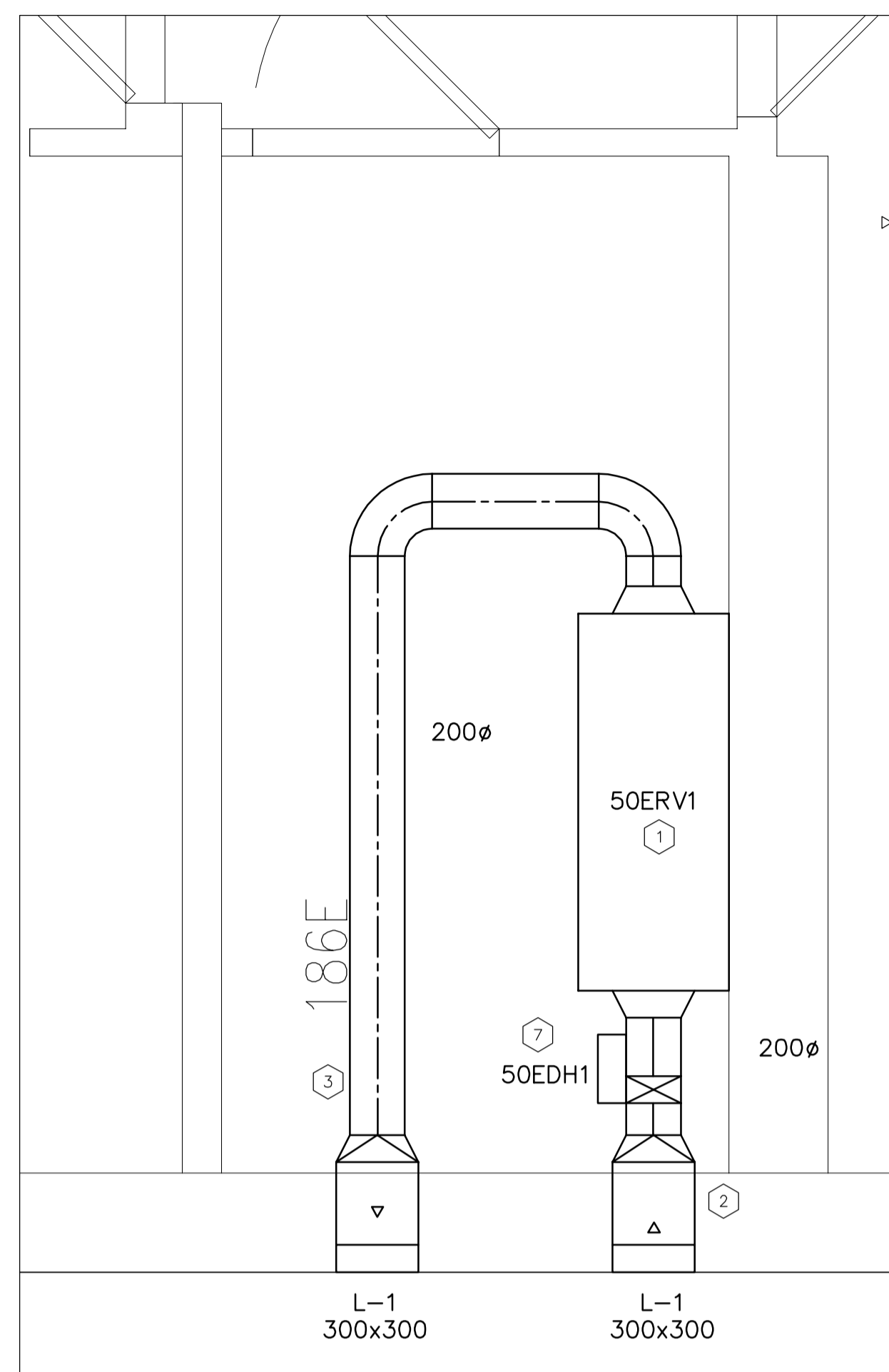
MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
[Symbol]	FAN COIL UNIT
[Symbol]	ENERGY RECOVERY VENTILATOR
[Symbol]	FLEXIBLE CONNECTION
[Symbol]	ACOUSTICALLY LINED DUCT
[Symbol]	THERMALLY INSULATED DUCT
[Symbol]	ROUND DUCT UP
[Symbol]	RECTANGULAR SUPPLY DUCT UP
[Symbol]	RECTANGULAR RETURN/EXH DUCT UP
[Symbol]	RECTANGULAR SUPPLY DUCT DOWN
[Symbol]	RECTANGULAR RETURN/EXH DUCT DOWN
[Symbol]	FLEX DUCT
[Symbol]	RECTANGULAR TAKE OFF
[Symbol]	RECTANGULAR TAKE OFF C/W BALANCING DAMPER
[Symbol]	ROUND TAKE OFF C/W BALANCING DAMPER
[Symbol]	TEMPERATURE SENSOR
[Symbol]	TEMPERATURE AND HUMIDITY SENSOR
[Symbol]	MOTORIZED DAMPER MOTOR
[Symbol]	FLOW SWITCH
[Symbol]	HUMIDITY SENSOR
[Symbol]	PRESSURE SENSOR (DOC)
[Symbol]	START-STOP SENSOR
[Symbol]	FLOW SENSOR
[Symbol]	PRESSURE DIFFERENTIAL SENSOR



**1** MECHANICAL - DEMOLITION  
 MO1 SCALE = 1:20



**2** MECHANICAL (LOW LEVEL) - NEW WORK  
 MO1 SCALE = 1:20



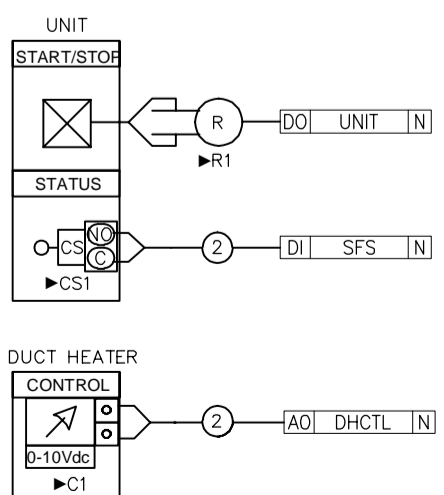
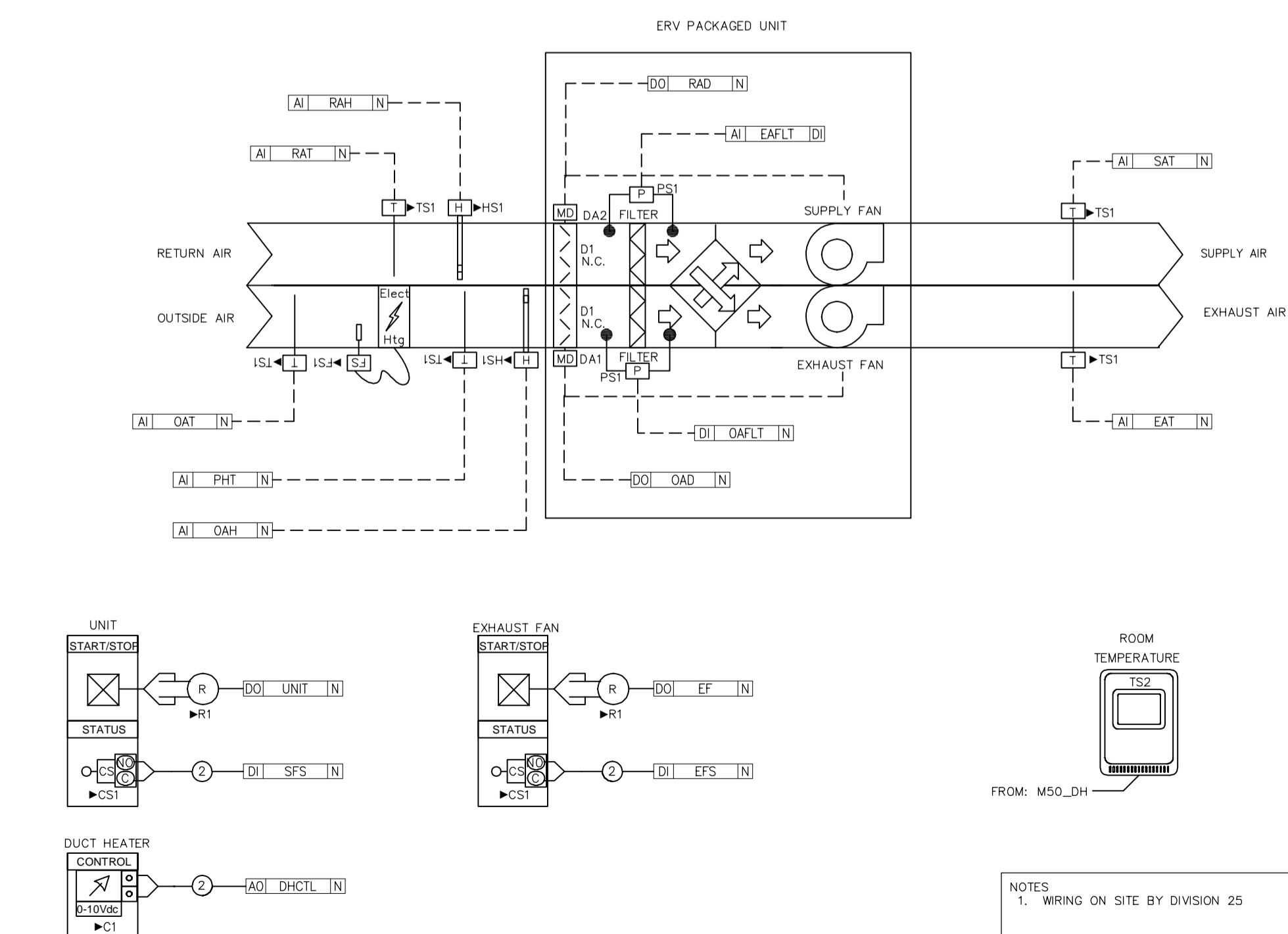
**3** MECHANICAL (HIGHER LEVEL) - NEW WORK  
 MO1 SCALE = 1:20

**DEMOLITION NOTES:**

- EXISTING OUTSIDE AIR LOUVER (300x150mm) TO BE REMOVED AS INDICATED ON DRAWINGS ALONG WITH ASSOCIATED OUTSIDE AIR DUCTWORK INSIDE ROOM 186E. BLOCK OFF EXISTING WALL PENETRATION TO MATCH EXISTING. REPAIR ALL DAMAGE TO MATCH EXISTING. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.
- EXISTING OUTSIDE AIR DUCTWORK TO BE REMOVED AS INDICATED ON DRAWING ALONG WITH DUCTWORK SUPPORTS AND INSULATION.
- EXISTING CEILING REGISTER TO BE REMOVED AS INDICATED ON DRAWING.
- EXISTING SUPPLY AIR DUCTWORK TO BE REMOVED AS INDICATED ON DRAWING.

**NEW WORK NOTES:**

- PROVIDE NEW ENERGY RECOVERY VENTILATOR AS INDICATED ON DRAWINGS ALONG WITH SUPPORTS. REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS. REFER TO DETAIL 4 ON PRESENT DRAWING FOR CONTROLS REQUIREMENTS. MAINTAIN CLEARANCE AS PER MANUFACTURER'S INSTRUCTIONS.
- PROVIDE NEW OUTDOOR AIR DUCTWORK, ALONG WITH INTAKE LOUVER, TRANSITIONS, SUPPORTS AND ACCESSORIES, AS INDICATED ON DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
- PROVIDE NEW EXHAUST AIR DUCTWORK ALONG WITH EXHAUST LOUVER, TRANSITIONS, SUPPORTS AND ACCESSORIES, AS INDICATED ON DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
- PROVIDE NEW FRESH AIR DUCTWORK ALONG WITH BALANCING DAMPERS, TRANSITIONS AND SUPPORTS AS INDICATED ON DRAWINGS. BALANCE TO THE FOLLOWING AIRFLOWS: TO 50FCU596 125 CFM, TO 50FCUXXX 125 CFM.
- PROVIDE NEW RETURN AIR DUCTWORK AS INDICATED ON DRAWINGS.
- PROVIDE NEW RETURN AIR GRILLE AS INDICATED ON DRAWINGS. COORDINATE EXACT LOCATION WITH NEW CEILING CONFIGURATION. REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS.
- PROVIDE NEW ELECTRIC DUCT HEATER AS INDICATED ON DRAWINGS. REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL DETAILS.
- OPENING IN EXISTING AIR TRANSFER DUCT TO BE CAPPED.
- PROVIDE NEW SUPPLY AIR DUCTWORK AS INDICATED ON DRAWINGS.
- EXISTING FAN COIL UNITS TO REMAIN.



NOTES  
 1. WIRING ON SITE BY DIVISION 25

**4** ENERGY RECOVERY VENTILATOR (ERV) CONTROL SCHEMATIC  
 MO1 SCALE = NTS

**NEW CONTROL POINTS**

I/O TERM	I/O TYPE	POINT TAG	SYSTEM	DESCRIPTION	DEVICE PART NUMBER
DO1	DO	UNIT	M50_ERV1	ERV UNIT ENABLE	RRM002A24V
DO2	DO	EF	M50_ERV1	EXHAUST FAN ENABLE	RRM002A24V
DO3	DO	OAD	M50_ERV1	OUTSIDE AIR DAMPER	BEL-LF24-S US
DO4	DO	RAD	M50_ERV1	RETURN AIR DAMPER	BEL-LF24-S US
LS1	AV	RMT_SP	M50_ERV1	ROOM TEMPERATURE SETPOINT	LIVING SENSOR
LS1	AV	RMT	M50_ERV1	ROOM TEMPERATURE	LIVING SENSOR
Ub1	DI	SFS	M50_ERV1	SUPPLY FAN STATUS	E112-800
Ub2	DI	EFS	M50_ERV1	EXHAUST FAN STATUS	E112-800
Ub3	AI	SAT	M50_ERV1	SUPPLY AIR TEMPERATURE	ETD500-12
Ub4	AI	EAT	M50_ERV1	EXHAUST AIR TEMPERATURE	ETD500-12
Ub5	AI	RAT	M50_ERV1	RETURN AIR TEMPERATURE	ETD500-12
Ub6	AI	RAH	M50_ERV1	RETURN AIR HUMIDITY (RELATIVE)	HED3V5X
Ub7	DI	OAFLT	M50_ERV1	OUTSIDE AIR FILTER STATUS	PAS02
Ub8	DI	EAFLT	M50_ERV1	EXHAUST AIR FILTER STATUS	PAS02
Ub9	AI	OAT	M50_ERV1	OUTSIDE AIR TEMPERATURE (DRY BULB)	ETD500-12
Ub10	AI	OAH	M50_ERV1	OUTSIDE AIR HUMIDITY (RELATIVE)	HED3V5X
Ub11	AI	PHT	M50_ERV1	PREHEAT AIR DUCT TEMPERATURE	ETD500-12
Ub12	AO	DHCTL	M50_ERV1	DUCT HEATER CONTROL	0-10VDC OUTPUT

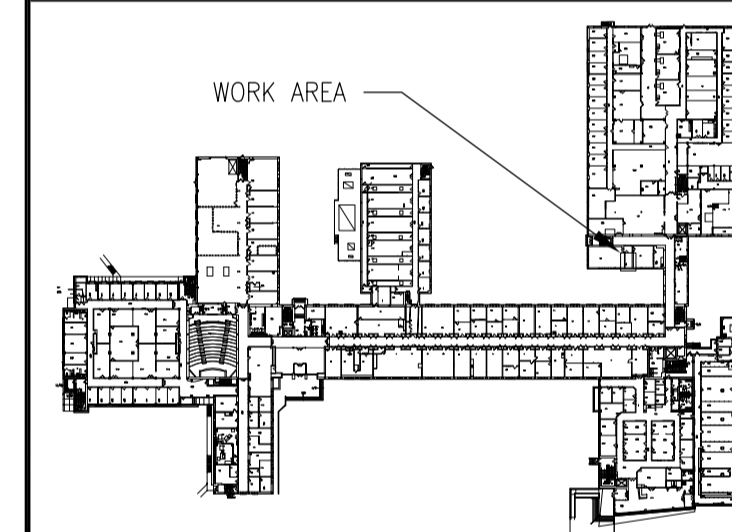
ENERGY RECOVERY VENTILATOR SCHEDULE												
TAG	SERVICE	MAKE	MODEL	FAN DESCRIPTION				ELECTRICAL				
				QTY	TYPE	AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (in. w.g.)	FILTERS	VOLTS	PH	HZ	MCA
50ERV1	RM. 186E	RENEWARE	HE-1XJNH	1	INTAKE	250	0.75	2" MERV-8	240	1	60	10.8
				1	EXHAUST	250	0.75	2" MERV-8				

LOUVER SCHEDULE									
TAG	TYPE	SERVICE	AIR FLOW (CFM)	MIN. FREE AREA PERCENTAGE	DIMENSIONS			MANUFACTURER	MODEL
					WIDTH (in)	HEIGHT (in)	DEPTH (in)		
L-1	INTAKE/EXHAUST	ERV1	250	50%	12	12	6	PRICE	DEB35

GRILLES AND DIFFUSERS				
TAG	TYPE	MOUNTED	TYPE	NOTES
RG-1	RETURN	CEILING	EGGCRATE	1

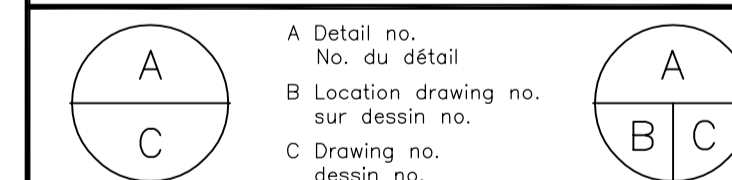
DUCT HEATER SCHEDULE											
TAG	SERVICE	DUCT DIMENSIONS D (in.)	MAKE	MODEL	AIR FLOW (CFM)	ELECTRIC HEATING COIL					
						CAPACITY (kW)	STAGES	SIGNAL	V	PH	HZ
50EDH1	ERV INTAKE	8	ELIOS	DF CF00HB	250	2	1	MODULATING	120	1	60

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designing **MONTREAL ROAD CAMPUS** dessiné

drawing **MECHANICAL - DEMOLITION AND NEW WORK** dessin

designed **S.F.** conçu **APRIL / 2022** date

drawn **S.F.** dessiné **AS NOTED** échelle

checked **J.W.G.** vérifié **3** of/de **3** feuille

approved **A.L.S.** approuvé W.O.no. D.T.no.

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