HARROWGATE BUSINESS CENTRE

1450 FICTIONAL CRESCENT, LAKEVIEW, ON

NEW 3-STOREY OFFICE BUILDING | MECHANICAL | ISSUED FOR TENDER

FICTIONAL PROJECT. PREPARED AS A SALES SAMPLE. NOT FOR CONSTRUCTION.

DRAWING LIST

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M-002	MECHANICAL GENERAL NOTES
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M-102	SECOND FLOOR HVAC PLAN
M-103	THIRD FLOOR HVAC PLAN
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M-602	AIR DEVICE AND VAV SCHEDULES

BUILDING DATA

GROSS FLOOR AREA: 3 X 1,560 M2 (16,800 SF PER FLOOR)

OCCUPANCY: GROUP D, BUSINESS AND PERSONAL SERVICES

HVAC: AHU-1 WITH VAV BOXES (OFFICE FLOORS), RTU-1 (LOBBY)

IT AND ELECTRICAL ROOMS: FAN COILS WITH AIR-COOLED HEAT PUMPS

DESIGN CONDITIONS: -24 C / 31 C DB

NORTHLINE MECHANICAL CONSULTANTS (FICTIONAL)

CONSULTING ENGINEERS

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BRAMBLEWOOD PROPERTIES INC. (FICTIONAL)

SAMPLE, NOT FOR CONSTRUCTION

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SCALE: 1:100 UNLESS NOTED

PROJECT NO. 2614

SHEET TITLE:

COVER SHEET AND DRAWING LIST

SHEET NO.

M-000

MECHANICAL LEGEND

- SD CEILING SUPPLY DIFFUSER, SQUARE
- SD LINEAR SLOT DIFFUSER
- RG RETURN AIR GRILLE
- EG EXHAUST AIR GRILLE

- VAV BOX WITH HOT WATER REHEAT COIL
- DUCT UP / DOWN
- MOTORIZED DAMPER
- FIRE DAMPER
- THERMOSTAT / SPACE SENSOR
- DEVICE TAG: TYPE, AIRFLOW (CFM) BELOW

ABBREVIATIONS

AFF ABOVE FINISHED FLOOR
AHU AIR HANDLING UNIT
CFM CUBIC FEET PER MINUTE
EF EXHAUST FAN
FCU FAN COIL UNIT
HP HEAT PUMP
RTU ROOFTOP UNIT
TYP TYPICAL
VAV VARIABLE AIR VOLUME
UNO UNLESS NOTED OTHERWISE
ESP EXTERNAL STATIC PRESSURE
MCA MINIMUM CIRCUIT AMPACITY

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SHEET TITLE:
MECHANICAL LEGEND AND ABBREVIATIONS

SHEET NO.
M-001

MECHANICAL GENERAL NOTES

NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC. COORDINATE ALL DUCT ROUTING WITH STRUCTURE, LIGHTING AND SPRINKLERS.
2. AIR DEVICE QUANTITIES IN THE SCHEDULES ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY QUANTITIES AGAINST THE PLANS.
3. WHERE A DEVICE IS NOTED TYP. THE TAG APPLIES TO ALL SIMILAR DEVICES IN THE SAME ROOM.
4. TESTING, ADJUSTING AND BALANCING: AN INDEPENDENT AABC OR NEBB CERTIFIED AGENCY SHALL BALANCE ALL AIR DEVICES, VAV BOXES, FANS AND UNITS TO +/-10% OF DESIGN AIRFLOW.
5. THE BALANCING AGENCY SHALL SUBMIT A PRE-CONSTRUCTION DESIGN REVIEW AND A FINAL REPORT. RECORD AIRFLOW AT EVERY DEVICE.
6. ALL FIRST FLOOR WASHROOM WORK IS SHOWN ON THE ENLARGED PLAN M-201.
7. PROVIDE ACCESS DOORS FOR ALL VAV BOXES, DAMPERS AND FAN COIL UNITS ABOVE INACCESSIBLE CEILINGS.
8. ALL EQUIPMENT TO BE STARTED UP BY THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE.

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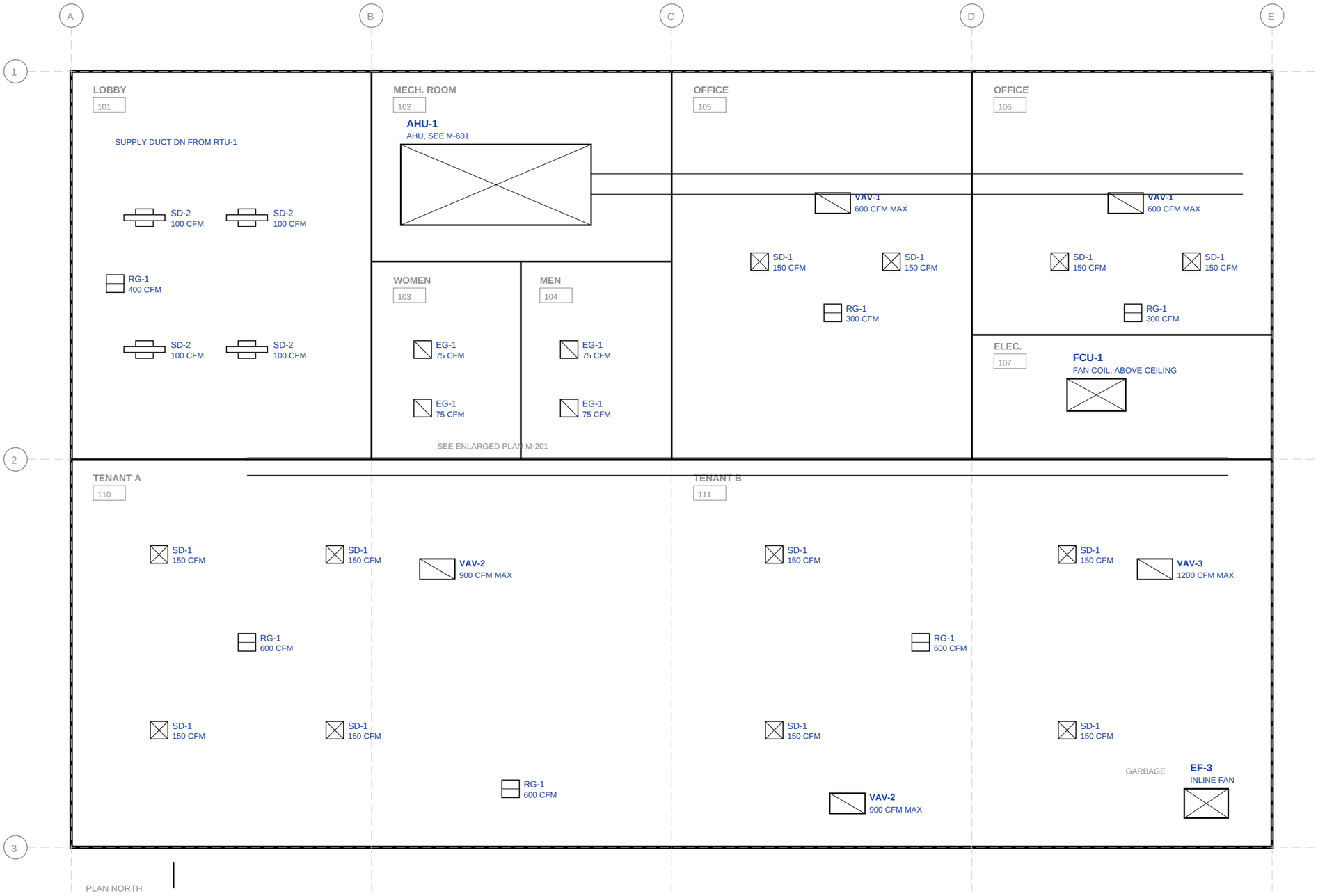
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SHEET TITLE:
MECHANICAL GENERAL NOTES

SHEET NO.
M-002

FIRST FLOOR HVAC PLAN

SCALE: 1:100



SHEET NOTES:

1. BALANCE ALL VAV BOXES TO THE MAXIMUM AND MINIMUM AIRFLOWS ON M-602.

KEY PLAN: FIRST FLOOR

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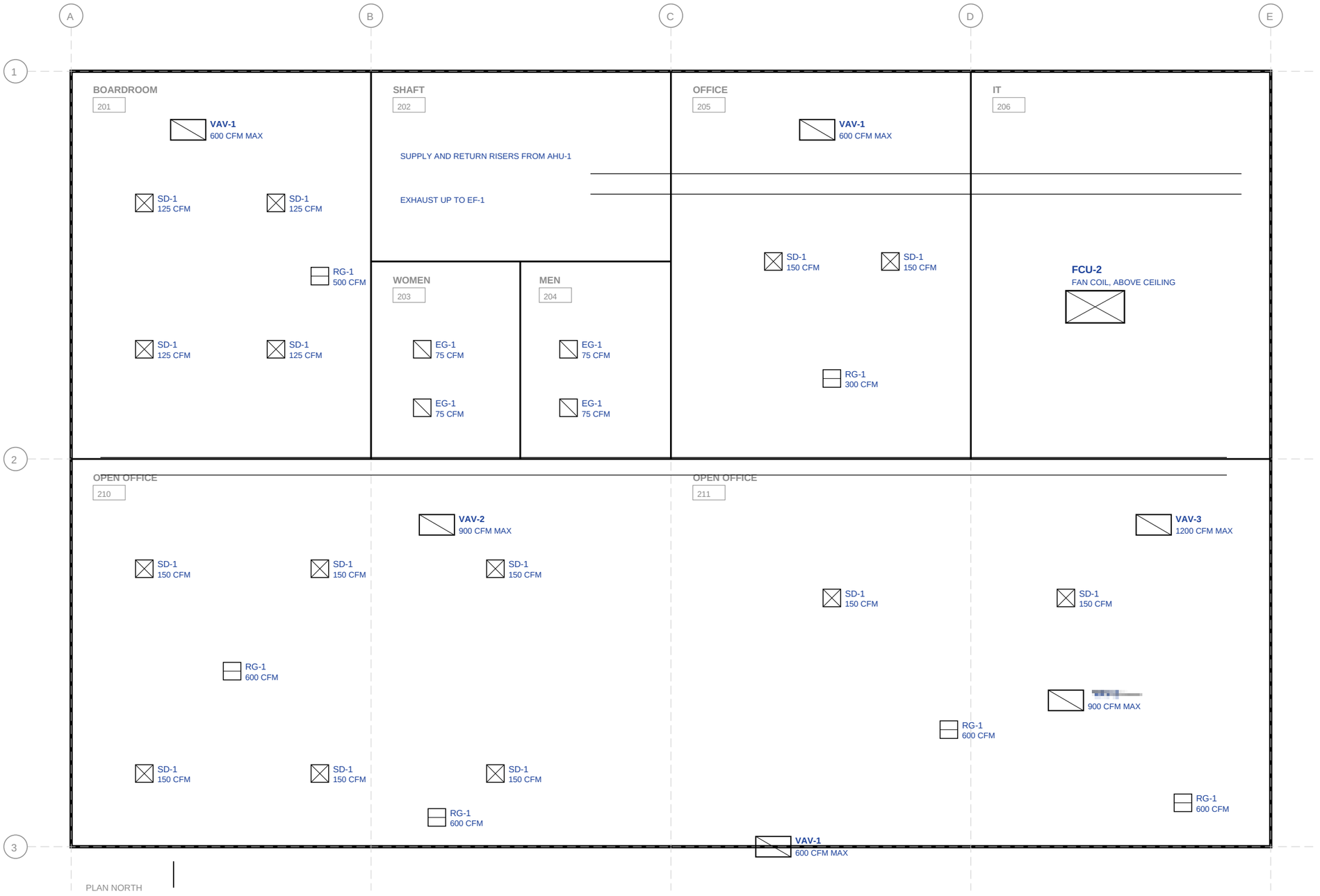
FIRST FLOOR HVAC PLAN

SHEET NO.

M-101

SECOND FLOOR HVAC PLAN

SCALE: 1:100



KEY PLAN: SECOND FLOOR

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SHEET TITLE:

SECOND FLOOR HVAC PLAN

SHEET NO.

M-102

THIRD FLOOR HVAC PLAN

SCALE: 1:100



KEY PLAN: THIRD FLOOR

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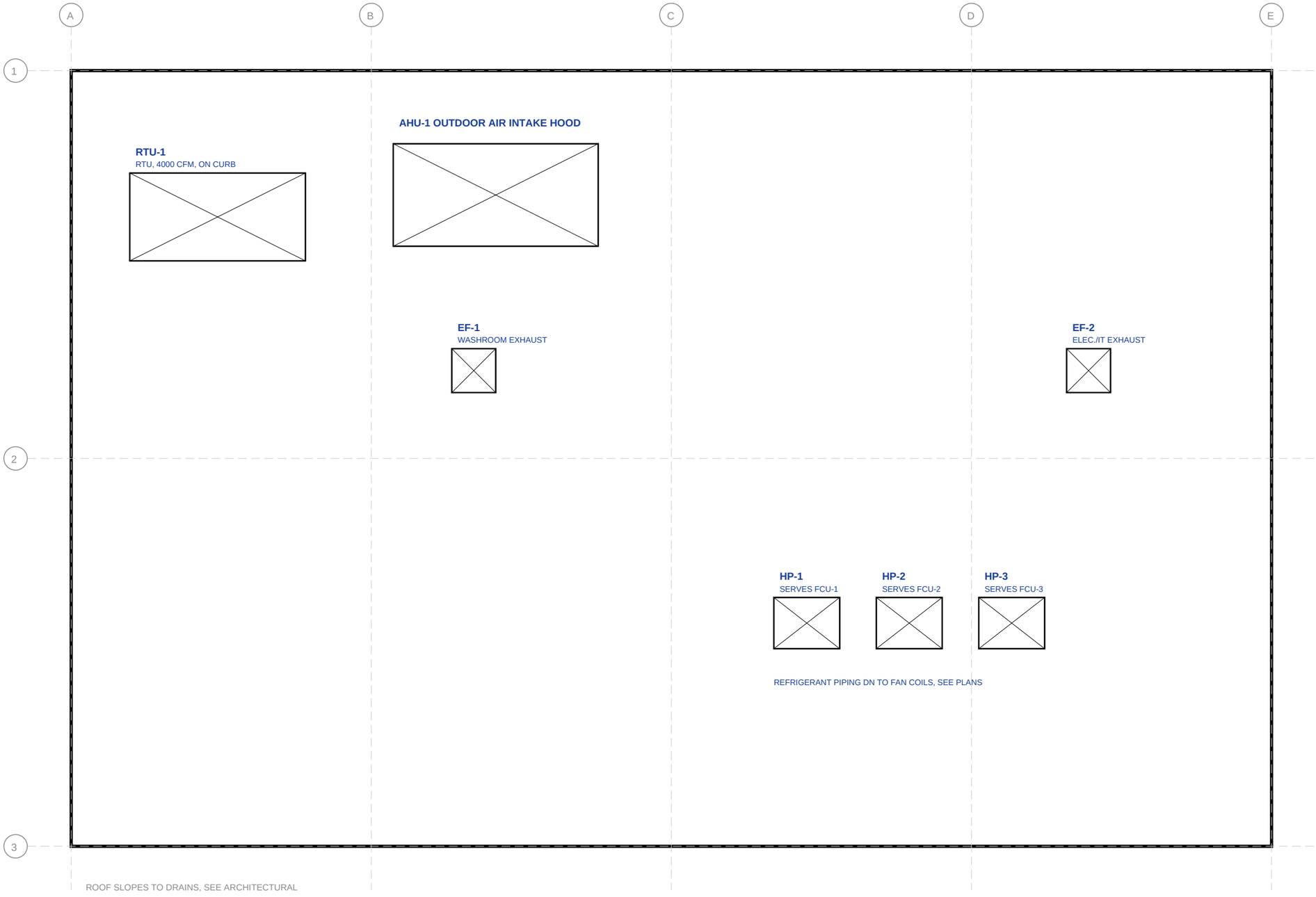
THIRD FLOOR HVAC PLAN

SHEET NO.

M-103

ROOF HVAC PLAN

SCALE: 1:100



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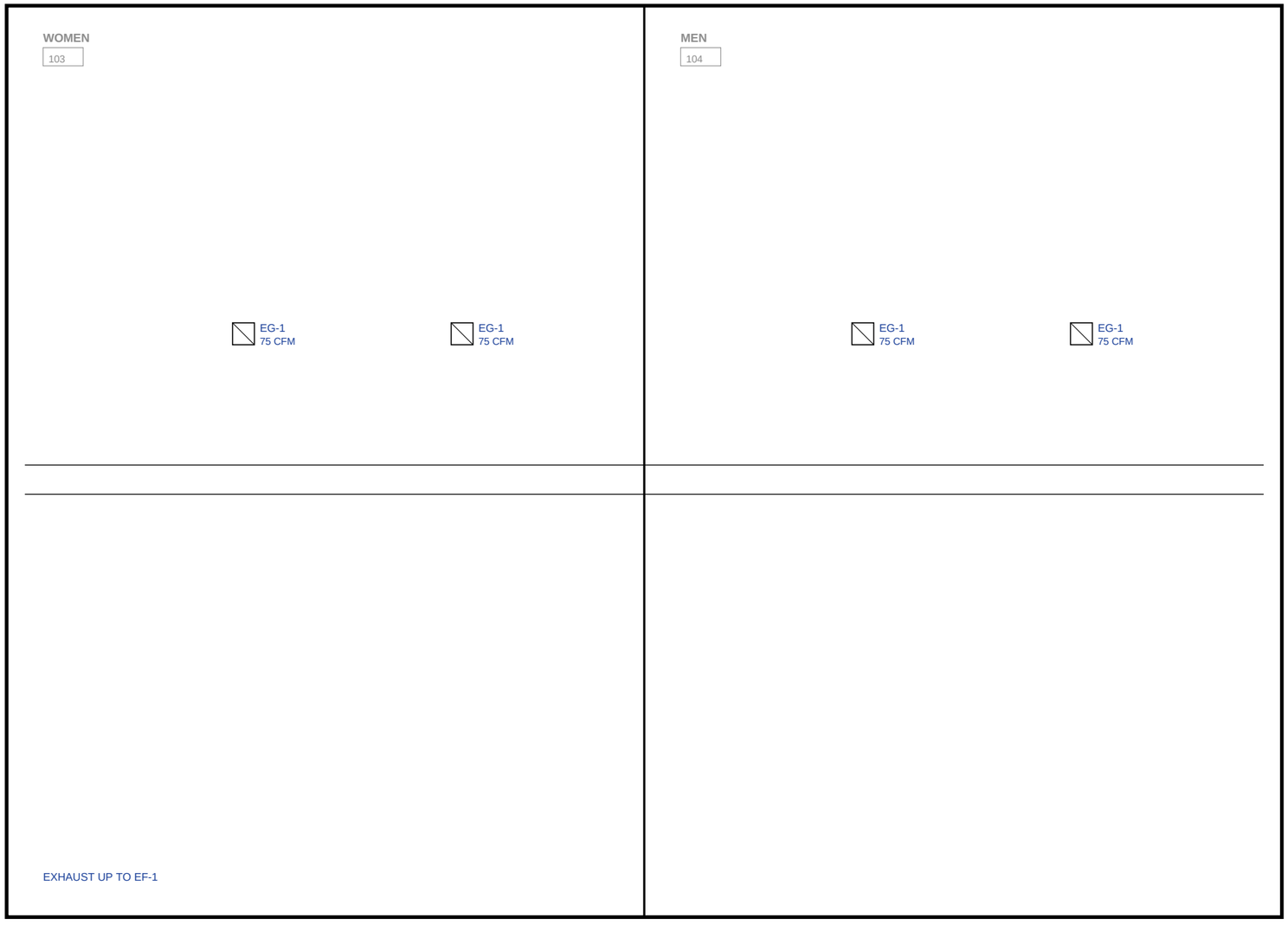
ROOF HVAC PLAN

SHEET NO.

M-104

FIRST FLOOR ENLARGED WASHROOM HVAC PLAN

SCALE: 1:25



SHEET NOTES:

1. PROVIDE DOOR UNDERCUTS OF 19 MM FOR MAKE-UP AIR. NO TRANSFER GRILLES.

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SHEET TITLE:

FIRST FLOOR ENLARGED WASHROOM HVAC PLAN

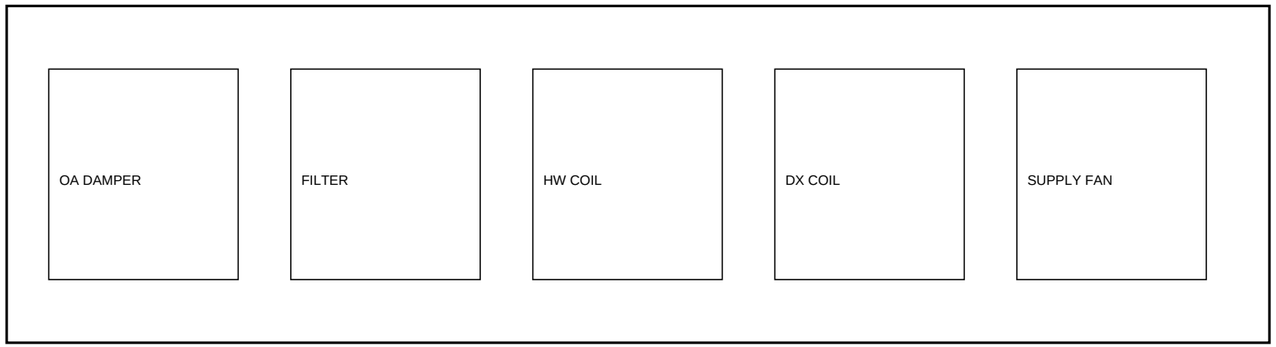
SHEET NO.

M-201

AHU-1 CONTROL SCHEMATIC

NOT TO SCALE

AHU-1



SEQUENCE OF OPERATION:

1. SUPPLY FAN SPEED MODULATES TO MAINTAIN DUCT STATIC SETPOINT 1.0 IN. W.C. (ADJUSTABLE).
2. EF-1 INTERLOCKED WITH AHU-1 OCCUPIED MODE.
3. VAV BOXES RESET SUPPLY AIR TEMPERATURE BASED ON ZONE DEMAND.

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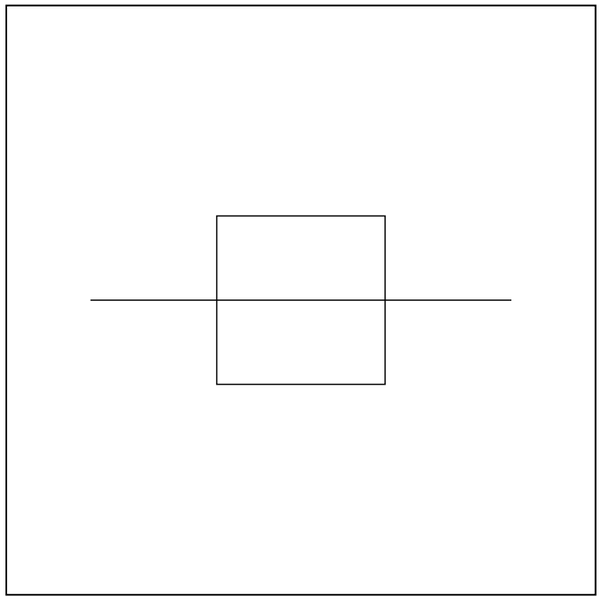
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SHEET TITLE:
AHU-1 CONTROL SCHEMATIC

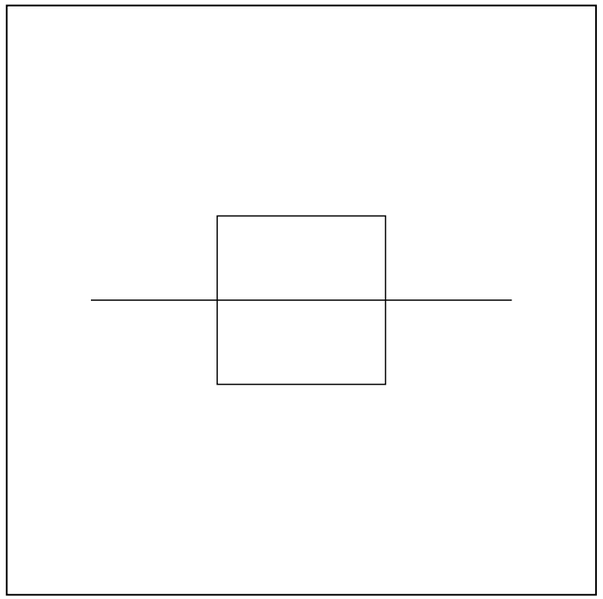
SHEET NO.
M-301

MECHANICAL DETAILS



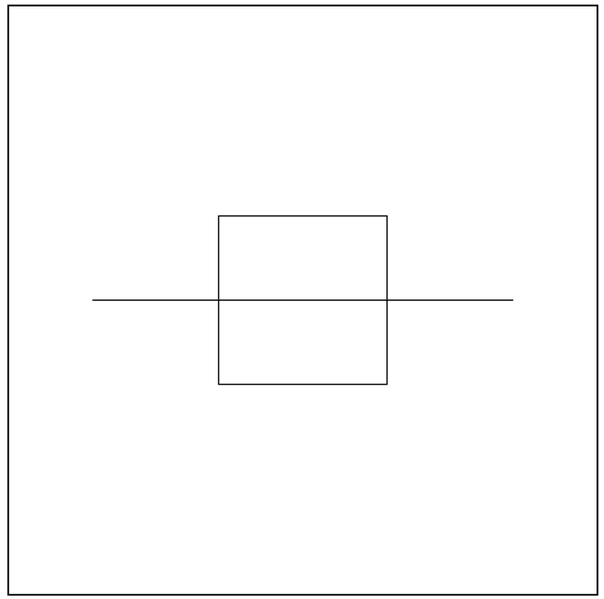
1 TYPICAL VAV BOX CONNECTION

M-501 NOT TO SCALE



2 RTU-1 ROOF CURB

M-501 NOT TO SCALE



3 CEILING DIFFUSER CONNECTION

M-501 NOT TO SCALE

DETAIL 3 APPLIES TO SD-1 AND SD-2. FLEXIBLE DUCT MAX. 1.5 M.

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SHEET TITLE:

MECHANICAL DETAILS

SHEET NO.

M-501

MECHANICAL EQUIPMENT SCHEDULES

AIR HANDLING UNIT AND ROOFTOP UNIT SCHEDULE

MARK	DESCRIPTION	LOCATION	CFM	OA CFM	ESP IN.	COOLING MBH	HEATING	ELEC.
AHU-1	INDOOR AIR HANDLING UNIT, VAV	MECH. ROOM 102	18000	3600	2.0	540	HW 650 MBH	575/3/60
RTU-1	PACKAGED ROOFTOP UNIT, CV	ROOF	4000	1200	1.0	120	GAS 150 MBH	575/3/60

EXHAUST FAN SCHEDULE

MARK	SERVICE	TYPE	LOCATION	CFM	ESP IN.	HP	ELEC.
EF-1	WASHROOM EXHAUST	ROOF UPBLAST	ROOF	900	0.75	1/2	115/1/60
EF-2	ELEC./IT ROOMS	ROOF DOWNBLAST	ROOF	400	0.5	1/4	115/1/60
EF-3	GARBAGE ROOM	INLINE	LEVEL 1	200	0.4	1/6	115/1/60

FAN COIL UNIT SCHEDULE

MARK	SERVES	TYPE	CFM	COOLING MBH	PAIRED WITH	ELEC.
FCU-1	ELEC. ROOM 107	DUCTLESS CEILING CASSETTE	450	18	HP-1	208/1/60
FCU-2	IT ROOM 206	DUCTED, ABOVE CEILING	800	30	HP-2	208/1/60
FCU-3	IT ROOM 306	DUCTED, ABOVE CEILING	800	30	HP-3	208/1/60

AIR-COOLED HEAT PUMP SCHEDULE

MARK	SERVES	LOCATION	COOLING MBH	HEATING MBH	SEER	ELEC.
HP-1	FCU-1	ROOF	18	20	18	208/1/60
HP-2	FCU-2	ROOF	30	32	17	208/1/60
HP-3	FCU-3	ROOF	30	32	17	208/1/60

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SHEET TITLE:
MECHANICAL EQUIPMENT SCHEDULES

SHEET NO.
M-601

AIR DEVICE AND VAV SCHEDULES

AIR DEVICE SCHEDULE

MARK	DESCRIPTION	TYPE	SIZE	CFM RANGE	FINISH	QTY
SD-1	SUPPLY DIFFUSER	4-WAY SQUARE CONE, LAY-IN	24X24 / 8 NECK	100-200	WHITE	38
SD-2	SUPPLY DIFFUSER	LINEAR SLOT, 2 SLOT	48 IN. / 8 NECK	75-125	WHITE	4
RG-1	RETURN GRILLE	PERFORATED FACE, LAY-IN	24X24 / 12X12 NECK	200-700	WHITE	20
EG-1	EXHAUST GRILLE	EGGCRATE, ALUMINUM	12X12	50-150	WHITE	12

QUANTITIES ARE FOR INFORMATION ONLY. VERIFY AGAINST PLANS.

VAV BOX SCHEDULE

MARK	DESCRIPTION	INLET SIZE	MAX CFM	MIN CFM	REHEAT	QTY
VAV-1	SINGLE DUCT VAV, HW REHEAT	8 IN.	600	180	1 ROW HW	8
VAV-2	SINGLE DUCT VAV, HW REHEAT	10 IN.	900	270	2 ROW HW	6
VAV-3	SINGLE DUCT VAV, HW REHEAT	12 IN.	1200	360	2 ROW HW	3

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SHEET TITLE:
AIR DEVICE AND VAV SCHEDULES

SHEET NO.
M-602