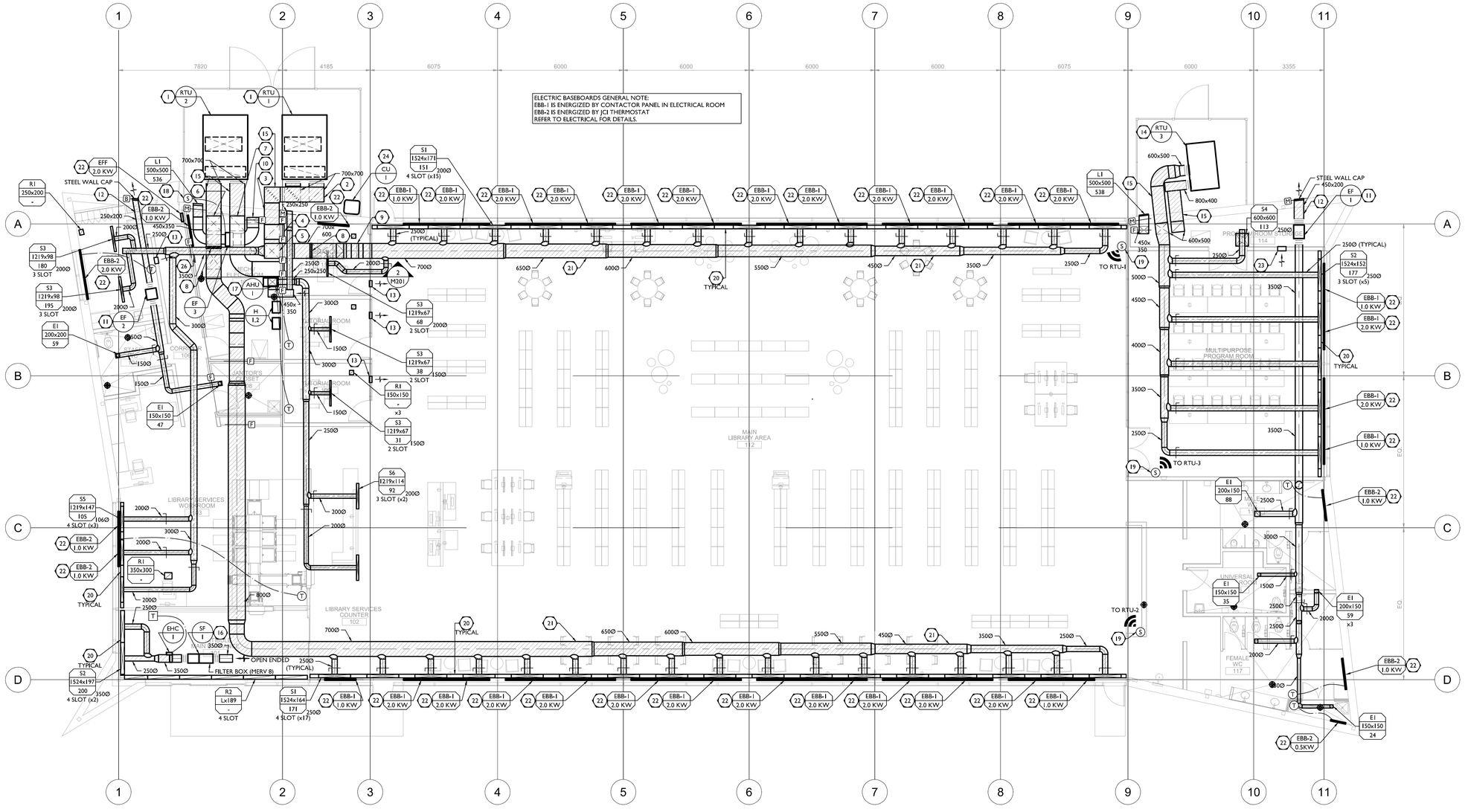
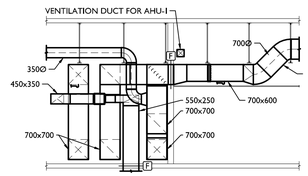


MAIN FLOOR PLAN - H.V.A.C.

1 / M201 SCALE: 1:100

DRAWINGS NOTES - H.V.A.C.

1. INSTALL NEW PACKAGED ROOF TOP UNIT ON CUSTOM 914mm HIGH CURB. CURB TO HAVE END SUPPLY AND RETURN CONNECTIONS. CONNECT DUCT WORK TO CURB WITH FLEXIBLE CONNECTIONS. MAINTAIN ALL MANUFACTURER RECOMMENDED CLEARANCES.
2. RETURN AIR PLENUM TO RISE WITH TURNING VANES (X2) APPROXIMATELY 250mm ABOVE ADJACENT SUPPLY AIR PLENUM TO ACCOMODATE EXTERNAL INSULATION OF EACH PLENUM. SUPPORT DUCT WORK FROM GRADE.
3. RETURN AIR PLENUM TO ENTER MECHANICAL ROOM ABOVE SUPPLY AIR PLENUM.
4. RETURN AIR PLENUM TO RISE TO HIGH LEVEL WITH TURNING VANES AT BASE AND TOP OF RISER. OFFSET OPEN ENDED RETURN AIR PLENUM THROUGH FIRE RATED WALL INTO CEILING SPACE OF ADJACENT OFFICE TIGHT TO UNDERSIDE OF JOISTS, C/W FIRE DAMPER AT MECHANICAL ROOM WALL PENETRATION.
5. SUPPLY AIR PLENUM TO RISE TO HIGH LEVEL WITH TURNING VANES AT BASE AND TOP OF RISER. OFFSET SUPPLY AIR MAIN THROUGH FIRE RATED WALL INTO CEILING SPACE OF ADJACENT OFFICE TIGHT TO UNDERSIDE OF JOISTS, C/W FIRE DAMPER AT MECHANICAL ROOM WALL PENETRATION.
6. SUPPLY AIR PLENUM TO RISE TO UNDERSIDE OF JOISTS WITH TURNING VANE AT BASE AND RADIUS ELBOW AT TOP OF RISER. RISE TO UNDERSIDE OF DECK USING TWO 45° ELBOWS AND OFFSET TO SOUTH BETWEEN JOISTS, C/W FIRE DAMPER AT MECHANICAL ROOM AND JANITOR ROOM WALL PENETRATIONS.
7. RETURN AIR PLENUM TO RISE TO UNDERSIDE OF JOISTS WITH TURNING VANE AT BASE AND RADIUS ELBOW AT TOP OF RISER. OFFSET OPEN-ENDED RETURN AIR PLENUM HORIZONTALLY BELOW JOISTS AS SHOWN, C/W FIRE DAMPER AT MECHANICAL ROOM WALL PENETRATION.
8. INSTALL HUMIDIFIER DISPERSION TUBE WITHIN DUCT WORK. ALLOW FOR MINIMUM 650mm OF STRAIGHT DUCT UPSTREAM OF DISPERSION TUBE. PROVIDE 1000mm LONG DOUBLE-BROKEN SECTION OF DUCTWORK DOWNSTREAM OF DISPERSION TUBE WITH DRAIN. REFER TO PLUMBING DRAWING FOR DRAINAGE.
9. SUPPLY AIR MAIN TO RISE FROM UNDERSIDE OF O.W.S.J. TO WITHIN BOTTOM CHORD SPACE OF OWSJ USING TWO (2) SHORT RADIUS 45° ELBOWS. CONFIRM EXACT JOIST LOCATIONS ON SITE.
10. EXHAUST DUCT UP FROM CRAWLSPACE TO RISE TO UNDERSIDE OF S/A AND R/A MAINS SERVING RTU-2. SUSPEND EXHAUST FAN EF-3 FROM STRUCTURE WITH THREADED RODS C/W SPRING VIBRATION ISOLATIONS AND FLEX CONNECTIONS AT FAN.
11. SUSPEND EXHAUST FAN FROM STRUCTURE (APPROXIMATELY 300mm ABOVE CEILING) C/W SPRING VIBRATION ISOLATORS AND FLEX CONNECTIONS AT FAN, .
12. RISE OR DROP EXHAUST DUCT AS REQUIRED TO ALIGN WITH STEEL WALL CAP. REFER TO ARCHITECTURAL ELEVATION DRAWINGS FOR LOCATION.
13. PROVIDE 300x300 TRANSFER AIR OPENING THROUGH FULL HEIGHT WALL ABOVE ADJACENT CEILING.
14. INSTALL NEW PACKAGED ROOF TOP UNIT ON STEEL FRAME, 1m ABOVE GRADE. PROVIDE FLEXIBLE DUCT CONNECTION AT RTU.
15. RECOVER ALL EXTERIOR INSULATION WITH 0.61mm THICK ALUMINUM RECOVERY JACKET OR HEAVY DUTY VENTURE CLAD INSULATION JACKETING (0.61mm THICK). SUPPORT DUCTWORK FROM GRADE. MAINTAIN MANUFACTURER-RECOMMENDED CLEARANCES.
16. SUSPEND SUPPLY FAN FROM STRUCTURE C/W SPRING VIBRATION ISOLATORS AND FLEX CONNECTION TO FAN, APPROXIMATELY 300mm ABOVE CEILING. COORDINATE INSTALLATION LOCATION W/ ARCHITECTURAL ACCESS PANELS.
17. AIR HANDLING UNIT MOUNTED ON FLOOR. S/A DUCT TO RISE ALONG WALL ABOVE ADJACENT CEILING AND OFFSET THROUGH WALL C/W RADIUS ELBOW AT TOP OF RISER AND FIRE DAMPER AT WALL PENTRATION. OPEN-ENDED RETURN AIR PLENUM TO DROP ALONG WALL TO LOW LEVEL FOR CONNECTION TO AHU AT LOW LEVEL C/W FILTER RACK AT BASE OF RISER AND FIRE DAMPER AT WALL PENETRATION. MAINTAIN MANUFACTURER-RECOMMENDED CLEARANCES.
18. MOUNT OUTDOOR TEMPERATURE SENSOR SERVING CRAWLSPACE VENTILLATION SYSTEM OUTSIDE BUILDING. COORDINATE EXACT LOCATION ON SITE.
19. WIRELESS ZONE SPACE TEMPERATURE SENSOR MOUNTED 1.5m A.F.F. REFER TO CONTROLS SECTION OF SPECIFICATION. COORDINATE EXACT LOCATION ON SITE.
20. CONTINUOUS-LOOKING SDS GRILLE OVER ENTIRE LENGTH, MADE UP OF AS FEW SECTIONS AS POSSIBLE. INSTALL BLANK-OFF PLATES (INSTALLED ON TOP OF DIFFUSER) BETWEEN ENGINEERED PLENUMS. CONFIRM ALL MEASUREMENTS ON SITE AND COORDINATE WITH MANUFACTURER TO CONFIRM EXACT QUANTITIES AND LENGTHS.
21. RUN THERMALLY INSULATED SUPPLY AIR DUCT WITHIN O.W.S.J. JOIST SPACING APPROXIMATELY 1.5m, COORDINATE EXACT LOCATIONS OF OPENINGS ON SITE.
22. ELECTRIC HEAT SUPPLIED AND INSTALLED BY ELECTRICAL SUBCONTRACTOR.
23. PROVIDE 400x500 TRANSFER AIR OPENING THROUGH FULL HEIGHT WALL ABOVE ADJACENT CEILING.
24. MOUNT CONDENSING UNIT ON BUILDING APPROXIMATELY 1m ABOVE GRADE. COORDINATE EXACT LOCATION ON SITE.
25. CONTINUOUS-LOOKING SDR GRILLE OVER ENTIRE LENGTH, MADE UP OF AS FEW SECTIONS AS POSSIBLE. CONFIRM ALL MEASUREMENTS ON SITE AND COORDINATE WITH MANUFACTURER TO CONFIRM EXACT QUANTITIES AND LENGTHS.
26. APPROXIMATE LOCATION OF CONTROL PANEL. MECHANICAL SUBCONTRACTOR TO CONFIRM EXACT LOCATION ON SITE.
27. GRILLES CLIP ONTO SUSPENDED ENGINEERED PLENUMS BY CONCEALED MOUNTING BRACKETS. ENGINEERED PLENUMS ARE SUSPNDED BY WIRES THROUGH MOUNTING HOLES.



MECHANCIAL ROOM SECTION

2 / M201 SCALE: 1:100

GENERAL NOTES - H.V.A.C.

1. CONTRACTOR SHALL BE FAMILIAR WITH, REFER TO, AND COMPLY WITH ALL LOCAL CODES. ALL MECHANICAL WORK SHALL COMPLY IN EVERY RESPECT WITH THE LATEST EDITIONS OF THE NATIONAL AND PROVINCIAL BUILDING CODES, NFPA, ASHRAE, SMACNA, AND ANY ADDITIONAL REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOT BE SCALED. THEY ESTABLISH DESIGN INTENT AND ARE NOT INTENDED TO BE DETAILED INSTALLATION DOCUMENTS. MECHANICAL SUBCONTRACTOR SHALL ALLOW IN THEIR CONTRACT PRICE ALL COMPONENTS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL MECHANICAL INSTALLATION.
3. ANY OMISSIONS OR DISCREPANCIES IN THE DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACT ADMINISTRATOR IN ACCORDANCE WITH B3 ENQUIRIES.
4. INSPECT JOB SITE PRIOR TO COMMENCEMENT OF WORK AND MAKE APPROPRIATE PROVISIONS FOR ALL SITE CONDITIONS. EXACT PLACEMENT OF MECHANICAL EQUIPMENT AND SIZING/ROUTING OF MECHANICAL SYSTEMS SHALL BE SITE CONFIRMED AND COORDINATED WITH AVAILABLE ARCHITECTURAL, ELECTRICAL, AND STRUCTURAL DRAWINGS AND TRADES. REROUTE/RESIZE DUCT WORK AND RELOCATE EQUIPMENT AND COMPONENTS AS REQUIRED.
5. CAREFULLY EXAMINE ALL DRAWINGS OF OTHER TRADES. COORDINATE THE ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH THE ELECTRICAL SUBCONTRACTOR. TYPE B OR C DYNAMIC FIRE DAMPERS SHALL BE INSTALLED AT ALL PENETRATIONS OF WALLS OR FLOORS DENOTED TO BE FIRE SEPARATIONS ON THE ARCHITECTURAL DRAWINGS.
6. INSTALL EQUIPMENT AND RELATED ACCESSORIES OR COMPONENTS AS PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
7. A MEANS OF BALANCING ALL SUPPLY AND EXHAUST TERMINALS USING DUCT MOUNTED BALANCING DAMPERS SHALL BE PROVIDED. A TERMINAL BALANCING DAMPER SHALL BE PERMITTED WHEN A DUCT MOUNTED DAMPER WOULD BE INACCESSIBLE OR UNDESIRABLE.
8. THE USE OF FLEXIBLE DUCT WORK SHALL BE LIMITED TO ONLY CONNECTIONS BETWEEN DUCT BRANCHES AND DIFFUSERS AND SHALL HAVE A MAXIMUM LENGTH OF 5 FT WHEN FULLY STRETCHED AND SUPPORTED BY A DURABLE ELBOW SUPPORT WHEN USED AS AN ELBOW.
9. ACCESS DOORS SHALL BE PROVIDED AS REQUIRED TO SERVICE DAMPERS AND MECHANICAL EQUIPMENT.
10. THE FINAL LOCATIONS OF GRILLES, REGISTERS AND DIFFUSERS SHALL BE COORDINATED ON SITE WITH THE FINAL CEILING LAYOUT AND THE EQUIPMENT OF OTHER TRADES. SUPPLY DUCTS TO FORM CUSHION HEADS AFTER DIFFUSER TAKE-OFF.
11. A RETURN OR RELIEF GRILLE SHALL BE INSTALLED IN EACH SPACE THAT IS PROVIDED WITH SUPPLY AIR.
12. PLENUMS CONTAINING ELECTRICAL OR CONTROL WIRING HAVING A FLAME SPREAD RATING ABOVE 25 OR A SMOKE DEVELOPED RATING ABOVE 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84 (UL 723) SHALL NOT BE USED TO CONVEY AIR.
13. ALL DUCT WORK AND EQUIPMENT SHALL BE INSULATED TO THE REQUIREMENTS OF THE LATEST EDITION OF ASHRAE 90.1 AND TO THE REQUIREMENTS OF THE MANITOBA ENERGY CODE FOR BUILDINGS. ALL DUCT WORK WITHIN 10' (3M) OF THERMAL ENVELOPE PENETRATION AND ALL DUCT WORK CONTAINING OUTSIDE AIR SHALL BE THERMALLY INSULATED.
14. ALL SIZES OF DUCTWORK INDICATED ON THE DRAWINGS DENOTE THE INTERNAL OPEN DUCT DIMENSIONS. ALLOWANCES SHALL BE MADE FOR ANY INTERNAL INSULATION INDICATED ON THE DRAWINGS OR REQUIRED IN THE SPECIFICATIONS.
15. ALL CUTTING AND/OR PATCHING OF ROOFS, FLOORS, AND EXTERIOR WALLS SHALL BE BY THE CONTRACTOR UNLESS SPECIFICALLY INDICATED OTHERWISE.

H.V.A.C. LEGEND

	DIFFUSER
	GRILLE/REGISTER/DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	SUPPLY DUCT RISE / DROP
	RETURN DUCT RISE / DROP
	EXHAUST DUCT RISE / DROP
	ROUND DUCT RISE / DROP
	THERMAL INSULATION
	ACOUSTIC INSULATION
	FLEX CONNECTOR
	NEW DUCT
	H.V.A.C. CONTROL
T	THERMOSTAT C/W GUARD
S	TEMPERATURE SENSOR C/W GUARD
	BALANCING DAMPER
B M F S	DAMPER BACK DRAFT / MOTORIZED / FIRE / SMOKE
TYPE SIZE FLOW	DIFFUSER TAG
TAG CAP	ELECTRIC HEAT TAG
3	DRAWING NOTE
EQP #	EQUIPMENT TAG

No.	DATE	REVISION / ISSUANCE
-	-	-
-	-	-
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-	-	-
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1	2017.02.21	ISSUED FOR CONSTRUCTION

Seal

PROVINCE OF MANITOBA — P. S. GLOCKNER — Member — 2017.02.21 — 22951 — REGISTERED PROFESSIONAL ENGINEER

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
CGM Engineering Ltd.
No. 6241

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MECHANICAL
MAIN FLOOR H.V.A.C.

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Sheet **M-201**

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