


MONTGOMERY SISAM ARCHITECTS INC.  
*ARCHITECTURAL*



CROSSEY  
ENGINEERING

A Salas O'Brien Company

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*2S NURSE STATION*

LAKESHORE LODGE  
LONG-TERM CARE HOMES AND SERVICES  
**3197 LAKESHORE BLVD.W., ETOBICOKE**



Long-Term Care Homes and Services Division

GENERAL NOTES	
	<b>LINEWORK DESIGNATION</b>
<div><div>————</div><div>— — — —</div><div>***x***x</div></div>	NEW WORK (PIPING AND DUCTWORK) EXISTING WORK TO REMAIN EXISTING WORK TO BE REMOVED/DEMOLISHED
	<b>MECHANICAL ELEMENT TAGS (EXAMPLE/TYPICAL)</b>
<div><div>XXX-000</div></div>	XX - DENOTES EQUIPMENT ABBREVIATION (SEE THE LIST BELOW) 000 - DENOTES THE UNIT NUMBER
<div><div>VAV-101/AHU-1</div><div>A1150450</div></div>	VAV - DENOTES VARIABLE AIR VOLUME BOX 101 - DENOTES VARIABLE AIR VOLUME BOX NUMBER A1 - DENOTES VARIABLE AIR VOLUME BOX TYPE AHU-1- DENOTES AIR HANDLING UNIT NUMBER SERVING THE SYSTEM 150 - DENOTES AIR QUANTITY - IN CFM. MINIMUM 450 - DENOTES AIR QUANTITY - IN CFM. MAXIMUM
<div><div>FPB-102/AHU-1</div><div>D2120480800</div></div>	FPB - DENOTES FAN POWERED BOX UNIT 102 - DENOTES FAN POWERED BOX UNIT NUMBER AHU-1- DENOTES AIR HANDLING UNIT NUMBER SERVING THE SYSTEM D2 - DENOTES FAN POWERED BOX TYPE 120 - DENOTES MIN PRIMARY UNOCCUPIED AIR SETTING 480 - DENOTES MIN PRIMARY AIR SETTING 800 - DENOTES MAX PRIMARY AIR SETTING
<div><div>RH-21/AHU-1</div><div>VAV-2</div></div>	RH - DENOTES REHEAT COIL 21 - DENOTES REHEAT COIL NUMBER AHU-1- DENOTES AIR HANDLING UNIT NUMBER SERVING THE SYSTEM VAV-2- DENOTES VAV BOX UNIT NUMBER SERVING REHEAT COIL

GENERAL NOTES (Continuted)	
	<b>MECHANICAL ELEMENT TAGS (EXAMPLE/TYPICAL)</b>
<div><div>CV-101</div><div>A4.0</div></div>	CV - DENOTES CONVECTOR HEATING UNIT 101 - DENOTES CONVECTOR HEATING UNIT NUMBER A - DENOTES UNIT TYPE - REFER TO SPECIFICATION 4.0 - DENOTES HEATING CAPACITY - IN MBH.
<div><div>P-XXX-1</div></div>	P - DENOTES PUMP XXX - DENOTES SERVICE (HW, CHW, SAN, etc.) 1 - DENOTES PUMP NUMBER
	<b>GENERAL ABBREVIATIONS</b>
<div><div>C/W</div><div>CTE</div><div>DIA</div><div>EX</div></div>	COMPLETE WITH CONNECT TO EXISTING DIAMETER EXISTING
<div><div>AHU</div><div>CD</div><div>RP</div><div>EF</div><div>FPB</div><div>G</div><div>LV</div><div>LPH</div><div>P</div><div>RH</div><div>UH</div><div>VAV</div><div>VFD</div><div>CAP</div></div>	<b>MECHANICAL ELEMENT ABBREVIATIONS</b>  AIR HANDLING UNIT REMOTE CONDENSING UNIT HOT WATER RADIATOR RUNTAL EXHAUST FAN FAN POWERED BOX GRILLE / DIFFUSER LOUVER LOUVERED PENTHOUSE PUMP REHEAT COIL UNIT HEATER VARIABLE VOLUME BOX VARIABLE FREQUENCY DRIVE END CAP FOR DUCT OR PIPE.

Montgomery Sisam Architects Inc.

197 Spadina Avenue, Toronto, Ontario M5T 2C8  
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5	2024-04-26	ISSUED FOR PERMIT TENDER	CEL
4	2024-04-12	ISSUED FOR DESIGN SIGN-OFF	CEL
3	2024-02-06	ISSUED FOR DESIGN REVIEW	CEL
2	2023-12-06	ISSUED FOR OWNER'S REVIEW	CEL
1	2023-11-01	ISSUED FOR COORDINATION	CEL
#	Date:	Revision:	By
revisions			



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LL 2S NURSE STATION RENOVATION

3197 LAKESHORE BLVD.W., ETOBICOKE
























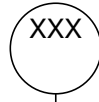

MECHANICAL DRAWING LIST & LEGEND SHEET 1  
MECHANICAL GENERAL













scale:	N.T.S.
drawn	BK
reviewed	VS
job	23511.06
plot	11/01/23

drawing

M-001

_DRAWING LIST				
DWG No.	DRAWING NAME	Latest Modification	Date Updated	COMMENT
MECHANICAL GENERAL				
M-001	MECHANICAL DRAWING LIST & LEGEND SHEET 1	ISSUED FOR PERMIT TENDER	2024-04-26	
M-002	MECHANICAL DRAWING LIST & LEGEND SHEET 2	ISSUED FOR PERMIT TENDER	2024-04-26	
M-003	MECHANICAL DRAWING LIST & LEGEND SHEET 3	ISSUED FOR PERMIT TENDER	2024-04-26	
M-004	MECHANICAL DRAWING LIST & LEGEND SHEET 4	ISSUED FOR PERMIT TENDER	2024-04-26	
M-005	MECHANICAL SPECIFICATION SHEET 1	ISSUED FOR PERMIT TENDER	2024-04-26	
M-006	MECHANICAL SPECIFICATION SHEET 2	ISSUED FOR PERMIT TENDER	2024-04-26	
M-007	MECHANICAL SPECIFICATION SHEET 3	ISSUED FOR PERMIT TENDER	2024-04-26	
M-008	MECHANICAL SPECIFICATION SHEET 4	ISSUED FOR PERMIT TENDER	2024-04-26	
M-009	MECHANICAL SPECIFICATION SHEET 5	ISSUED FOR PERMIT TENDER	2024-04-26	
M-010	MECHANICAL SPECIFICATION SHEET 6	ISSUED FOR PERMIT TENDER	2024-04-26	
PLUMBING AND DRAINAGE				
M-201	LEVEL 2 DEMOLITION AND NEW WORK	ISSUED FOR PERMIT TENDER	2024-04-26	
HVAC DUCTWORK				
M-401	LEVEL 2 PROPOSED PLAN	ISSUED FOR PERMIT TENDER	2024-04-26	
MD-401	LEVEL 2 DEMOLITION PLAN	ISSUED FOR PERMIT TENDER	2024-04-26	
HVAC PIPING				
M-501	LEVEL 2 DEMOLITION AND NEW WORK	ISSUED FOR PERMIT TENDER	2024-04-26	

VALVES & SPECIALTIES LEGEND	
	SYMBOLS
	ISOLATION VALVE
	BALANCING VALVE
	SUPERVISED VALVE
	CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	PRESSURE & TEMPERATURE RELIEF VALVE
	MIXING OR DIVERTING VALVE (3-WAY)
	TRIPLE DUTY VALVE
	TEST PORT
	PLUG VALVE (GAS)
	CHECK VALVE
	BASKET STRAINER
	‘Y’ STRAINER
	STEAM TRAP ASSEMBLY
	UNION
	PIPE (IN SECTION)
	PUMP
	BACK FLOW PREVENTER ASSEMBLY
	FLEX PIPE
	ELECTRIC HEAT TRACED PIPING
	FIRE WRAPPED PIPE
	LEAK DETECTION
PIPING CONTROL TAGS	
	XXX - DENOTES PIPING CONTROL ABBREVIATION (SEE THE LIST BELOW)
	CONTROL POINT
PIPING CONTROL ABBREVIATIONS	
PG TG TS	PRESSURE GAUGE TEMPERATURE GAUGE TEMPERATURE SENSOR

HEATING AND COOLING LEGEND	
	SYMBOLS
	RADIANT WALL PANEL
	REHEAT COIL
HYDRONIC PIPING SYSTEM ABBREVIATIONS	
CHWR CHWS DX DXL HWR HWS RL RHG RS	CHILLED WATER RETURN CHILLED WATER SUPPLY DX GAS DX LIQUID HOT WATER RETURN HOT WATER SUPPLY REFRIGERANT LIQUID REFRIGERANT HOT GAS REFRIGERANT SUCTION
PLUMBING LEGEND	
PLUMBING PIPE LINEWORK DESIGNATION	
	BURIED SANITARY/STORM DRAIN
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRC.
SYMBOLS	
	CLEANOUT PLUG
	FLOOR CLEANOUT
	PLUMBING TRAP
	FLOOR DRAIN
	FUNNEL FLOOR DRAIN
	TAG FOR PLUMBING FIXTURE ON THE LEVEL ABOVE
PLUMBING FIXTURE TAGS	
XXX-000	- DENOTES PLUMBING FIXTURE TAG XXX - DENOTES ABBREVIATION (SEE THE LIST BELOW)
PLUMBING SYSTEM ABBREVIATIONS	
DCW DHW SAN ST V	DOMESTIC COLD WATER DOMESTIC HOT WATER SANITARY DRAINAGE STORM DRAINAGE ABOVE GRADE SANITARY VENT

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LL 2S NURSE STATION RENOVATION

3197 LAKESHORE BLVD.W., ETOBICOKE

MECHANICAL DRAWING LIST & LEGEND SHEET 2  
MECHANICAL GENERAL




scale:	N.T.S.
drawn	BK
reviewed	VS
job	23511.06
plot	11/01/23


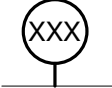




drawing

M-002

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PLUMBING LEGEND (Continued)	
	PLUMBING FIXTURE AND ELEMENT ABBREVIATIONS
AD	AREA DRAIN
B	BIDET
BT	BATH TUB
DF	DRINKING FOUNTAIN
CSI	COPPER SILVER IONIZATION
EW	EYE WASH
EWSS	EYEWASH AND SAFETY SHOWER
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
JS	JANITORY SINK
HD	HUB DRAIN
HB	HOSE BIB
HBNF	HOSE BIB - NON FREEZE
L	LAVATORY
MCR	MACERATOR
RWL	RAINWATER LEADER
S	SINK
SD	SCUPPER DRAIN
SH	SHOWER
PD	PLANTER DRAIN
PLD	PLENUM DRAIN
RD	ROOF DRAIN
TD	TRENCH DRAIN
TSP	TRAP SEAL PRIMER
U	URINAL
WB	WASHER BOX
WC	WATER CLOSET

FIRE PROTECTION LEGEND	
	SYMBOLS
	SURFACE MOUNTED FIRE EXTINGUISHER c/w CABINET
	RECESSED FIRE EXTINGUISHER c/w CABINET
	SURFACE MOUNTED FIRE EXTINGUISHER
•	PENDENT SPRINKLER HEAD
◉	CONCEALED SPRINKLER HEAD
◐	RECESSED SPRINKLER HEAD
○	UPRIGHT SPRINKLER HEAD
▼	SIDEWALL SPRINKLER HEAD
FIRE PROTECTION SYSTEM ABBREVIATIONS	
SP	SPRINKLER WET
ELEMENT ABBREVIATIONS	
FE	FIRE EXTINGUISHER

VENTILATION LEGEND	
	HVAC CONTROL SYMBOLS
	CEILING MOUNTED HVAC CONTROL ELEMENT
	WALL MOUNTED HVAC CONTROL ELEMENT
XXX - DENOTES HVAC CONTROL ABBREVIATION (SEE THE LIST BELOW)	
HVAC CONTROL ABBREVIATIONS	
BS	BLEED SENSOR
CO2	CARBON DIOXIDE SENSOR
COS	CARBON MONOXIDE SENSOR
H	HUMIDISTAT
HS	HUMIDITY SENSOR
NO2	NITROGEN OXIDE SENSOR
O2	OXYGEN SENSOR
OCC	OCCUPANCY SENSOR
PC	PEOPLE COUNTER
PM	PRESSURE MONITOR
R	REFRIGERANT LEAK SENSOR
T	THERMOSTAT
HVAC ACCESSORY TAGS	
	XX - DENOTES HVAC ACCESSORY ABBREVIATION (SEE THE LIST BELOW)
	
	ABC - DENOTES HVAC ACCESSORY TYPE
	000 - DENOTES HVAC ACCESSORY NUMBER


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MECHANICAL DRAWING LIST & LEGEND SHEET 3  
MECHANICAL GENERAL

scale:	N.T.S.
drawn	BK
reviewed	VS
job	23511.06
plot	11/01/23

drawing  
M-003

VENTILATION LEGEND (CONTINUED)	
	SYMBOLS
	SUPPLY AIR DUCT
	RETURN AIR DUCT
	EXHAUST AIR DUCT
	SQUARE DIFFUSER
	ROUND DIFFUSER
	PERIMETER BOOT
	AIR SUPPLY BOOT OVER LIGHT FIXTURE
	V.A.V. BOX C/W ATTENUATOR
	V.A.V. BOX C/W ATTENUATOR & REHEAT COIL
	FAN POWERED BOX
	DUCT SILENCER
	TURNING VANES
	FLEXIBLE DUCT
	TAKE-OFF WITH VOLUME DAMPER
	VOLUME DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	COMBINED FIRE/SMOKE DAMPER
	MOTORIZED DAMPER
	BACKDRAFT DAMPER
	DOOR UNDERCUT
	ACCESS DOOR
	OPEN-ENDED BELLMOUTH DUCT c/w VOLUME DAMPER AND 10 mm X 10 mm PROTECTIVE MESH
	GRILLE/DIFFUSER TAG EXAMPLE, WHERE Arrow - DENOTES AIR FLOW DIRECTION (TO/FROM GRILLE) G - DENOTES ELEMENT ABBREVIATION - GRILLE/DIFFUSER 03 - DENOTES GRILLE/DIFFUSER SEQUENTIAL NUMBER "G-03" REPRESENTS UNIQUE ELEMENT IDENTIFIER 100cfm - DENOTES AIR FLOW RATE E - DENOTES GRILLE/DIFFUSER TYPE 450x250 - DENOTES GRILLE/DIFFUSER SIZE 150ø - DENOTES DIFFUSER NECK SIZE

VENTILATION LEGEND (CONTINUED)	
HVAC ELEMENT ABBREVIATIONS	
AFS	AIR FLOW MEASURING STATION
AD	ACCESS DOOR
BDD	BACK DRAFT DAMPER
FRD	FIRE DAMPER
FSD	COMBINED FIRE/SMOKE DAMPER
G	GRILLE / DIFFUSER
GH	GRILLE WITH HEPA FILTER
LV	LOUVRE
LPH	LOUVRED PENTHOUSE
MD	MOTORIZED DAMPER
SL	SILENCER
SCD	SMOKE CONTROL DAMPER
TA	TRANSFER AIR OPENING
VD	VOLUME DAMPER
DUCT TAG DESIGNATIONS	
800x400 SA /AHU-02	800 - DENOTES DUCT WIDTH CLEAR DIMENSION x - DENOTES RECTANGULAR DUCT SHAPE (SEE BELOW) 400 - DENOTES DUCT HEIGHT CLEAR DIMENSION SA - DENOTES SUPPLY AIR SYSTEM (SEE BELOW) AHU-02 - DENOTES EQUIPMENT SERVING THE DUCT SYSTEM
DUCT SHAPE DESIGNATIONS	
400X200 400/200 200ø	400(W) BY 200(H) RECTANGULAR DUCTWORK 400(W) BY 200(H) OVAL DUCTWORK 200 MM DIAMETER DUCT

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MECHANICAL DRAWING LIST & LEGEND SHEET 4  
MECHANICAL GENERAL

scale:	N.T.S.
drawn	BK
reviewed	VS
job	23511.06
plot	11/01/23

drawing  
**M-004**



GENERAL NOTES:

1. THE GENERAL CONDITIONS AND BASE BUILDING STANDARDS ARE AN INTEGRAL PART OF THIS WORK AND ALL WORK ON THE FACILITY SHALL BE CARRIED OUT IN STRICT ACCORDANCE WITH THE CONSTRUCTION STANDARDS OF THE FACILITY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO BECOME FAMILIAR WITH THOSE STANDARDS. REFER TO FRONT END DOCUMENTS FOR DETAILS.
2. ALL OTHER AREAS OF THE FACILITY SHALL REMAIN IN OPERATION DURING THE CONSTRUCTION PERIOD. COORDINATE WITH THE FACILITY FOR ALL RULES AND REGULATIONS IN ORDER TO ACHIEVE SUCCESSFUL COMPLETION OF THE PROJECT.
3. CONTRACTORS SHALL ADHERE TO THE WORKING HOURS STIPULATED BY THE CONDITIONS OF THIS CONTRACT. REF. ARCH. DOCUMENTS FOR DETAILS.
4. DEFINITIONS:

'PROVIDE' - CONTRACTOR TO PURCHASE AND INSTALL ITEMS AS DESCRIBED.

'SUPPLY' - CONTRACTOR TO PURCHASE ITEMS FOR INSTALLATION BY OTHERS.

'INSTALL' - CONTRACTOR TO INSTALL ITEMS PURCHASED BY OTHERS.

'UNCONDITIONED SPACE' - AN ENCLOSED SPACE WITHIN A BUILDING THAT IS NOT A CONDITIONED SPACE OR A SEMI-HEATED CRAWL SPACE. CRAWL SPACES, ATTICS AND PARKING GARAGES WITH NATURAL OR MECHANICAL VENTILATION ARE NOT CONSIDERED ENCLOSED SPACES.
5. LOCATION OF ALL EXISTING SERVICES AND EQUIPMENTS HAVE BEEN SHOWN BASED ON ARCHIVE DOCUMENTS AND SITE MEASUREMENTS. CONTRACTOR SHALL FIELD MEASURE ALL SITE CONDITIONS AND MAKE SUITABLE PROVISIONS DURING TENDER. THE MECHANICAL DRAWINGS DO NOT SHOW ALL THE ARCHITECTURAL AND STRUCTURAL DETAILS. ANY INFORMATION INVOLVING ACCURATE DIMENSIONING OF THE BUILDING SHALL BE TAKEN FROM SITE. MAKE, WITHOUT ADDITIONAL CHARGE, ANY NECESSARY MODIFICATIONS OR ADDITIONS TO THE ROUTING OF DRAINS, PIPES, DUCTS, ETC., TO ACCOMMODATE THE SITE CONDITIONS.
6. PRIOR TO SUBMITTING A BID AMOUNT, THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE FOLLOWING:

.1 VERIFY EXISTING CONDITIONS AND ANY LIMITATIONS.

.2 VERIFY EXISTING ARCHITECTURE AND STRUCTURE OF THE BUILDING IE: WALLS, FLOORS, ETC.

.3 VERIFY EXISTING MECHANICAL SYSTEMS IN THE BUILDING, IE: HVAC, PLUMBING, FIRE PROTECTION, ETC.

.4 EXAMINE THE PROPOSED INSTALLATION AGAINST THE EXISTING. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTING EXISTING CONDITIONS DURING SITE WALK THRU & PRE-TENDER SITE VISITS. NO EXTRAS WILL BE PAID FOR WORK RESULTING DUE TO OBVIOUS SITE CONDITIONS . CONTRACTOR SHALL ENSURE THAT ALL NEW INSTALLATION CAN BE PERFORMED TO MEET DESIGN INTENT AGAINST EXISTING CONDITIONS AND DESIGN DRAWINGS. UPON EXAMINING ALL OF THE ABOVE AGAINST THE PLANS, SPECIFICATIONS AND TERMS OF THE CONTRACT, THE CONTRACTOR MUST SATISFY HIMSELF THAT THE PROPOSED INSTALLATION CAN BE CARRIED OUT AS INTENDED TO THE SATISFACTION OF THE OWNER, AT NO ADDITIONAL COST TO THE OWNER.
7. MATERIAL, PRODUCTS AND EQUIPMENT SHALL BE NEW, OF THE BEST QUALITY AND BE OF UNIFORM PATTERN. ALL WORK SHALL BE CARRIED OUT BY SKILLED WORKERS, EXPERIENCED AND SPECIALISTS IN THEIR FIELD OF WORK TO ENSURE THE HIGHEST LEVEL OF WORKMANSHIP.
8. SUBMIT SHOP DRAWINGS ELECTRONICALLY IN PDF FORMAT FOR ALL EQUIPMENT, VALVES, ETC. TO THE CONSULTING ENGINEER PRIOR TO PLACING ORDER FOR SAME. CONTRACTOR SHALL NOT ORDER EQUIPMENT, VALVES, ETC. UNTIL HE HAS RECEIVED APPROVED SHOP DRAWINGS RETURNED TO HIM BY THE CONSULTING ENGINEERS. (NOTE: CONSULTING ENGINEERS REQUIRE A MINIMUM OF TWO WEEKS FOR SHOP DRAWING REVIEW). NON-APPROVED EQUIPMENT, VALVES, ETC. WHICH APPEAR ON SITE WILL BE REJECTED AND TURNED AWAY AT CONTRACTORS EXPENSE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND CO-ORDINATION OF THE MECHANICAL AND ELECTRICAL WORK OF ALL SUB-TRADES.
10. ADHERE TO THE RULES, REGULATIONS AND STANDARDS OF THE BASE BUILDING.

11. THIS CONTRACTOR SHALL EMPLOY TRADES SPECIALIZING IN CUTTING AND PATCHING AS REQUIRED FOR THIS WORK. ALL PATCHING SHALL BE PERFORMED USING THE SAME TYPE OF MATERIAL WHICH WAS CUT. X-RAY INSPECTION MAY BE REQUIRED PRIOR TO ANY CUTTING AND/OR DRILLING STRUCTURAL ENGINEER. CONSULT WITH BUILDING OWNER WITH REGARD TO X-RAY REQUIREMENTS AND OBTAIN WRITTEN DIRECTION PRIOR TO COMMENCING WORK.
12. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING THE SITE AND REMOVING WASTE MATERIALS CAUSED BY THE PERFORMANCE OF THE WORK FOR DIVISION 15. ANY EQUIPMENT TO BE REMOVED DURING PERFORMANCE OF THIS WORK SHALL BE TURNED OVER TO THE OWNER.
13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT ALL THE EXISTING SYSTEMS PRIOR TO START OF WORK AND REPORT ANY DEFICIENCIES. THESE INCLUDE, BUT ARE NOT LIMITED TO: HVAC SYSTEM AND COMPONENTS, HEATING SYSTEM AND COMPONENTS, FIRE PROTECTION SYSTEM AND COMPONENTS, AND THE PLUMBING SYSTEM AND COMPONENTS. THE INSPECTION SHALL BE DONE IN THE PRESENCE OF THE BUILDING OWNER'S REPRESENTATIVE.
14. PROVIDE ULC LISTED FIRE STOP SYSTEMS WHERE PIPING PENETRATES FLOOR SLABS OF OTHER FIRE SEPARATIONS.
15. SUBMIT TWO COPIES OF AS-BUILT DRAWINGS PRIOR TO SUBSTANTIAL COMPLETION OF WORK.
16. PROVIDE THREE COPIES OF MAINTENANCE MANUALS COVERING ALL NEW EQUIPMENT INSTALLED FOR THIS PROJECT.
17. THIS CONTRACTOR SHALL PROVIDE A WRITTEN WARRANTY STATING THAT ALL WORK SHALL BE FREE FROM DEFECTS FOR MATERIAL, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL CERTIFICATE, WHICH SHALL INCLUDE ONE (1) COMPLETE WINTER AND ONE (1) COMPLETE SUMMER OF UNINTERRUPTED OPERATION.
18. IDENTIFY ALL EQUIPMENT WITH LAMICOID PLATES. IDENTIFICATION TAG NUMBERS TO MATCH THAT SHOWN ON DRAWINGS.
19. SHUT-DOWN OF EXISTING SYSTEMS REQUIRED FOR THIS INSTALLATION SHALL BE FULLY CO-ORINATED WITH BUILDING OWNER. OBTAIN PERMISSION, IN WRITING, AND PERFORM ALL WORK AS DIRECTED BY OWNER. FINAL CONNECTION TO EXISTING SYSTEMS TO BE PERFORMED AT A TIME PERIOD DESIGNATED BY THE BUILDING OWNER.
20. ANY WORK THAT INVOLVES SHUT DOWN OR DISRUPTION TO EX. SERVICES SHALL BE CARRIED OUT "AFTER NORMAL WORKING HOURS" (6:00PM-8:00AM). THIS MAY INCLUDE, BUT IS NOT LIMITED TO; THE LIFE-SAFETY SYSTEM, HVAC SYSTEM, PLUMBING SYSTEM, AND FIRE PROTECTION SYSTEM. COORDINATE WITH BUILDING OWNER FOR ANY TIMINGS. ANY 'AFTER NORMAL WORKING HOURS' REQUIRED FOR THIS PROJECT SHALL BE INCLUDED IN THE TENDER AMOUNT.
21. VERIFY VOLTAGE, ON SITE, BEFORE ORDERING EQUIPMENT.
22. MECHANICAL DRAWING SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS.
23. REMOVE ALL EXISTING PIPING, EQUIPMENT AND DUCTWORK THAT IS MADE REDUNDANT BY THIS NEW WORK, ON A DAILY BASIS.
24. CO-ORDINATE WITH THE BUILDING OWNER FOR SCHEDULING OF WORK EFFECTING THE EXISTING SYSTEMS, INCLUDING BUT NOT LIMITED TO: PLUMBING AND DRAINAGE, HVAC AND SPRINKLER SYSTEMS. IN ADDITION, CO-ORDINATE WITH THE BUILDING OWNER FOR SCHEDULING OF WORK IN THE ADJACENT TENANT SPACES TO COMPLETE THE INSTALLATION OF THE WORK.
25. ALLOW FOR PREMIUM TIME TO PERFORM THE "TIE-IN" OF NEW CONNECTIONS TO EXISTING SYSTEMS AS DESCRIBED ABOVE.
26. FILE ALL NECESSARY DOCUMENTS FOR THE PURPOSE OF OBTAINING ALL PERMITS. ARRANGE FOR AND PAY ALL FEES FOR INSPECTIONS AS REQUIRED BY CODE AND LOCAL AUTHORITIES. PROVIDE THE OWNER WITH THE CERTIFICATES OF ALL INSPECTIONS PRIOR TO FINAL COMPLETION.

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LL 2S NURSE STATION RENOVATION

3197 LAKESHORE BLVD.W., ETOBICOKE

MECHANICAL SPECIFICATION SHEET 1  
MECHANICAL GENERAL

scale:	N.T.S.
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reviewed	VS
job	23511.06
plot	11/01/23

drawing

M-005

27. NOTHING CONTAINED HEREIN SHALL BE CONSTRUED TO RELIEVE THE CONTRACTOR FROM MAKING GOOD AND PERFECT IN ALL USUAL DETAILS OF CONSTRUCTION.

TIE-INS TO EXISTING SERVICES:

1. ALL EXISTING PIPING SYSTEMS, NAMELY BUT NOT LIMITED TO HEATING, COOLING, PLUMBING AND FIRE PROTECTION SYSTEMS SHALL BE MAINTAINED IN OPERATING CONDITIONS DURING THE DURATION OF CONSTRUCTION.
2. CONTRACTOR SHALL EXAMINE EXISTING ISOLATING VALVES TO ENSURE THAT THEY ARE IN GOOD WORKING CONDITION. IF THE EXISTING VALVES ARE NOT IN GOOD CONDITION AND ARE NOT PROVIDING A POSITIVE SHUT OFF, THE CONTRACTOR SHALL PERFORM THE FOLLOWING.

1. FREEZE THE EXISTING PIPING SYSTEM.

2. CO-ORDINATE WITH THE FACILITIES DEPARTMENT FOR TEMPORARY SHUT DOWN OF PUMPS TO FACILITATE FREEZING.

3. INSTALL NEW ISOLATION VALVES TO PERFORM NEW WORK AS PER DRAWINGS.

4. UNFREEZE THE PIPING AND RESTORE THE SYSTEM TO NORMAL OPERATION.

DEMOLITION:

1. PROVIDE FOR THE REMOVAL OF EQUIPMENT AND DEVICES AS NOTED ON THE DRAWINGS.
2. REMOVAL OF DEBRIS AND RUBBISH FROM THE JOB SITE TO BE EXECUTED ON A DAILY BASIS IN ORDER TO MAINTAIN A CLEAN AND SAFE WORK ENVIRONMENT.
3. UNLESS OTHERWISE NOTED, EQUIPMENT SHALL BE THE PROPERTY OF THE OWNER AND EQUIPMENT NOT RE-USED SHALL BE TURNED OVER TO THE OWNER. EQUIPMENT NOT WANTED BY THE OWNER SHALL BE REMOVED AND DISPOSED OF AWAY FROM THE SITE.
4. PRIOR TO DEMOLITION, MAKE NOTE OF ANY DAMAGE TO THE EXISTING SYSTEM. IDENTIFY THESE ITEMS AND INFORM THE CONSULTING ENGINEER IMMEDIATELY. FAILURE TO REPORT ANY DEFICIENCIES, PRIOR TO DEMOLITION, IMPLIES THAT THE CONTRACTOR HAS ACCEPTED T HE SITE. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO MAKE GOOD ALL EXISTING EQUIPMENT NOTED TO REMAIN FOLLOWING THE DEMOLITION WORK.
5. CAP ALL PIPING, WHICH ARE NOT TO BE RE-USED.
6. CAP ALL DUCT TAKE-OFFS, WHICH ARE NOT TO BE RE-USED.
7. ENSURE THE CONTINUED OPERATION OF THE LIFE-SAFETY SYSTEM DURING THE ENTIRE CONSTRUCTION OF THE PROJECT. BYPASS ONLY THE ZONES NECESSARY AND AS REQUIRED TO COMPLETE THE WORK REQUIRED. GIVE 24 HOURS NOTICE TO THE BUILDING OWNER FOR SYSTEM BYPASS AND NOTIFY IMMEDIATELY UPON COMPLETION OF THE WORK SO AS TO RESTORE THE PLUMBING SYSTEM TO THE ENTIRE FACILITY. IN NO CASE SHALL THE PLUMBING SYSTEM SYSTEM, OR ANY PART OF, REMAIN ON BYPASS DURING THE NIGHT (AFTER NORMAL WORKING HOURS.) IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO ENSURE THAT THE PLUMBING SYSTEM IS FULLY FUNCTIONAL PRIOR TO LEAVING THE SITE AT THE END OF EACH WORKING DAY.
8. CO-ORDINATE IN ADVANCE WITH THE BUILDING OWNER, WORK WHICH IS TO BE CARRIED OUT "AFTER NORMAL WORKING HOURS". THIS MAY INCLUDE, BUT IS NOT LIMITED TO; THE LIFE-SAFETY SYSTEM, HVAC SYSTEM, PLUMBING SYSTEM, FIRE PROTECTION SYSTEM AND ANY WORK WHICH MUST BE CONDUCTED IN THE ADJOINING TENANT SPACES.
9. ENSURE THE CONTINUED OPERATION OF THE EXISTING HVAC, PLUMBING AND FIRE PROTECTION SYSTEMS WHICH SUPPLY THE ADJOINING TENANT SPACES.

PLUMBING AND DRAINAGE SPECIFICATION:

1. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE PLUMBING CODE AND AS REQUIRED FOR APPROVAL BY THE LOCAL INSPECTION AUTHORITIES. PIPING MATERIAL SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED.
2. MATERIAL FITTINGS SANITARY DRAIN i) DWV COPPER OR WROUGHT COPPER OR CAST AND VENTS CAST IRON BRASS, 50-50 SOLDER ii) SANITARY DRAINS CAST IRON TO CSA ASTM A74 CAST IRON FITTINGS B70 ASTM WITH HEAVY BITUMINOUS COATING iii) DOMESTIC WATER TYPE `L' COPPER WROUGHT COPPER, BRONZE, 95-5 SOLDER

3. ALL COPPER TUBING FOR USE IN THE PLUMBING SYSTEM SHALL BE CERTIFIED FOR COMPLIANCE WITH ASTM B88 AS SPECIFIED IN THE LATEST EDITION OF THE ONTARIO PLUMBING CODE.
4. FOR INSTALLATION OF POTABLE WATER SYSTEM SOLDERS AND FLUXES SHALL BE LEAD FREE.
5. HANGER RODS TO BE STEEL THREADED AND FASTENED TO BUILDING STRUCTURE USING SUBSTANTIAL INSERTS. PERFORATED STRAPS OR CHAIN HANGERS ARE NOT TO BE USED. NO POWER ACTUATED FASTENERS SHALL BE USED. INSERTS SHALL BE INSTALLED IN DRILLED HOLES.
6. HANGERS SHALL BE ADJUSTABLE STEEL CLEVIS TYPE. ISOLATION SHALL BE PROVIDED BETWEEN COPPER PIPE AND STEEL HANGERS. SUPPORT FOR PIPING SHALL BE AS FOLLOWS:

PIPE SIZE DISTANCE BETWEEN SUPPORTS (ft)

i) UP TO 3/4" 6'-0" 1"

ii) 8'-0"

iii) 1-1/4" AND 1-1/2" 10'-0" 2" AND UP

iv) 12'-0"
7. PROVIDE ESCUTCHEONS WHERE EXPOSED PIPING PASSES THROUGH WALLS.
8. PROVIDE CLEANOUTS AS REQUIRED BY CODE AND AS SHOWN ON THE DRAWINGS.
9. PROVIDE INDIVIDUAL ACCESSIBLE SHUT-OFF VALVES FOR ALL DOMESTIC WATER CONNECTIONS IF REQUIRED.

1.1. NPS2 AND UNDER SHALL BE BALL VALVES CLASS 125,860 kPA, BRONZE BODY, BRONZE BALL WITH TEFLON SEAL WITH SCREWED ENDS & LOCK SHIELD HANDLES.

STANDARD OF ACCEPTANCE:TOYO, JENKINS, CRANE, KITZ & GRINNELL.

1.2. NPS 2 1/2 AND OVER SHALL BE BUTTERFLY VALVES, GROOVED ENDS CLASS 300, BUBBLE TIGHT SHUT OFF & BRONZE BODY. OPERATORS SHALL BE LEVER HANDLE FOR NPS 4 & UNDER. GEAR OPERATED FOR NPS 6 & OVER.

PROVIDE SHOP DRAWINGS AND SAMPLES FOR ALL SANITARY FIXTURES AND FITTINGS PRIOR TO ORDERING.
- 10 ENSURE THAT EXISTING SERVICES ARE NOT DAMAGED DURING DEMOLITION AND CONSTRUCTION. IMMEDIATELY CUT OFF AND CAP CONCEALED SERVICES UNCOVERED DURING WORK BY QUALIFIED MECHANICAL AND ELECTRICAL WORKERS.
11. RELOCATE EXPOSED EXISTING MECHANICAL AND ELECTRICAL SERVICES WHERE ALTERATION WORK OCCURS.
12. SHOULD EXISTING SERVICES BE ACCIDENTALLY UNCOVERED AND DISRUPTED, MAKE COMPLETE RESTORATION IMMEDIATELY, AND PROVIDE ADEQUATE PROTECTION TO AVOID FURTHER DISRUPTION UNTIL ALTERNATIVE MEANS OF PROVIDING PERMANENT CONTINUATION OF THE SERVICES ARE MADE.
13. IF THE CONTRACTOR DISCOVERS ANY ISSUES OR DEFICIENCIES WITH RESPECT TO THE EXISTING SERVICES DURING HIS/HER SITE REVIEW THE CONTRACTOR SHALL REPORT THESE ISSUES OR DEFICIENCIES TO THE CONSULTANT PRIOR TO ANY DEMOLITION WORK TAKING PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY THEIR FAILURE TO REVIEW THE EXISTING SYSTEMS PRIOR TO PROCEEDING WITH THE WORK.
14. WHERE SUCH SERVICES SUCH AS MECHANICAL EQUIPMENT, PIPING OR DUCTWORK ARE TO BE REMOVED AS PART OF THE DEMOLITION WORK AND/OR SERVICES NEEDS TO BE REMOVED TO FACILITATE INSTALLATION OF NEW SERVICES OR EQUIPMENT, THE MECHANICAL CONTRACTOR SHALL REVIEW THE SITE AND ENSURE THAT THESE SERVICES ARE NOT 'LIVE' AND THAT THEIR REMOVAL/DEMOLITION WILL NOT CAUSE ANY DAMAGE OR ANY DISTURBANCE.
15. PROVIDE TRAP SEAL PRIMER CONNECTED TO FLOOR DRAIN c/w ACCESS PANEL FOR MAINTENANCE PURPOSES.

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LL 2S NURSE STATION RENOVATION

3197 LAKESHORE BLVD.W., ETOBICOKE

MECHANICAL SPECIFICATION SHEET 2 MECHANICAL GENERAL

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plot	11/01/23

drawing

M-006



HEATING, VENTILATION AND AIR CONDITIONING:

RETURN AIR GRILLES:

PART 1 - GENERAL

1.1 SUMMARY

- 1.1.1 .1 SUPPLY, RETURN AND EXHAUST GRILLES AND REGISTERS, DIFFUSERS AND LINEAR GRILLES, FOR COMMERCIAL USE.

1.2 SYSTEM DESCRIPTION

1.2.1 PERFORMANCE REQUIREMENTS:

- .1 CATALOGUED OR PUBLISHED RATINGS FOR MANUFACTURED ITEMS: OBTAINED FROM TESTS CARRIED OUT BY MANUFACTURER OR THOSE ORDERED BY MANUFACTURER FROM INDEPENDENT TESTING AGENCY SIGNIFYING ADHERENCE TO CODES AND STANDARDS.

1.3 SUBMITTALS

1.3.1 SHOP DRAWINGS

- .1 SUBMIT MANUFACTURER'S PRINTED PRODUCT LITERATURE IN ACCORDANCE WITH FRONT END DOCUMENTS AND SECTION 22 05 01.
- .2 INDICATE FOLLOWING:
- .1 CAPACITY.
  - .2 THROW AND TERMINAL VELOCITY.
  - .3 NOISE CRITERIA.
  - .4 PRESSURE DROP.
  - .5 NECK VELOCITY.

1.4 REFERENCE STANDARDS

- 1.4.1 ADC 1062GRD 84 TEST CODE FOR GRILLES, REGISTERS AND DIFFUSERS.

1.5 MANUFACTURED ITEMS

- 1.5.1 GRILLES, REGISTERS AND DIFFUSERS SHALL BE PRODUCT OF ONE MANUFACTURER FOR GENERIC TYPE.

1.6 DELIVERY, STORAGE, AND HANDLING

1.6.1 PACKING, SHIPPING, HANDLING AND UNLOADING:

- .1 DELIVER, STORE AND HANDLE IN ACCORDANCE WITH FRONT END DOCUMENTS.
- .2 DELIVER, STORE AND HANDLE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.

1.7 CERTIFICATION OF RATINGS

- 1.7.1 CATALOGUED OR PUBLISHED RATINGS SHALL BE THOSE OBTAINED FROM TESTS CARRIED OUT BY MANUFACTURER OR THOSE ORDERED BY HIM FROM INDEPENDENT TESTING AGENCY SIGNIFYING ADHERENCE TO CODES AND STANDARDS.

PART 2 - PRODUCTS

2.1 GENERAL

- 2.1.1 TO MEET CAPACITY, PRESSURE DROP, TERMINAL VELOCITY, THROW, NOISE LEVEL, NECK VELOCITY AS INDICATED.
- 2.1.2 WHERE GRILLES, REGISTERS AND DIFFUSERS PENETRATE FIRE WALLS AND FIRE PARTITIONS, PROVIDE APPROVED STEEL SLEEVE SECURED TO STRUCTURE IN ACCORDANCE WITH NFPA 90A 2009 AND REQUIRED FIRE DAMPER.
- 2.1.3 FRAMES:
- .1 FULL PERIMETER GASKETS.
  - .2 PLASTER FRAMES WHERE SET INTO PLASTER OR GYPSUM BOARD AND AS SPECIFIED.
  - .3 CONCEALED FASTENERS.
  - .4 CONCEALED MANUAL VOLUME CONTROL DAMPER OPERATORS.

2.2 MANUFACTURED UNITS

- 2.2.1 GRILLES, REGISTERS AND DIFFUSERS OF SAME GENERIC TYPE, PRODUCTS OF ONE MANUFACTURER.

2.3 RETURN AND EXHAUST GRILLES AND REGISTERS

- 2.3.1 EGG CRATE TO BE 12 X 12 X 25 (1/2" X 1/2" X 1"), TYPE AS PER DRAWING.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- 3.1.1 COMPLIANCE: COMPLY WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS OR SPECIFICATIONS, INCLUDING PRODUCT TECHNICAL BULLETINS, HANDLING, STORAGE AND INSTALLATION INSTRUCTIONS, AND DATASHEET.

3.2 INSTALLATION

- 3.2.1 INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

- 3.2.2 INSTALL WITH STAINLESS STEEL SCREWS IN COUNTERSUNK HOLES WHERE FASTENINGS ARE VISIBLE.

- 3.2.3 BOLT GRILLES, REGISTERS AND DIFFUSERS, IN PLACE, IN GYMNASIUM AND SIMILAR GAME ROOMS.

- 3.2.4 ALL DIFFUSERS AND GRILLES IN FINISHED AREAS TO HAVE CONCEALED MOUNTING. IN UNFINISHED AREAS AND WHERE GRILLES OR DIFFUSERS ARE TO BE INSTALLED IN DUCTWORK. FOR LINEAR BAR GRILLES AND LINEAR SLOT DIFFUSERS SITE MEASURE FOR EXACT FIT.

- 3.2.5 PROVIDE CONCEALED SAFETY CHAIN ON EACH GRILLE, REGISTER AND DIFFUSER IN GYMNASIUM AND SIMILAR GAME ROOMS AND ELSEWHERE AS INDICATED.

- 3.2.6 INSTALL AND ADJUST AIR REGISTERS TO PROVIDE NOISELESS AND DRAFTLESS DISTRIBUTION. PRIMARY AIR BALANCE TO BE DONE AT DUCT DAMPERS WITH FINAL ADJUSTMENT ONLY AT DIFFUSERS AND GRILLES.

3.3 CLEANING

- 3.3.1 UPON COMPLETION AND VERIFICATION OF PERFORMANCE OF INSTALLATION, REMOVE SURPLUS MATERIALS, EXCESS MATERIALS, RUBBISH, TOOLS AND EQUIPMENT.

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MECHANICAL SPECIFICATION SHEET 3 MECHANICAL GENERAL

scale:	N.T.S.
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reviewed	VS
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plot	11/01/23

drawing

M-007



1. DUCTWORK INSULATION:

- .1

APPLY INSULATION AS PER MANUFACTURERS RECOMMENDATIONS.
- .2

INSULATION TO COMPLY WITH NFPA 90A, LATEST EDITION.
- .3

INSULATION TO BE INSTALLED IN ACCORDANCE WITH ASHRAE 90.1, LATEST EDITION.
- .4

MAXIMUM FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPEMENT RATING OF 50 IN ACCORDANCE WITH NFPA 255 AND CAN4-S102, LATEST EDITIONS.
- .5

EMPLOY A LICENSED INSULATION APPLICATOR, WITH AN ESTABLISHED REPUTATION, SPECIALIZING IN THIS TYPE OF WORK.
- .6

INSULATE SYSTEMS AS FOLLOWS:

.1

ALL NEW SUPPLY AIR DUCTWORK FROM MAIN TRUNK DUCT TO DIFFUSER.

.2

ALL SUPPLY AND RETURN AIR DUCTWORK FOR A/C UNITS.

.3

REPAIR AND MAKE GOOD INSULATION WHERE NEW WORK CONNECTS INTO EXISTING SYSTEM.

.4

WHERE DUCTWORK IS INTERNALLY LINED, DO NOT INSULATE EXTERNALLY.
- .7

D-2 MINERAL FIBRE BLANKET WITH VAPOUR BARRIER

.1

TO BE USED ON ROUND, OVAL OR RECTANGULAR CONCEALED DUCTWORK LESS THAN 31" (787MM) WIDE, FOR EITHER COLD OR DUAL TEMPERATURE SYSTEMS, WHERE SUCH DUCTS WOULD OTHERWISE BE INSULATED AS DESCRIBED FOR D-4 INSULATION TYPE.
- .8

D-4 FIBROUS GLASS RIGID WITH VAPOUR BARRIER

.1

TO BE USED ON RECTANGULAR CONCEALED DUCTWORK MORE THAN (787) WIDE, FOR EITHER COLD OR DUAL TEMPERATURE SYSTEMS
- .9

MATERIALS TO COMPLY WITH:

.1

CGSB 51-GP-9M; FOR THERMAL INSULATION, MINERAL FIBRE, SLEEVING FOR PIPING AND ROUND DUCTING.

.2

CGSB 51-GP-10M FOR RIGID MINERAL FIBER BOARD FOR DUCTING.

.3

CGSB 51-GP-11M FOR MINERAL FIBRE BLANKET.

.4

CGSB 51-GP-52M FOR VAPOUR BARRIER.
- .10

INSULATION THICKNESS REQUIREMENTS AS FOLLOWS:

INSULATION THICKNESS	SYSTEM OPERATION TEMPERATURE
1"	10°C TO 65°C (50'to 149°F)

2. JACKETS:

- .1

CANVAS AS PER S. FATTAL THERMOCANVAS, JOHNS MANVILLE.

3. INSULATION FASTENINGS:

- .1

TAPE; SELF ADHESIVE, 4" (100mm) WIDE WITH A FLAME SPREAD RATING UNDER 25 AND SMOKE DEVELOPMENT RATING UNDER 50.
- .2

CONTACT ADHESIVE; QUICK SETTING, NON-FLAMABLE AND FIRE RESISTANT TO ADHERE FIBROUS GLASS TO DUCTS. FLAME SPREAD RATING UNDER 15 AND SMOKE DEVELOPMENT RATING OF 0.
- .3

WELD PINS; 4mm DIAMETER, WITH 35 mm DIAMETER HEAD FOR INSTALLATION THROUGH THE INSULATION WITH NYLON RETAINING CLIPS. LENGTH OF PIN TO SUIT THE INSULATION. FOR DUCTS OVER 24" (600mm) WIDE, USE WELD PINS FOR INSULATION ON BOTTOM OF DUCT.

DUCTWORK:

PART 1 – GENERAL

- 1.1

GENERAL

1.1.1

THIS SECTION OF THE SPECIFICATION SHALL BE READ IN CONJUNCTION WITH AND SHALL BE GOVERNED BY THE GENERAL REQUIREMENTS
- 1.2

COMPLY WITH REQUIREMENTS OF:

.1

ULC S110M FIRE TESTS FOR AIR DUCTS

.2

UL 181\_2008 STANDARDS FOR SAFETY, FACTORY MADE AIR DUCTS AND AIR CONNECTORS.

.3

NFPA 90A\_2009 STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATING SYSTEMS

.4

NFPA 90B\_2009 STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS

.5

SMACNA \_ 2005 HVAC DUCT CONSTRUCTION STANDARDS \_ SECOND EDITION
- 1.3

CERTIFICATION OF RATINGS

1.3.1

CATALOGUE OR PUBLISHED RATINGS SHALL BE THOSE OBTAINED FROM TESTS CARRIED OUT BY THE MANUFACTURER OR INDEPENDENT TESTING AGENCY SIGNIFYING ADHERENCE TO CODES AND STANDARDS.
- 1.4

VOC REQUIREMENTS

1.4.1

ALL ADHESIVES, SEALANTS, PAINTS AND COATINGS USED ON OR INSIDE OF BUILDING WEATHERPROOFING LAYER SHALL HAVE A VOC CONTENT THAT IS LESS THAN THE CONTENT LIMITS DEFINED IN SECTION 01611 LEED PRODUCT REQUIREMENTS.
- 2.1

ROUND DUCTWORK

.1

ALL ROUND DUCTWORK UP TO 60" (1500 MM) IN DIAMETER SHALL BE OF SPIRO LOCKSEAM CONSTRUCTION WITH AN INTERMEDIATE STANDARD RIB TO PROVIDE THE RIGIDITY EQUIVALENT TO SMACNA STANDARD \_ GAUGE SPIRAL DUCT.

- .2

G-60 COATED GALVANIZED OF LOCKFORMING GRADE CONFORMING TO ASTM A635 AND A924 STANDARDS. MINIMUM YIELD STRENGTH FOR STEEL AND REINFORCEMENTS SHALL BE 30,000 PSI. (207 KPA.) WITH A THICKNESS NOT LESS THAN FOR 24 GAUGE FOR DUCT DIAMETERS 250 MM. TO 425 MM. (10" TO 17"), 24 GAUGE FOR 450 MM. TO 600 MM. (18" TO 24"), 22 GAUGE FOR 650 MM. TO 800 MM. (26" TO 30") AND 20 GAUGE FOR 850 MM. TO 1500 MM. (32" TO 60") DIAMETERS.
- .3

FOR DUCT DIAMETERS LESS THAN 9" (225 MM), USE 26 GAUGE SPIRO DUCT WITHOUT RIBS.
- .4

FITTINGS:

.1

ELBOWS 4" TO 8" (100 MM TO 200 MM), SHALL BE DIESTAMPED. DIESTAMPED ELBOWS SHALL BE 2\_PIECE CONSTRUCTION WITH FULLY WELDED LONGITUDINAL SEAM.

.2

ELBOWS 9" TO 36" (225 MM TO 900 MM) SHALL BE STANDING SEAM CONSTRUCTION.

.3

ELBOWS 38" TO 60" (950 MM TO 1500 MM) SHALL BE STANDARD GORE CONSTRUCTION WITH JOINTS RIVETED AND BONDED.

.4

FITTINGS SHALL BE 1\_GAUGE THICKER THAN STANDARD DUCTWORK.
- .5

ALL COUPLINGS SHALL BE SLIPPED JOINT CONSTRUCTION WITH MINIMUM 2" (50 MM) INSERTION LENGTH. DUCT SEALER SHALL BE APPLIED ON MALE END CONNECTORS BEFORE INSERTION AND AFTERWARDS TO COVER THE ENTIRE JOINT AND SHEET METAL SCREWS. SHEET METAL SCREWS SHALL BE INSTALLED AT A MAXIMUM 12" (300 MM) SPACING, WITH A MINIMUM OF THREE (3) SCREWS PER JOINT. IN LARGE DIAMETERS, FLANGING GASKETTED JOINTS ARE ACCEPTABLE, IN LIEU OF SLIP JOINTS.

PART 2 – FLEXIBLE DUCTWORK

- 2.1

GENERAL

2.1.1

FACTORY FABRICATED.

2.1.2

PRESSURE DROP COEFFICIENTS LISTED BELOW ARE BASED ON SHEET METAL DUCT PRESSURE DROP COEFFICIENT OF 1.00.

2.1.3

FIRE RETARDANT TYPE INSULATION MATERIALS, COVERINGS AND ADHESIVES WITH MAXIMUM FLAME SPREAD RATING OF 25 AND MAXIMUM SMOKE DEVELOPED RATING OF 50 WHEN TESTED IN A ACCORDANCE WITH CAN/ULC\_S102 AND NFPA 255\_2006. MATERIALS TESTED IN ACCORDANCE WITH ASTM C411\_05 SHALL NOT FLAME, SOLDER, GLOW OR SMOKE AT TEMPERATURE TO WHICH EXPOSED IN SERVICE. FLEXIBLE DUCT SYSTEM SHALL MEET OBC REQUIREMENTS FOR SMOKE AND FLAME SPREAD FOR RETURN AIR PLENUMS.
- 2.2

METALLIC INSULATED

2.2.1

SPIRAL WOUND FLEXIBLE ALUMINUM WITH 1" (25 MM) EXTERNAL INSULATION.

2.2.2

PERFORMANCE:

.1

TEMPERATURE RANGE: \_40 F. TO 250 F. (\_40 C. TO 120 C.)

.2

MINIMUM BEND RADIUS: 1.5 X DIAMETER.

.3

VINYL SLEEVE OUTER COVERING.

.4

MAXIMUM WORKING PRESSURE: 12" (3000 PA).

.5

CLASS 1 DUCT MATERIAL.

PART 3 – GALVANIZED STEEL DUCTWORK

- 3.1

G-60 COATED GALVANIZED OF LOCKFORMING GRADE CONFORMING TO ASTM A653 AND A924 STANDARDS. MINIMUM YIELD STRENGTH FOR STEEL SHEET AND REINFORCEMENTS SHALL BE 30,000 PSI (207 KPA).
- 3.2

THE SHEET METAL GAUGE AND REQUIREMENT FOR REINFORCEMENT SHALL BE IN ACCORDANCE WITH TABLES 1-3-1/2" W.G. STATIC PRESSURE TO TABLE 1-7 4" W.G. STATIC PRESSURE OF SMACNA.
- 3.3

FABRICATION SHALL BE TO SMACNA STANDARDS.
- 3.4

JOINTS: TO SMACNA OR PROPRIETARY MANUFACTURED DUCT JOINT. PROPRIETARY MANUFACTURED FLANGED DUCT JOINT SHALL BE CONSIDERED TO BE A CLASS C SEAL.
- 3.5

STANDARD OF ACCEPTANCE: NAMASCO, DUCTMATE, EXANNO, NEXUS.
- 3.6

JOINT REINFORCEMENT SHALL BE IN ACCORDANCE WITH TABLES 1-10 TO 1-13 OF THE SMACNA STANDARD.

PART 4 – EXECUTION

- 4.1

DUCT INSTALLATION

4.1.1

INSTALL WHERE INDICATED AND IN ACCORDANCE WITH PREFERRED METHOD OF SMACNA AND THE FOLLOWING:

.1

CONNECTIONS:

.1

DUCT SIZES 300 MM (12") AND UNDER:

.1

PROVIDE A MINIMUM OF THREE (3) #8 SHEET METAL SCREWS EQUALLY SPACED TO HOLD THE FLEXIBLE DUCT.
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- MECHANICAL SPECIFICATION SHEET 4 MECHANICAL GENERAL
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| scale:   | N.T.S.   |
| drawn    | BK       |
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| plot     | 11/01/23 |
- drawing M-008



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- .2 DUCT SIZES 300 MM (12") AND UNDER:
- .1 PROVIDE A MINIMUM OF THREE (3) #8 SHEET METAL SCREWS EQUALLY SPACED TO HOLD THE FLEXIBLE DUCT.
- .3 SCREWS SHALL BE LOCATED AT LEAST 1/2" (12 MM) FROM THE END OF THE DUCT.
- .4 THE COLLAR TO WHICH THE FLEXIBLE DUCT IS ATTACHED SHALL BE A MINIMUM 2" (50 MM) IN LENGTH.
- .5 COVER ENTIRE JOINT WITH TAPE AND SEAL AS SPECIFIED IN SECTION 15801.
- .2 SUPPORTS:
- .1 SUPPORT SHALL BE IN ACCORDANCE WITH SMACNA.
- .2 THE MAXIMUM AMOUNT OF SAG FOR FLEXIBLE DUCT SHALL NOT EXCEED 1/2" (12 MM) PER FOOT. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED.
- .3 LENGTH:
- .1 MAXIMUM LENGTH OF FLEXIBLE DUCT: 3000 MM (10 FT.).
- .2 MINIMUM LENGTH OF FLEXIBLE DUCT CONNECTING TO CEILING DIFFUSERS SHALL BE 72" (1800 MM).

-END-

**TESTING, ADJUSTING AND BALANCING (TAB):**

**PART 1 – GENERAL**

**1.1 GENERAL**

- 1.1.1 THIS SECTION OF THE SPECIFICATION SHALL BE READ IN CONJUNCTION WITH AND BE GOVERNED BY THE GENERAL CONDITIONS.
- 1.1.2 THE ACCEPTABLE TAB CONTRACTORS ARE AS FOLLOWS. THE DIVISION 15 CONTRACTOR SHALL SELECT ONE OF THE FOLLOWING CONTRACTORS TO PERFORM THE WORK. THE DIVISION 15 CONTRACTOR SHALL INDICATE THE TAB CONTRACTOR THAT THEY INTEND TO USE ON THE SUPPLEMENTARY TENDER FORM:
- .1 JOHN PRICE ENTERPRISES;
- .2 FLOWSET;
- .3 CLARKE BALANCING;
- .4 DESIGN TEST AND BALANCE.
- .5 ACE COMMERCIAL AIR TEST AND BALANCING.
- 1.1.3 TAB: MEANS TO TEST, ADJUST AND BALANCE ALL SYSTEMS, INCLUDING EQUIPMENT, TO PERFORM IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- 1.1.4 FOLLOW START\_UP PROCEDURES AS RECOMMENDED BY MANUFACTURER.
- 1.1.5 SPECIAL START\_UP PROCEDURES MAY BE SPECIFIED ELSEWHERE.

**1.2 SITE INSPECTIONS AND SUBSEQUENT MEETINGS:**

- 1.2.1 SCHEDULE ONCE A MONTH, SITE VISITS TO CORRESPOND WITH THE WEEKLY SITE MEETING. AFTER EACH SITE VISIT SUBMIT A WRITTEN REPORT TO THE CONSTRUCTION MANAGER AND MECHANICAL CONSULTANT. SITE VISITS SHALL COMMENCE AT THE START OF THE AIR DISTRIBUTION WORK AND BE SPREAD OVER THE CONSTRUCTION PERIOD UP TO THE START OF THE BALANCE OF THE WORK. IF WORK REQUIRING CORRECTION IS DISCOVERED DURING AN INSPECTION, BE SURE THAT THE REQUIRED CORRECTION WORK IS CLEARLY INDICATED IN THE REPORT. IN ADDITION TO SITE MEETINGS AND INSPECTIONS SPECIFIED ABOVE, ATTEND, WHEN REQUESTED BY THE CONSULTANT, AT THE TAB CONTRACTOR'S EXPENSE ANY OTHER MEETINGS WHERE THE TAB CONTRACTOR'S PRESENCE IS REQUIRED.

**1.3 DIVISION 15000 ASSISTANCE**

- 1.3.1 THE DIVISION 15 CONTRACTOR SHALL PROVIDE THE TAB CONTRACTOR ALL OF THE ASSISTANCE WHICH IS REQUIRED TO COMPLETE THE TAB CONTRACTOR'S WORK. THIS SHALL INCLUDE BUT NOT BE LIMITED TO:
- .1 PROVISION OF ALL REQUIRED SHOP DRAWINGS AND FAN AND PUMP CURVES.
- .2 PROVISION OF ALL REQUIRED TEST PORTS.
- .3 ALL ASSISTANCE REQUIRED TO BALANCE VARIABLE SPEED SYSTEMS IN ACCORDANCE WITH THE DESIGN DOCUMENTS.

**1.4 SYSTEMS TO BE TESTED**

- 1.4.1 TAB TO APPLY TO FOLLOWING SYSTEMS, EQUIPMENT AND RELATED CONTROLS:
- .1 AIR HANDLING.
- .2 HYDRONIC HEATING.
- .3 HYDRONIC COOLING.
- .4 EXHAUST SYSTEMS.

**1.5 REFERENCE STANDARDS:**

- 1.5.1 DO TAB OF COMPLETE MECHANICAL SYSTEMS OVER ENTIRE OPERATING RANGE IN ACCORDANCE WITH MOST STRINGENT CONDITIONS OF SELECTED STANDARD:
- .1 AABC (ASSOCIATED AIR BALANCE COUNCIL).
- .2 ASHRAE (AMERICAN SOCIETY OF HEATING REFRIGERATING & AIR CONDITIONING ENGINEERS).
- .3 NABC (NATIONAL AIR BALANCE COUNCIL).
- .4 SMACNA (SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION).
- .5 SPECIFICATIONS HEREIN OR ELSEWHERE IN CONTRACT DOCUMENTS.

**1.6 QUALIFICATIONS**

- 1.6.1 TESTING AND BALANCING PERSONNEL SHALL BE EXPERIENCED IN BALANCING OF MECHANICAL SYSTEMS.

**1.7 SHOP DRAWINGS**

- 1.7.1 PRIOR TO COMMENCING WORK, SHOP DRAWINGS SHALL BE SUBMITTED SHOWING EQUIPMENT, PROOF OF CALIBRATION, TESTING METHODS TO BE USED WITH EACH DIFFERENT STYLE OF DIFFUSER AND MEASURING POINT, AND FORMS AND DIAGRAMS TO BE USED FOR THE AIR AND HYDRONIC BALANCE.

**1.8 FINAL BALANCING**

- 1.8.1 START FINAL TAB ONLY WHEN BUILDING IS ESSENTIALLY COMPLETED, INCLUDING:
- .1 INSTALLATION OF CEILINGS, DOORS, WINDOWS, LIGHT FIXTURES AND OTHER CONSTRUCTION AFFECTING TAB.
- .2 APPLICATION OF SEALING, CAULKING AND WEATHER\_STRIPPING.
- .3 NORMAL OPERATION OF MECHANICAL SYSTEMS AFFECTING TAB.

**1.9 ACCURACY**

- 1.9.1 DO TAB TO WITHIN PLUS OR MINUS 10% OF DESIGN VALUES AT THE DIFFUSERS AND 5% AT THE AIR HANDLING UNITS.
- 1.9.2 MEASUREMENTS TO BE ACCURATE TO WITHIN PLUS OR MINUS 10 % OF ACTUAL VALUES AT THE DIFFUSERS AND 5% AT THE AIR HANDLING UNIT.
- 1.9.3 A FAILURE OF MORE THAN 10-PERCENT OF THE SELECTED VERIFICATION READINGS SHALL RESULT IN THE REJECTION OF THE REPORT AS UNACCEPTABLE.
- 1.9.4 SHOULD THE REPORT BE REJECTED, THE TAB CONTRACTOR SHALL REBALANCE ALL SYSTEMS, SUBMIT NEW CERTIFIED REPORTS AND MAKE A REINSPECTION AT NO ADDITIONAL COST TO THE OWNER.
- 1.9.5 BEAR COSTS TO REPEAT TAB, AS REQUIRED, TO SATISFACTION OF CONSULTANT.
- 1.9.6 INSTRUMENT CALIBRATION: IN ACCORDANCE WITH REFERENCED STANDARD, WITHIN THREE (3) MONTHS OF COMMENCEMENT OF TAB.
- 1.9.7 PROVIDE PROOF OF CALIBRATION TO CONSULTANT.

**1.10 REPORT:**

- 1.10.1 FORMAT TO BE IN ACCORDANCE WITH REFERENCED STANDARD LISTED ABOVE, BUT USING DESIGN DRAWING UNITS.
- 1.10.2 REPORTS SHALL BE INDEXED AS FOLLOWS:
- .1 AIR SYSTEMS
- .1 SUMMARY
- .2 PROCEDURE
- .3 INSTRUMENTATION
- .4 DRAWINGS
- .5 EQUIPMENT/COMPONENT SUMMARY
- .6 FAN DATA SHEETS
- .7 FAN CURVES
- .8 AIR HANDLING UNIT PROFILE DATA
- .9 TRAVERSE DATA AND SCHEDULE
- .10 OUTLETS DATA SUMMARY AND SCHEMATIC (PER SYSTEM)
- .11 DIAGNOSTICS
- .2 HYDRONIC SYSTEMS
- .1 SUMMARY
- .2 PROCEDURE
- .3 INSTRUMENTATION
- .4 DRAWINGS
- .5 EQUIPMENT/COMPONENT SUMMARY
- .6 PUMP DATA SHEETS
- .7 PUMP CURVES
- .8 PUMP PROFILE DATA
- .9 BALANCING VALVE SUMMARY AND SCHEMATIC (PER SYSTEM)
- .10 COILS (HEATING AND COOLING) PER SYSTEM.
- .11 DIAGNOSTICS
- 1.10.3 PRODUCE "AS\_BUILT" FULL SYSTEM SCHEMATICS AND FLOOR PLANS IDENTIFYING THE LOCATION WHERE ALL MEASUREMENTS WERE TAKEN AND THE RESULTING FLOWS THAT WERE OBTAINED. USE AS\_BUILT DRAWINGS FOR REFERENCE.
- 1.10.4 SUBMIT TWO (2) COPIES OF PRELIMINARY TAB REPORTS, EACH IN "D" RING BINDERS, COMPLETE WITH INDEX TABS FOR VERIFICATION AND APPROVAL OF CONSULTANT.
- 1.10.5 SUBMIT SIX (6) COPIES OF FINAL TAB REPORTS AFTER APPROVAL BY THE CONSULTANT.
- 1.10.6 OBTAIN THE SHOP DRAWING FOR EACH FAN SYSTEM. MARK THE ACTUAL OPERATING POINT ON THE FAN CURVE FOR EACH FAN. INCLUDE THE FAN CURVES FOR EACH FAN IN THE BALANCING REPORT.

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specifications are the property of the architect. The contractor shall verify all dimensions and information on site and report any discrepancy to architect before proceeding.

LL 2S NURSE STATION RENOVATION

3197 LAKESHORE BLVD.W., ETOBICOKE

MECHANICAL SPECIFICATION SHEET 5  
MECHANICAL GENERAL

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plot	11/01/23

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- 1.10.7 OBTAIN THE SHOP DRAWING FOR EACH PUMP SYSTEM. ON THE PUMP CURVE FOR EACH PUMP MARK THE ACTUAL OPERATING POINT ON THE CURVE. INCLUDE THE PUMP CURVES WITH SUPERIMPOSED POWER DRAW, RPM AND IMPELLER SIZE.
- 1.11 SETTINGS
- 1.11.1 LOCK AND PERMANENTLY MARK SETTINGS AS REQUIRED BY REFERENCE STANDARD.
- 1.12 TAB COMPLETION
- 1.12.1 TAB TO BE CONSIDERED COMPLETE ONLY WHEN FINAL REPORTS ARE APPROVED BY CONSULTANT.
- 1.12.2 CONFIRM THAT ALL FLOW STATIONS ARE PROVIDING ACCURATE MEASUREMENTS AS DESCRIBED BELOW.
- 1.13 AIR MOVING
- 1.13.1 GENERAL
- .1 MEASUREMENTS AS REQUIRED BY SYSTEMS REFERENCED STANDARDS, INCLUDING, BUT NOT LIMITED TO, FOLLOWING:
- .1 DUE TO THE EXTENT OF THE HARD CEILINGS SOME AREAS WILL BE REQUIRED TO BE PRE-BALANCED PRIOR TO THE INSTALLATION OF THE DRYWALL CEILINGS. REFER TO ITEM 3.2 FOR REQUIREMENTS.
- 1.13.2 MEASUREMENTS:
- .1 AIR VELOCITY.
- .2 STATIC PRESSURE.
- .3 VELOCITY PRESSURE.
- .4 TEMPERATURE:
- .1 WET BULB.
- .2 DRY BULB.
- .5 CROSS SECTIONAL AREA.
- .6 RPM.
- .7 ELECTRICAL POWER:
- .1 VOLTAGE
- .2 CURRENT DRAW.
- 1.13.3 LOCATION OF EQUIPMENT MEASUREMENTS:
- .1 INLET AND OUTLET OF EACH:
- .1 FAN.
- .2 COIL.
- .3 FILTER.
- .4 DAMPER.
- .5 FLOW STATION
- .6 OTHER AUXILIARY EQUIPMENT.
- 1.13.4 LOCATION OF SYSTEM MEASUREMENTS AT:
- .1 MAIN DUCTS.
- .2 MAIN BRANCH DUCTS.
- .3 SUB\_BRANCH DUCTS.
- .4 EACH SUPPLY, EXHAUST AND RETURN AIR INLET AND OUTLET.
- .5 OTHER AUXILIARY EQUIPMENT.
- .6 ALL AREAS SERVED BY SYSTEM.
- .7 BEFORE AND AFTER THE SILENCERS.
- 1.14 HYDRONIC SYSTEMS
- 1.14.1 GENERAL
- .1 MEASUREMENTS AS REQUIRED BY REFERENCED STANDARDS, INCLUDING, BUT NOT LIMITED TO, FOLLOWING:
- 1.14.2 MEASUREMENTS:
- .1 FLOW.
- .2 PRESSURE.
- .3 TEMPERATURE.
- .4 SPECIFIC GRAVITY.
- .5 RPM.
- .6 ELECTRICAL POWER:
- .1 VOLTAGE.
- .2 CURRENT DRAW.

- 1.14.3 LOCATION OF EQUIPMENT MEASUREMENTS:
- .1 INLET AND OUTLET OF EACH:
- .1 COIL
- .2 PUMP
- .3 HEAT EXCHANGER
- .4 CHILLER
- 1.14.4 HEATING AND COOLING SYSTEM.
- .1 FLOW AND SET POINT AT EACH CIRCUIT BALANCING VALVE.
- .2 PUMP
- .3 BALANCING VALVES.
- .4 CONTROL VALVES.
- 1.14.5 BALANCING PUMPS
- .1 FOR CONSTANT VOLUME SYSTEMS THE TAB CONTRACTOR SHALL OPEN THE MAIN BALANCING VALVES IN THE SYSTEM AND MEASURE THE FLOW FOR EACH PUMP SYSTEM WITH THE SYSTEM RUNNING AT ITS MAXIMUM CAPACITY. THE TAB CONTRACTOR SHALL SUBMIT A PRELIMINARY REPORT INDICATING THE OPERATING POINT FOR EACH PUMP AND THE REVISED IMPELLER SIZE (IF REQUIRED) TO MAKE THE PUMP OPERATE AT ITS PEAK EFFICIENCY WITHOUT THE REQUIREMENT FOR CLOSING THE CIRCUIT BALANCING VALVES.
- .2 THE PUMP MANUFACTURER WILL INCLUDE FOR THE COST OF THE IMPELLER TRIM. THE TAB CONTRACTOR SHALL CONFIRM THE PUMP IS PROVIDING THE SPECIFIED FLOW ONCE THE IMPELLER TRIM HAS BEEN COMPLETED.
- .3 FOR VARIABLE VOLUME SYSTEMS AN IMPELLER TRIM IS NOT REQUIRED. THE TAB CONTRACTOR SHALL ADJUST THE VARIABLE FREQUENCY DRIVE TO PROVIDE THE CORRECT FLOW TO THE SYSTEM. THE TAB CONTRACTOR SHALL IDENTIFY THE SPEED THAT THE VARIABLE FREQUENCY DRIVE IS SET AT TO ACHIEVE THIS FLOW RATE ON THE BALANCING REPORT.

PART 2 – EXECUTION

- 2.1 GENERAL
- 2.1.1 BALANCING SHALL BE CARRIED OUT BY AN INDEPENDENT QUALIFIED BALANCING COMPANY. BALANCING COMPANY MUST BE ONE OF THE APPROVED BALANCING COMPANIES.
- 2.1.2 REPLACE SHEAVES AS REQUIRED TO BALANCE SYSTEMS TO THE INDICATED AIR VOLUMES. SHEAVES SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER BY THE DIVISION 15 CONTRACTOR.
- 2.1.3 DIVISION 15 CONTRACTOR TO PROVIDE ALL REQUIRED PARTS, BELTS AND ADJUSTMENTS FOR ALL SYSTEMS AS DEEMED NECESSARY TO COMPLETE THE REQUIRED BALANCING.
- 2.1.4 THE DIVISION 15 CONTRACTOR SHALL PROVIDE THE REQUIRED ASSISTANCE TO THE TAB CONTRACTOR AS DEEMED NECESSARY BY THE CONSULTANT.
- 2.1.5 THE TAB CONTRACTOR SHALL VISIT THE SITE IN ACCORDANCE WITH ITEM 1.3 ABOVE.
- 2.1.6 THE TAB CONTRACTOR SHALL CONFIRM THAT THE FLOW STATIONS PROVIDED IN THE SUPPLY, RETURN AND EXHAUST AIR DUCTWORK ARE MEASURING ACCURATE READINGS. THE VARIABLE SPEED DRIVE SHALL BE ADJUSTED TO ALLOW FOR MEASUREMENTS AT 50%, 75% AND 100% FLOW. THE FLOW DISPLAYED BY THE FLOW STATIONS SHALL BE CONFIRMED TO BE ACCURATE. PROVIDE IN THE BALANCING REPORT THE RESULTS OF THE THREE POINT CALIBRATION.
- 2.2 PREBALANCING
- 2.2.1 FOR THE FOLLOWING AREAS THE AIR BALANCING CONTRACTOR SHALL PRESET THE BALANCING DAMPERS PRIOR TO THE INSTALLATION OF THE DRYWALL CEILINGS BY EITHER RUNNING THE AIR HANDLING UNIT AT 100 % OUTSIDE AIR (IF UNIT IS AVAILABLE) OR PROVIDING A PORTABLE FAN TO PROVIDE SUPPLY AIR AT THE REQUIRED STATIC PRESSURE.
- 2.2.2 ONCE THE SYSTEM HAS BEEN PRE-BALANCED THE BALANCING DAMPERS THAT WILL BE LOCATED ABOVE THE DRYWALL CEILINGS SHALL BE SECURELY LOCKED IN PLACE.
- 2.2.3 SYSTEM AIR FLOWS SHALL BE CONFIRMED ONCE THE SPACE HAS BEEN COMPLETED.
- 2.2.4 THE DIVISION 15 CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING FOR AND PAYING FOR ANY INSTALLATION COSTS FOR THE TEMPORARY POWER TO RUN THE AIR HANDLING UNIT OR THE PORTABLE FAN.

– END –


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The contractor shall  
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LL 2S NURSE STATION  
RENOVATION

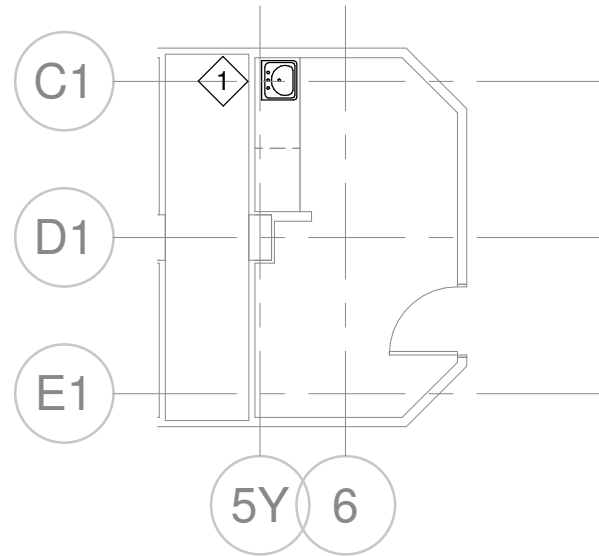
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MECHANICAL SPECIFICATION  
SHEET 6  
MECHANICAL GENERAL

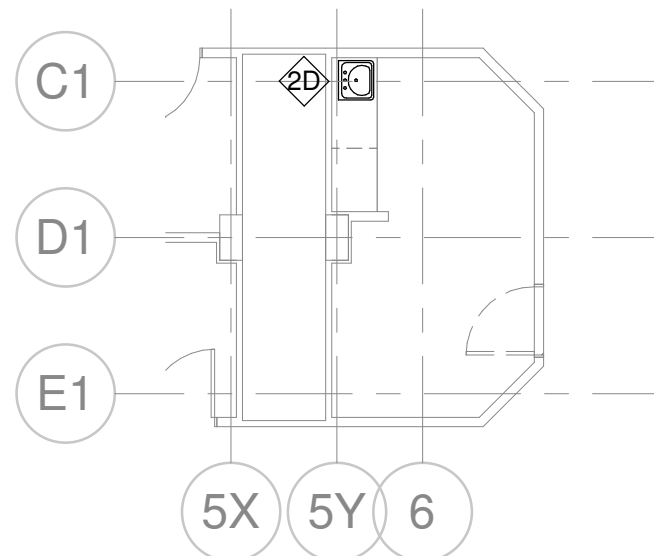
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reviewed	VS
job	23511.06
plot	11/01/23

drawing

M-010



1 PROPOSED PLAN - NEW MED. ROOM (RM.252)  
1 : 100



2 DEMO PLAN- EX. FAMILY ROOM (RM. 252)  
1 : 100

GENERAL NOTES:

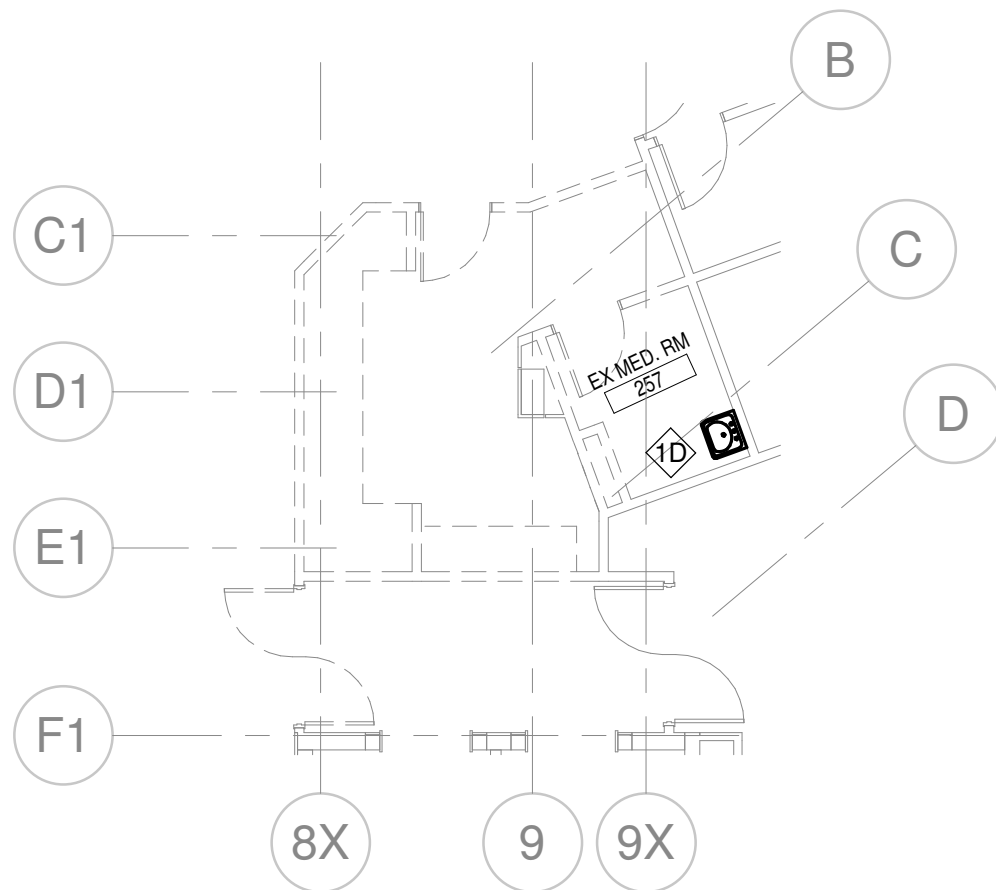
1. ALL EXISTING SERVICES SHOWN ON THIS DRAWING ARE FROM EXISTING ARCHIVE DRAWINGS WHICH MAY VARY FROM ACTUAL. CONTRACTOR SHALL REVIEW THE ACTUAL LOCATION OF PIPING TO CONNECT PIPES TO EXISTING. CONTRACTOR SHALL NOTE THE ACTUAL PIPING LAYOUT TO PRODUCE AS-BUILT DWGS.
2. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID ANY DAMAGE TO EXISTING SERVICES. ANY DAMAGE TO EXISTING SERVICES SHALL BE FIXED BY CONTRACTOR AT NO COST TO THE PROJECT.
3. VERIFY EXISTING CONDITION PRIOR TO CONSTRUCTION.
4. PROVIDE VENTING AS PER OBC.

DEMOLITION NOTES:

- 1D DEMOLISH EXISTING PLUMBING FIXTURES AS FOLLOWS:
1. CUT & CAP ALL DCW & DHW PIPING AND KEEP IT WITHIN WALL CAVITY.
  2. CUT & CAP ALL SANITARY AND VENT PIPING AND KEEP IT WITHIN WALL CAVITY.
  3. THE NURSE STATION & MED. ROOM IS BEING DEMOLISHED AND IS CONVERTED INTO A RES. LOUNGE.
- 2D MECHANICAL CONTRACTOR SHALL DISCONNECT ALL P&D CONNECTIONS AND MAKE THE P&D SYSTEM SAFE. MAKING SAFE TO SHUT OFF THE WATER SUPPLY AND CAP THE SANITARY PIPES SO THAT P&D SYSYEM CAN BE CONCEALED ON THE EXISTING WALL. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND TEMPORARILY REMOVE EXISTING SINK AND FAUCET TO FACILITATE THE COUNTERTOP REPLACEMENT. MECHANICAL CONTRACTOR SHALL RETAIN PLUMBING ACCESSORIES AND DRAINAGE ACCESSORIES RELATED TO THE PLUMBING FIXTURES.

CONSTRUCTION NOTES:

- 1 MECHANICAL CONTRACTOR SHALL RE-INSTALL THE SINK REMOVED IN ITEM 2D. CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO CONNECT THE PLUMBING AND DRAINAGE BACK TO EX. SINK.



3 DEMO PLAN- EX. NURSE STATION (RM.256 & 257)  
1 : 100

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4	2024-04-12	ISSUED FOR DESIGN SIGN-OFF	CEL
3	2024-02-06	ISSUED FOR DESIGN REVIEW	CEL
2	2023-12-06	ISSUED FOR OWNER'S REVIEW	CEL
1	2023-11-01	ISSUED FOR COORDINATION	CEL
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specifications are the  
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The contractor shall  
verify all dimensions and  
information on site and  
report any discrepancy to  
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proceeding.

LL 2S NURSE STATION  
RENOVATION

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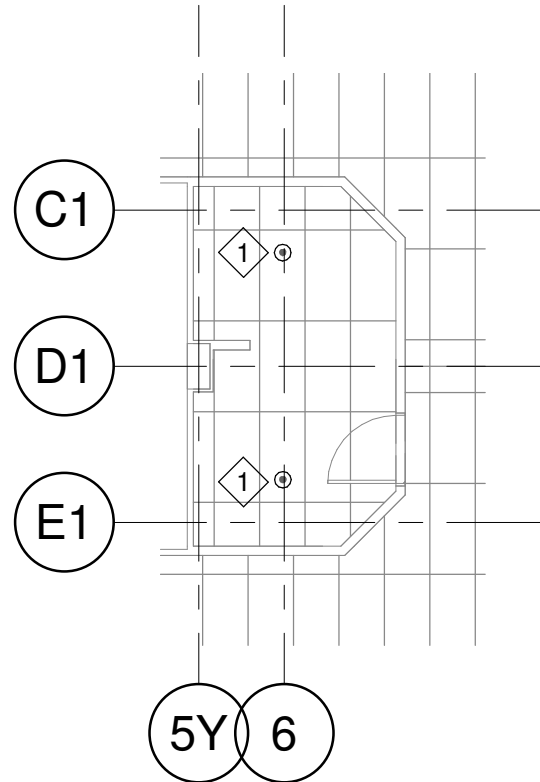
LEVEL 2 DEMOLITION AND  
NEW WORK  
PLUMBING AND DRAINAGE

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plot	11/01/23

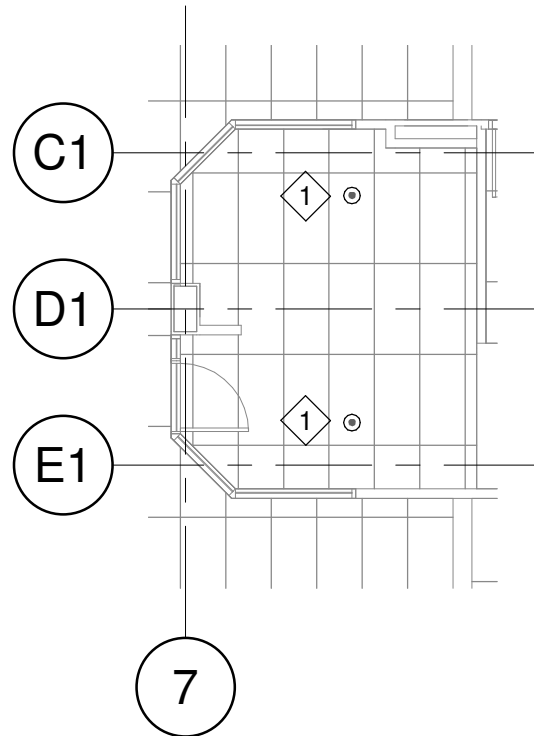
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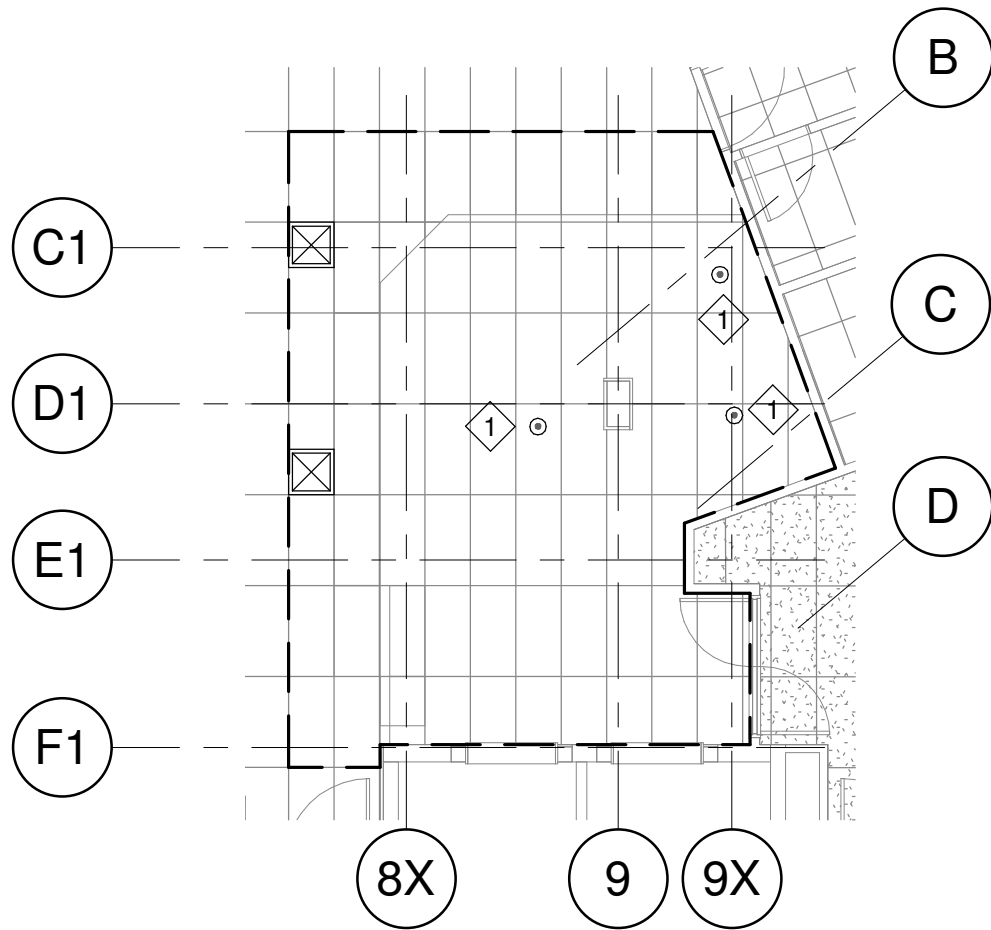




1 SECOND FLOOR - NEW MED ROOM (RM 252)  
1 : 100



2 SECOND FLOOR - NEW NURSE STATION (RM 253)  
1 : 100



3 SECOND FLOOR - NEW RES. LOUNGE (RM 256 & 257)  
1 : 100

GENERAL NOTES:

1. PROTECT SPRINKLER HEADS DURING THE RENOVATION WORKS.
2. ALL SPRINKLER HEADS IN THE ROOMS TO BE RETAINED.

CONSTRUCTION NOTES:

- 1 SPRINKLER HEADS IN THE ROOMS TO BE RETAINED.

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LL 2S NURSE STATION  
RENOVATION

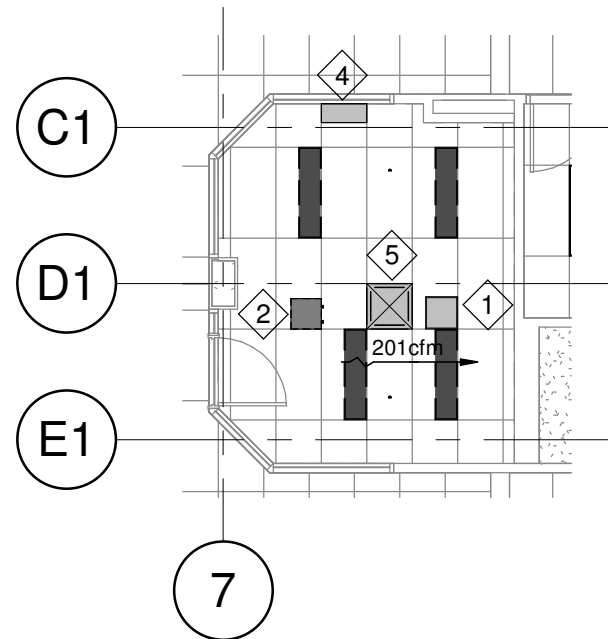
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LEVEL 2 PROPOSED PLAN  
FIRE PROTECTION

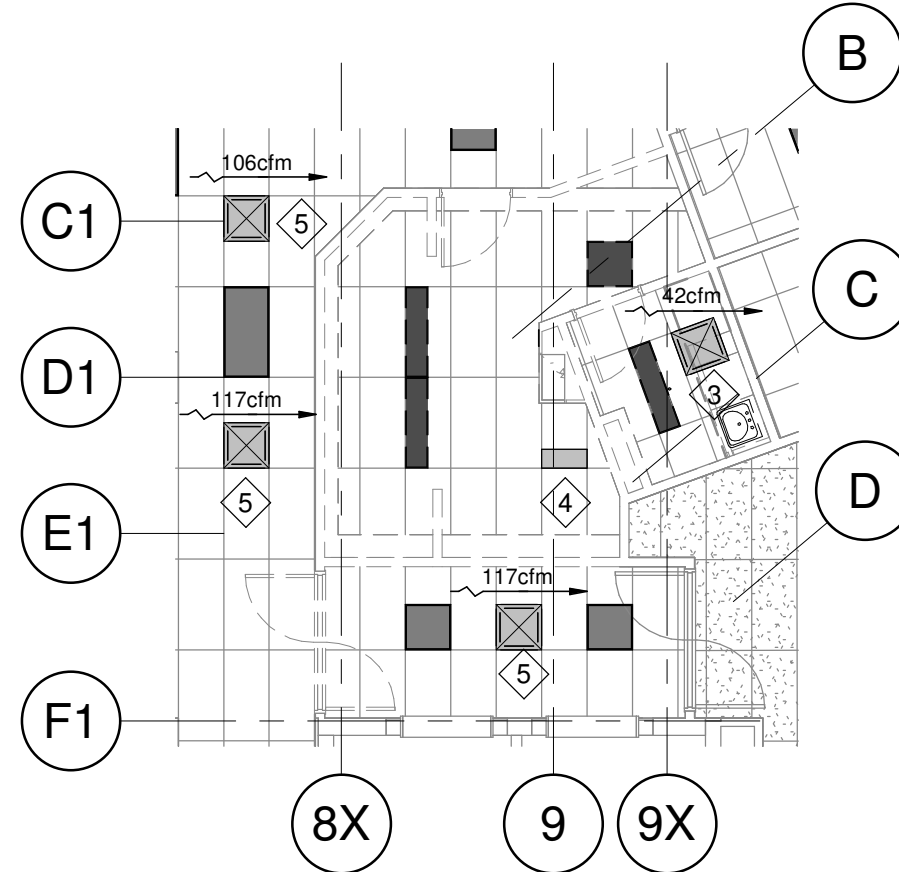
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job	23511.06
plot	11/01/23

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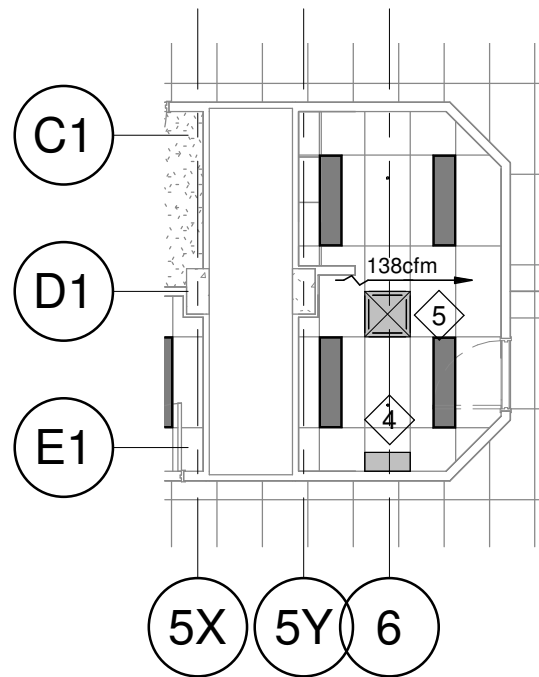
M-301



1 DEMO PLAN- EXISTING LOUNGE (RM.253)  
1 : 100



2 DEMO PLAN- EXISTING NURSE STATION (RM.256 & 257)  
1 : 100



3 DEMO PLAN- EXISTING FAMILY ROOM (RM.252)  
1 : 100

GENERAL NOTES:

1. PROTECT EXISTING DUCTWORK SYSTEM FROM DAMAGE DURING CONSTRUCTION
2. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID ANY DAMAGE TO EXISTING SERVICES. ANY DAMAGE TO EXISTING SERVICES SHALL BE FIXED BY CONTRACTOR AT NO COST TO THE PROJECT.
3. VERIFY EXISTING CONDITION PRIOR TO CONSTRUCTION.
4. REMOVE EX. DIFFUSER CAREFULLY, SO THAT THE EX. FLEX DUCTWORK IS NOT DAMAGED. COORDINATE WITH THE REMOVAL AND REPLACEMENT OF CEILING TILES.

DEMOLITION NOTES:

- 1 REMOVE EX.RETURN AIR GRILLE. PROTECT ASSOCIATED BRANCH DUCTWORK CONNECTION.
- 2 REMOVE THE EXISTING AIR CLEANER AND RETURN TO OWNER. COORDINATE WITH THE ELECTRICAL CONTRACTOR THE REMOVAL OF THE POWER CONNECTION TO THE EX. AIR CLEANER.
- 3 MECHANICAL CONTRACTOR SHALL DISCONNECT THE FLEX AIR DUCT FROM THE EX. SUPPLY AIR DIFFUSER. REFER TO M-401 FOR NEW WORKS.
- 4 EXISTING RETURN AIR GRILLES TO BE RETAINED.
- 5 EXISTING DIFFUSERS TO BE RETAINED

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1	2023-11-01	ISSUED FOR COORDINATION	CEL
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LL 2S NURSE STATION  
RENOVATION

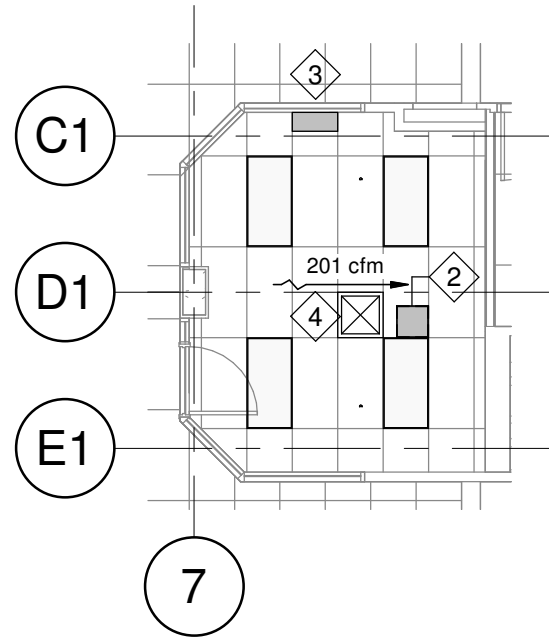
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LEVEL 2 DEMOLITION PLAN  
HVAC DUCTWORK

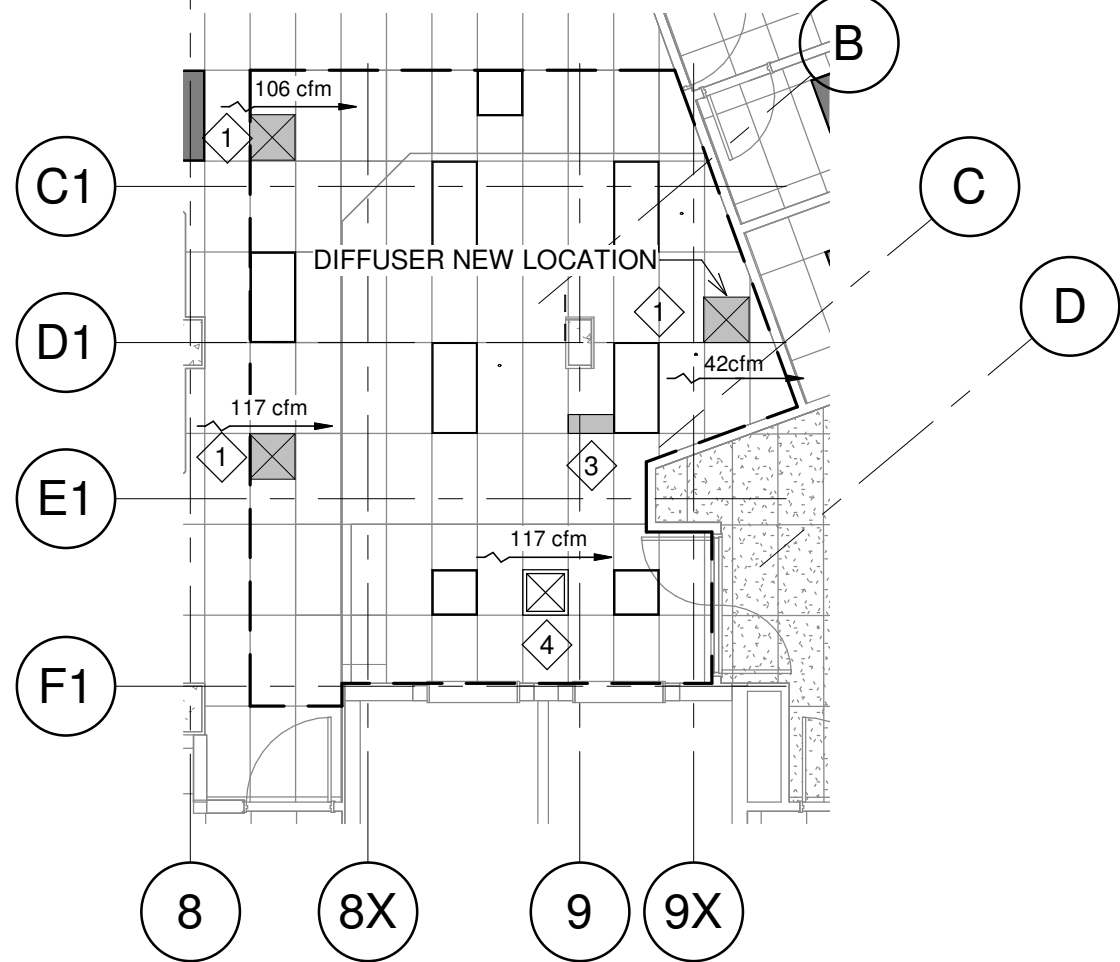
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reviewed VS  
job 23511.06  
plot 11/01/23

drawing

MD-401



1 PROPOSED PLAN - NEW NURSE STATION (RM.253)  
1 : 100



2 PROPOSED PLAN- NEW RES. LOUNGE (RM.256 & 257)  
1 : 100

GENERAL NOTES:

- WHEN REMOVING EXISTING DIFFUSER FOR REPLACEMENT:
  - 1.1 REMOVE EX. DIFFUSER CAREFULLY, SO THAT THE EX. FLEX DUCTWORK AND BALANCING DAMPER IS NOT DAMAGED. COORDINATE WITH THE REMOVAL AND REPLACEMENT OF CEILING TILES.
- PROTECT THE EX. DIFFUSER FROM DAMAGE DURING CONSTRUCTION
- SEAL ALL DUCTWORK IN THE CONSTRUCTION AREA TO PREVENT DUST CONTAMINATING HVAC SYSTEM.
- PROVIDE COMPLETE AIR BALANCING OF THE HVAC DISTRIBUTION SYSTEM AT THE END OF CONSTRUCTION

CONSTRUCTION NOTES:

- RE-INSTALL EX. CEILING MOUNTED DIFFUSER TO NEW LOCATION. COORDINATE WITH ARCHITECTURAL RCP.
- PROVIDE A 400MM X 400MM NEW RETURN AIR GRILLE.
- EXISTING RETURN AIR GRILLES TO BE RETAINED
- EXISTING DIFFUSERS TO BE RETAINED

5	2024-04-26	ISSUED FOR PERMIT TENDER	CEL
4	2024-04-12	ISSUED FOR DESIGN SIGN-OFF	CEL
3	2024-02-06	ISSUED FOR DESIGN REVIEW	CEL
2	2023-12-06	ISSUED FOR OWNER'S REVIEW	CEL
1	2023-11-01	ISSUED FOR COORDINATION	CEL
#	Date:	Revision:	By
revisions			



specifications are the  
property of the architect.  
The contractor shall  
verify all dimensions and  
information on site and  
report any discrepancy to  
architect before  
proceeding.

**LL 2S NURSE STATION  
RENOVATION**

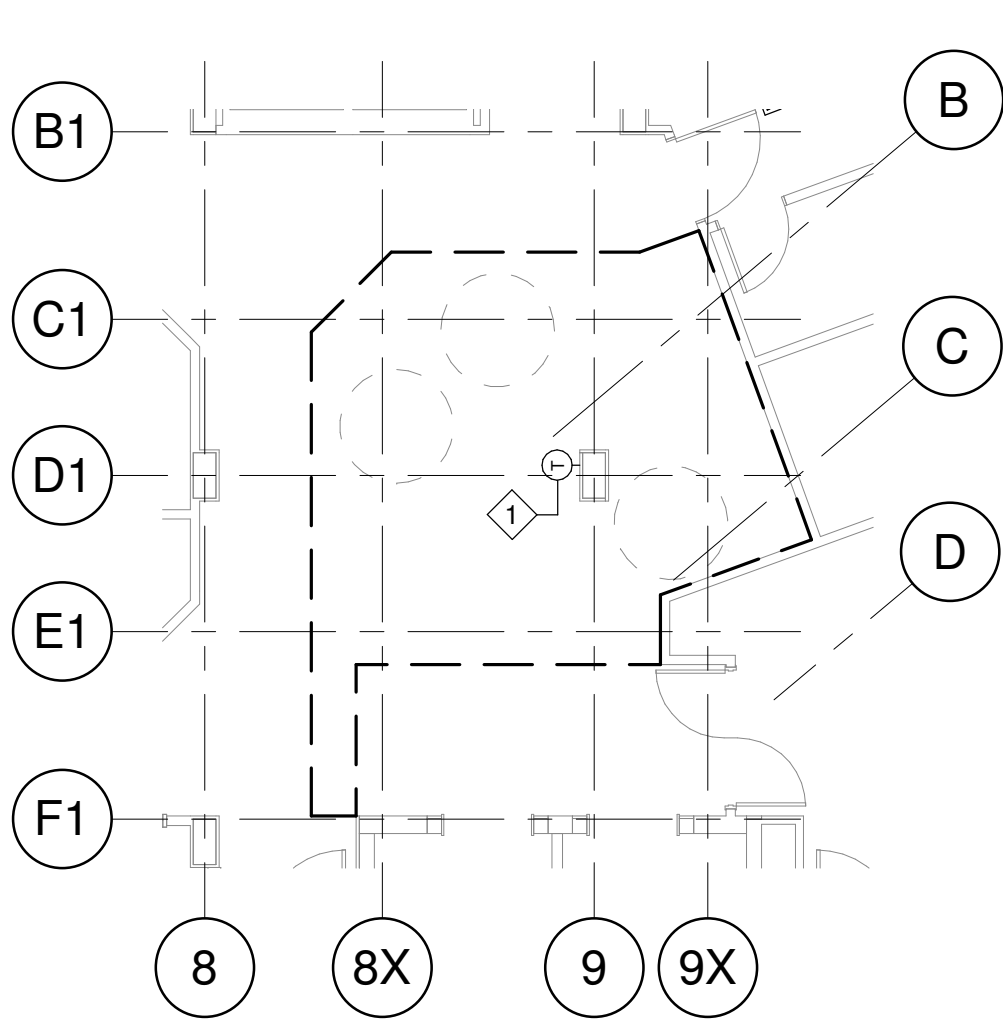
3197 LAKESHORE BLVD.W., ETOBICOKE

**LEVEL 2 PROPOSED PLAN  
HVAC DUCTWORK**

scale:	1 : 100
drawn	BK
reviewed	VS
job	23511.06
plot	11/01/23

drawing

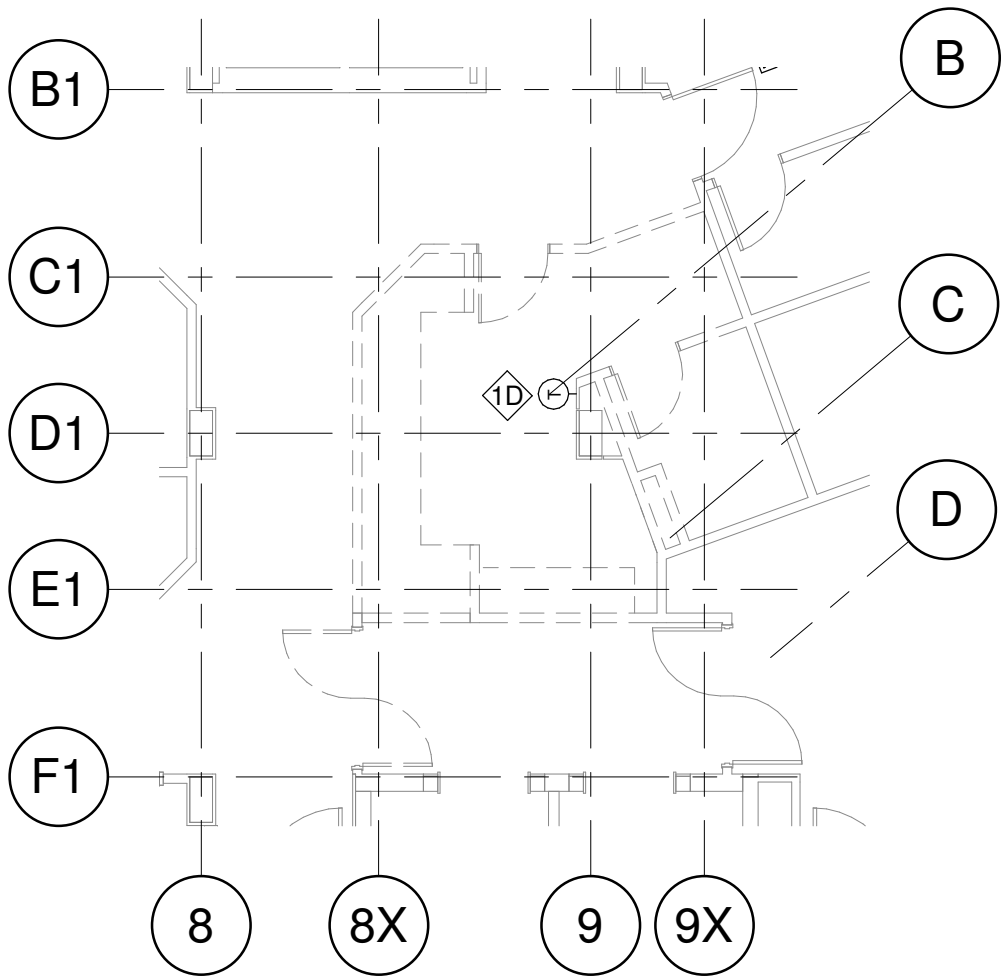
**M-401**



1 PROPOSED PLAN - NEW RES. LOUNGE (RM.256 & 257)  
1 : 100

GENERAL NOTES:

1. ALL EXISTING SERVICES SHOWN ON THIS DRAWING ARE FROM EXISTING ARCHIVE DRAWINGS WHICH MAY VARY FROM ACTUAL. CONTRACTOR SHALL REVIEW THE ACTUAL LOCATION OF PIPING TO CONNECT PIPES TO EXISTING. CONTRACTOR SHALL NOTE THE ACTUAL PIPING LAYOUT TO PRODUCE AS-BUILT DWGS.
2. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID ANY DAMAGE TO EXISTING SERVICES. ANY DAMAGE TO EXISTING SERVICES SHALL BE FIXED BY CONTRACTOR AT NO COST TO THE PROJECT.



2 DEMO PLAN- EXISTING NURSE STATION (RM.256 & 257)  
1 : 100

DEMOLITION NOTES:

- 1D MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND TEMPORARILY REMOVE EXISTING THERMOSTAT TO FACILITATE THE RENOVATION WORKS.

CONSTRUCTION NOTES:

- 1 RE-INSTALL THE EXISTING WALL MOUNTED THERMOSTAT IN THE CENTER OF COLUMN AT GRIDS D1 AND 9. COORDINATE THE TRANSFER OF THE THERMOSTAT POWER CONNECTION WITH THE ELECTRICAL CONTRACTOR.

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**LL 2S NURSE STATION  
RENOVATION**

3197 LAKESHORE BLVD.W., ETOBICOKE

**LEVEL 2 DEMOLITION AND  
NEW WORK  
HVAC PIPING**

scale:	1 : 100
drawn	BK
reviewed	VS
job	23511.06
plot	11/01/23

drawing

**M-501**