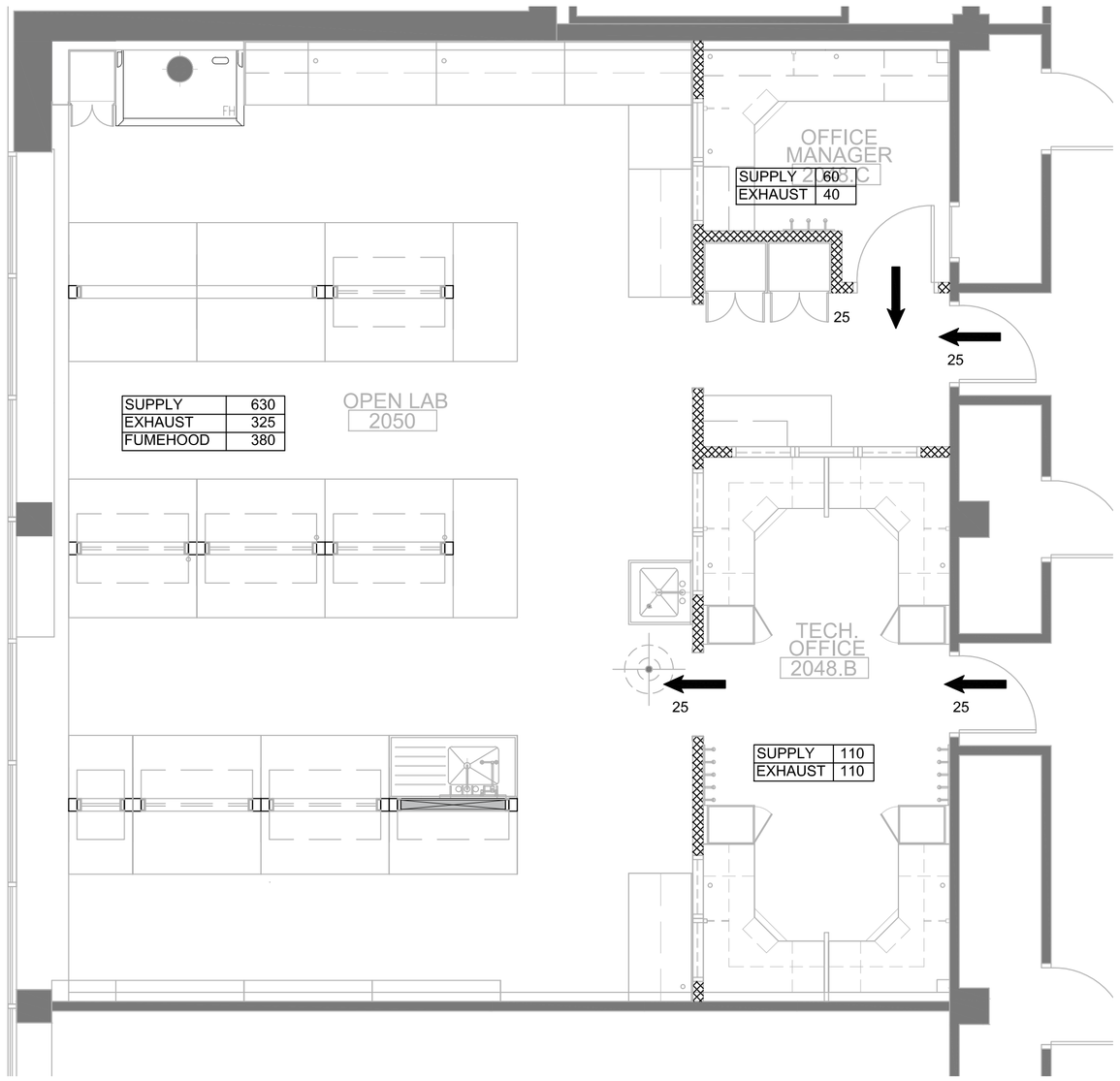
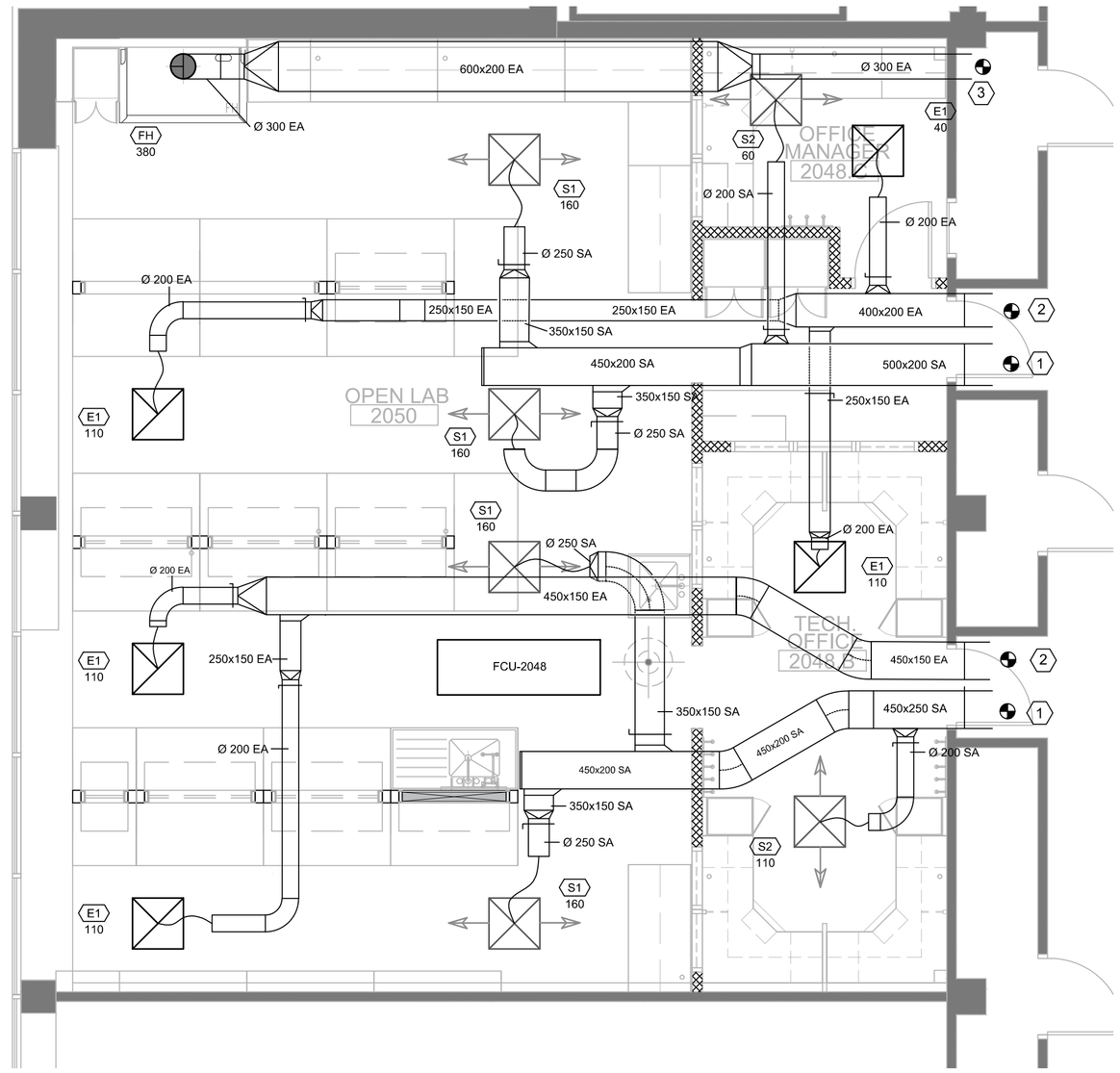


2 M-101 DIRECTIONAL AIRFLOW DIAGRAM
SCALE 1:50



1 M-101 HVAC PLAN
SCALE 1:50

GENERAL NOTES

A. CONTRACTOR TO FIELD VERIFY DIMENSIONS AND LOCATION OF ALL EXISTING MECHANICAL, PLUMBING, ELECTRICAL AND MISCELLANEOUS FIXTURES TO BE DEMOLISHED OR RELOCATED BEFORE RENOVATION WORK BEGINS.

B. DIMENSIONS ARE TO FACE OF FINISHED MATERIALS, UNLESS OTHERWISE NOTED.

C. CEILING HEIGHT IS 2450 MM. [8'-0"] UNLESS OTHERWISE NOTED.

D. DUCTWORK DETAILS:
- MAX FLEX DUCT LENGTH 1.8M, PROVIDE SPIRAL GALVANIZED DUCT EXTENSIONS AS REQUIRED. USE SEALING COMPOUND AT ALL CONNECTION POINTS.
- MECHANICALLY FASTEN FLEX DUCT TO SHEET METAL USING MECHANICAL FASTENERS AND SEALING COMPOUND.
- CENTERLINE RADIUS OF BENDS IN FLEXIBLE DUCTWORK TO BE GREATER THAN ONE DUCT DIAMETER.
- DIMENSIONS OF DUCT RUN OUTS TO GRILLES AND DIFFUSERS TO MATCH GRILLE/DIFFUSER NECK.
- ROUNDED ELBOWS R/D = 1.5; MITERED ELBOWS MUST HAVE TURNING VANES OR SPLITTER AS SHOWN.
- TRANSITIONS: MAX ANGLE BETWEEN DUCT SIDE AND FLOW IS 20º
- ENSURE SEPARATION BETWEEN OVERLAPPING DUCTWORK.

E. ALL DUCTWORK AND DIFFUSERS/GRILLES TO BE SUPPORTED WITH CABLE/STRAPPING FROM GYPSUM SECONDARY CEILING ABOVE. ENSURE SUPPORT IS FIXED INTO STUD OF CEILING STRUCTURE. NO ITEMS SHALL BE SOLELY SUPPORTED BY T-BARL LAY IN TILE CEILING

F. SEAL ANY PENETRATIONS THROUGH SOLID CEILING LOCATED ABOVE T-BAR WITH SILICONE.

G. ALL AIRFLOWS IN THE SPACE ARE CONSTANT FLOW HARD BALANCED AS SHOWN ON THIS PAGE TO ACHIEVE VOLUMETRIC OFFSETS AS SHOWN.

H. PROVIDE GRILLES AND DIFFUSERS WITH REAR PLENUM FOR DUCT CONNECTION.

KEY NOTES

1. SUPPLY DUCT TO SPACE TO CONNECT TO EXISTING REHEAT COIL AND AIRFLOW CONTROL DAMPER IN CORRIDOR. TRANSITION DUCT TO MATCH CONNECTION SIZE OF REHEAT COIL.

2. EXHAUST DUCT TO SPACE TO CONNECT TO EXISTING MAIN IN CORRIDOR. TRANSITION DUCT IN CORRIDOR TO MATCH CONNECTION SIZE OF AIRFLOW CONTROL DAMPER.

3. FUME HOOD EXHAUST TO CONNECT TO EXISTING RISER IN SHAFT. TRANSITION TO ROUND DUCT SIZED TO MATCH EXISTING IN SPACE. COORDINATE WITH DEPARTMENT REPRESENTATIVE FOR WORKS REQUIRED

AAFC Lab 2048 & 2050 Renovation Airflow Calculations

	Area	Area	Ceiling Height	Ceiling Height	Volume	Volume	Max ACH	Offset	Offset	Max ACH Supply	Max ACH Supply	Max ACH General Exhaust	Max ACH General Exhaust	Min OA Flow Req *	Min OA Flow Req *	Max Equip Exhaust	Max Equip Exhaust	Base Heat Load In Space **	Specialty Heat Load ****	Cooling Flow Req ***	Cooling Flow Req ***	Cooling Load Sup at ACH	Supplem. Cooling Req.	Max Supply Air Delivered	Max Exhaust Air Delivered
ROOMS	ft^2	m^2	ft	m	ft^3	m^3		cfm	lps	cfm	lps	cfm	lps	cfm	lps	cfm	lps	W	W	cfm	lps	W	W	cfm	cfm
OPEN LAB - 2050	997	92.6	8.00	2.45	8017	227	10	-150	-70	1335	630	1485	700	425	200	800	380	6715	5832	3460	1635	4840	7705	1335	685
OFFICE MANAGER - 2048	85	7.9	8.00	2.45	685	19	6	50	25	70	35	20	10	35	15	0	0	410	0	130	60	255	-	130	80
TECH OFFICE - 2048A	204	19.0	8.00	2.45	1641	46	6	0	0	165	80	165	80	85	40	0	0	740	0	235	110	600	-	235	235

GENERAL NOTES:
* PER ASHRAE 62.1 FOR LABORATORY SPACES. EXISTING SUPPLY SYSTEM IS 100% OA
** PER NIH DRM FOR LABORATORY EQUIPMENT, LIGHT, PERSON, AND EXTERIOR FENESTRATION HEAT LOADING. OFFICE SPACES PER ASHRAE. EXISTING FENESTRATION ASSUMED TO HAVE U-FACTOR OF 2.839 W/M.C AND SHADING COEFFICIENT OF 0.55
*** BASED ON 17C SUPPLY AIR TEMPERATURE AND 23C COOLING SETPOINT, CONFIRM WITH EXISTING SYSTEM. 15% SF INCLUDED
**** BASED ON SUPPLIED LABORATORY EQUIPMENT INFORMATION AND A 50% DIVERSITY LOAD

DUCTWORK TABLE

DUCT	MATERIAL	PRESSURE RATING (Pa)	SMACNA SEAL CLASS	CONSTRUCTION	NOTES
SUPPLY - CORRIDOR TERMINAL UNIT / REHEAT COIL CONNECTION TO ROOM	GALVANIZED STEEL	500	C	ROUND: SPIRAL WOUND WITH LOCKSEAM RECTANGULAR: LONGITUDINAL SEAMS PER SMACNA WITH PITTSBURGH LOCK; SEALANT APPLIED ON ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS. INSULATE WITH 25MM FOIL COVERED FIBREGLASS INSULATION	
EXHAUST - CORRIDOR TERMINAL UNIT CONNECTION TO ROOM	GALVANIZED STEEL	-500	C	ROUND: SPIRAL WOUND WITH LOCKSEAM RECTANGULAR: LONGITUDINAL SEAMS PER SMACNA WITH PITTSBURGH LOCK; SEALANT APPLIED ON ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS.	
SUPPLY & EXHAUST - BRANCH TAKEOFF TO ROOM, FLEXIBLE, LAST 1.8M TO GRD	ALUMINUM	+/- 500	C	SPIRAL WOUND WITH TRIPLE LOCK SEAM. SUPPLY DUCTWORK FACTORY WRAPPED WITH 25MM FOIL COVERED FIBREGLASS INSULATION	
FUME HOOD EXHAUST	316L STAINLESS STEEL	-2500	A	ALL WELDED	

Agriculture and Agri-Food Canada
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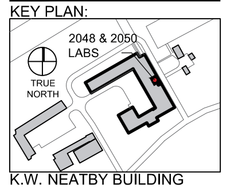
LICENSED PROFESSIONAL ENGINEER
May 10, 2018
R. J. A. GREGORY
100120857
PROVINCE OF ONTARIO

KEY PLAN:



K.W. NEATBY BUILDING

TRUE NORTH

ISSUE	DESCRIPTION	DATE
0	ISSUE FOR CONSTRUCTION	05/17/2018

Agriculture and Agri-Food Canada / Agriculture et Agroalimentaire Canada

K.W. NEATBY BUILDING- BUILDING 20
RENOVATION OF LABS 2048 & 2050

960 Carling Avenue
Ottawa, ON K1V 4A3

SHEET TITLE:
HVAC PLAN

SCALE:	AS INDICATED
DATE:	11-24-2017
DRAWN:	DO
CHECKED:	DO / RG
PROJECT:	74019668

SHEET NO:
M-101