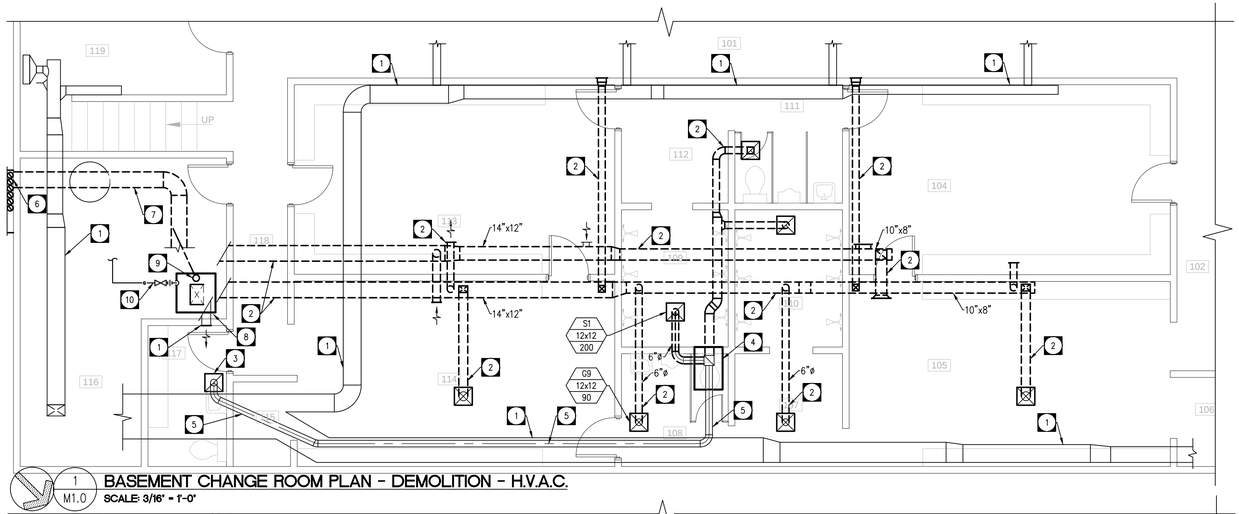
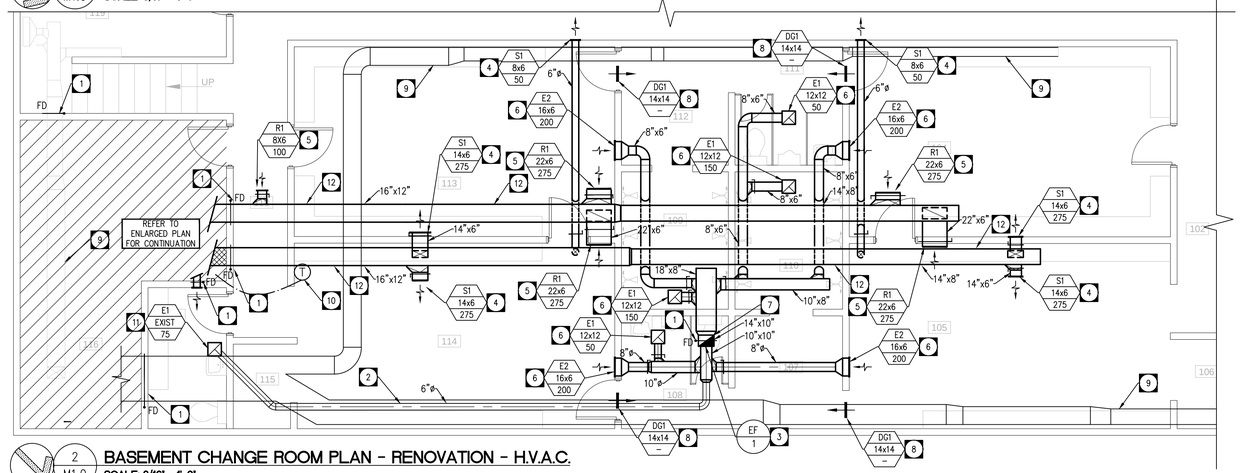
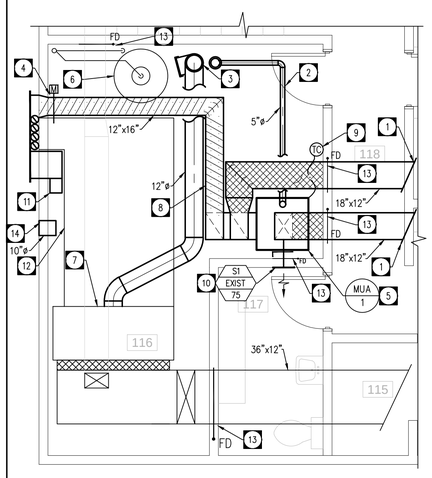


1 M1.0 **BASEMENT CHANGE ROOM PLAN - DEMOLITION - H.V.A.C.**
SCALE: 3/16" = 1'-0"



2 M1.0 **BASEMENT CHANGE ROOM PLAN - RENOVATION - H.V.A.C.**
SCALE: 3/16" = 1'-0"



3 M1.0 **MECHANICAL ROOM LAYOUT - RENOVATION - H.V.A.C.**
SCALE: 1/4" = 1'-0"

DRAWING NOTES - DEMOLITION

1. EXISTING DUCT MAIN SERVING OTHER AREAS TO REMAIN. SHOWN FOR REFERENCE ONLY.
2. DEMOLISH EXISTING DUCTWORK AND DIFFUSERS/GRILLES SERVING SHOWER/LOCKER AREAS.
3. EXISTING EXHAUST GRILLE TO REMAIN.
4. DEMO EXISTING EXHAUST PLENUM AND DUCTWORK; EXISTING EXHAUST DUCT SHAFT TO BE REUSED.
5. EXISTING DUCTWORK IS TO REMAIN. SHOWN FOR REFERENCE ONLY.
6. EXISTING MOTORIZED DAMPER FOR FRESH AIR DUCT TO BE REMOVED.
7. EXISTING FRESH AIR DUCT TO BE REMOVED.
8. REMOVE EXISTING FURNACE IN MECHANICAL ROOM. DEMOLISH EXISTING FRESH AIR DUCTWORK ASSOCIATED WITH FURNACE.
9. EXISTING FURNACE VENT CONNECTOR TO BE REMOVED AND CAPPED.
10. EXISTING GAS SUPPLY PIPING TO EXISTING FURNACE TO BE CUT BACK AND CAPPED.

DRAWING NOTES - RENOVATION

1. SUPPLY AND INSTALL FIRE DAMPER AT FIRE SEPARATION. PROVIDE ACCESS DOOR AS REQUIRED TO FACILITATE MAINTENANCE AND INSPECTION.
2. APPROXIMATE LOCATION OF EXISTING EXHAUST DUCTWORK TO REMAIN.
3. SUPPLY AND INSTALL NEW INLINE EXHAUST FAN ON SECOND FLOOR IN EXISTING LOCATION WITHIN CANTEEN STORAGE ROOM. COORDINATE EXACT LOCATION ON SITE. MOUNT VIA WALL BRACKET. RECONNECT DISCHARGE TO EXISTING 14"x10" DUCT.
4. SUPPLY AND INSTALL SUPPLY GRILLE APPROXIMATELY WHERE SHOWN. REFER TO GRILLES, DIFFUSERS AND LOUVRES SCHEDULE.
5. SUPPLY AND INSTALL RETURN GRILLE APPROXIMATELY WHERE SHOWN. REFER TO GRILLES, DIFFUSERS AND LOUVRES SCHEDULE. BALANCE TO AIR VOLUME INDICATED.
6. SUPPLY AND INSTALL EXHAUST GRILLE APPROXIMATELY WHERE SHOWN. REFER TO GRILLES, DIFFUSERS AND LOUVRES SCHEDULE.
7. APPROXIMATE LOCATION OF EXISTING EXHAUST CHASE TO BE REUSED. EXISTING 14"x10" DUCTWORK TO BE REUSED.
8. SUPPLY AND INSTALL STAINLESS STEEL DOOR TRANSFER GRILLE IN EXSTING DOOR. VERIFY FINAL LOCATION ON SITE. COORDINATE INSTALLATION WITH ARCHITECTURAL/GENERAL CONTRACTOR.
9. APPROXIMATE LOCATION OF EXISTING DUCT MAIN SERVING OTHER AREAS. SHOWN FOR REFERENCE ONLY. DUCT TO REMAIN.
10. SUPPLY AND INSTALL THERMOSTAT FOR CONTROL OF REMOTE ROOM OVERRIDE FOR NEW MAKE UP AIR UNIT. PROVIDE WITH LOCKING COVER IN APPROXIMATE LOCATION SHOWN. COORDINATE FINAL LOCATION WITH ARCHITECTURAL/GENERAL CONTRACTOR.
11. EXISTING GRILLE TO REMAIN. REBALANCE TO VOLUME INDICATED ON DRAWINGS.
12. PROVIDE NEW SUPPLY AND RETURN DUCT MAINS. REFER TO MECHANICAL ROOM RENOVATION PLAN FOR CONTINUATION.

DRAWING NOTES - MECH ROOM

1. PROVIDE NEW SUPPLY AND RETURN DUCT MAINS. REFER TO CHANGE ROOM RENOVATION PLAN FOR DUCT CONTINUATION.
2. SUPPLY AND INSTALL NEW 5"ø B-VENT IN APPROXIMATE LOCATION SHOWN. CHASE LOCATION/CONSTRUCTION BY ARCHITECTURAL/GENERAL CONTRACTOR. VERIFY FINAL ROUTING ON SITE.
3. APPROXIMATE LOCATION OF EXISTING 12"ø B-VENT CHIMNEY TO REMAIN. CAPPED OFF SECTION FROM PHASE A TO REMAIN.
4. UTILIZE EXISTING FRESH AIR DUCT OPENING. EXISTING DUCT OPENING IS 12"X10" C/W MOTORIZED DAMPER. MODIFY EXISTING OPENING TO BE 12"X16" AND REMOVE EXISTING DAMPER. SUPPLY AND INSTALL NEW 12"X16" MOTORIZED DAMPER - INTERLOCK WITH MUA-1 MIXING BOX OPERATION.
5. NEW INDIRECT GAS FIRED MAKE UP AIR UNIT C/W MIXING BOX AND THERMOSTAT. MOUNT MAKE UP AIR ON EXISTING HOUSEKEEPING PAD. REFER TO SPECIFICATIONS/SCHEDULE.
6. APPROXIMATE LOCATION OF EXISTING HIGH EFFICIENCY CONDENSING HOT WATER TANK C/W COMBUSTION AIR/VENTILATION PIPING (REPLACED DURING PHASE A). SHOWN FOR REFERENCE ONLY.
7. EXISTING TRANE 400 MBH DUCT FURNACE C/W DRAFTOR FAN TO REMAIN. SHOWN FOR REFERENCE ONLY.
8. NEW 12"x16" FRESH AIR DUCT C/W THERMAL DUCT INSULATION OVER ENTIRE RUN. DUCT CONNECTION FROM WALL TERMINATION TO NEW MUA MIXING BOX.
9. SUPPLY AND INSTALL TIMECLOCK FOR EXHAUST SYSTEM CONTROL OF OCCUPIED/UNOCCUPIED SCHEDULE. REFER TO CONTROL SPECIFICATIONS. CONFIRM LOCATION WITH OWNER'S REPRESENTATIVE.
10. EXISTING SUPPLY GRILLE TO REMAIN. REBALANCE TO AIR VOLUME INDICATED.
11. APPROXIMATE LOCATION OF EXISTING 10"x16" COMBUSTION AIR ELBOW. EXTEND DUCTWORK TO LOW LEVEL PER CSA-B149.10 REQUIREMENTS.
12. EXISTING FRESH AIR INTAKE TO TRANE DUCT FURNACE TO REMAIN. SHOWN FOR REFERENCE ONLY.
13. SUPPLY AND INSTALL FIRE DAMPER IN NEW DUCTWORK. PROVIDE WITH ACCESS DOOR AS REQUIRED TO FACILITATE MAINTENANCE/SERVICE.
14. SUPPLY AND INSTALL NEW 10"ø VENTILATION DUCT AT HIGH LEVEL AS PER CSA-B149.10 REQUIREMENTS. PROVIDE WITH THERMAL INSULATION AND WALL CAP/BIRDSCREEN. CONFIRM FINAL LOCATION ON SITE, COORDINATE INSTALLATION WITH G.C..

LEGEND - HVAC

	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	DUCT RISE UP / DUCT DROP DOWN
T	THERMOSTAT
TC	TIMECLOCK
	DUCTWORK DEMO
	BALANCING DAMPER
FD	FIRE DAMPER
BDD	BACK DRAFT DAMPER
M	MOTORIZED DAMPER
	FLEXIBLE DUCT CONNECTION
	THERMAL INSULATION
	ACOUSTIC INSULATION
TYPE / SIZE / CFM / NECK Ø	GRILLE / DIFFUSER TAG
EQ NO	EQUIPMENT TAG
TYPE / SIZE / OUTPUT	ALTERNATE EQUIPMENT TAG
1	DRAWING NOTE TAG

VENTILATION SUMMARY

(BASED ON ASHRAE STANDARD 62-2010 TABLES 6.1 & 6.4)

A.) OUTSIDE AIR

	TOTAL OUTSIDE AIR REQUIRED [CFM]	TOTAL AIR EXHAUSTED [CFM]	TOTAL OUTSIDE AIR SUPPLIED [CFM]
MUA-1	1120	1200	1200

B.) EXHAUST AIR

	AREA [FT²]	HEIGHT [FT]	FIX [#]	EXHAUST RATE		EXHAUST AIR [CFM]
WASHROOM	–	–	4	50	[CFM/FIX]	200
LOCKERS	1360	–	–	0.50	[CFM/FT2]	680
SHOWERS	180	8	–	10	[ACH]	240
					TOTAL:	1120

REFER TO CONTROLS SECTION OF SPECIFICATIONS.

GRILLES, DIFFUSERS, AND LOUVRES SCHEDULE (BASED ON EH PRICE)

TAG	SIZE	MODEL	NOTES
S1	AS SHOWN	520D/F/L/A/B12	FACE SIZES ON DWGS
R1	AS SHOWN	530/F/A/B12	FACE SIZES ON DWGS
E1	AS SHOWN	80/F/A/B12	FACE SIZES ON DWGS
E2	AS SHOWN	530/F/A/B12	FACE SIZES ON DWGS
DG1	AS SHOWN	STG1/BF/B15	FACE SIZES ON DWGS

MECHANICAL EQUIPMENT SCHEDULE

TAG	MANUFACTURER	MODEL	HEATING	COOLING	AIRFLOW	EFFICIENCY	MOTOR	ELECTRICAL	NOTES
MUA-1	ENGINEERED AIR	XES160	160 MBH IN 128 MBH OUT	–	1200 CFM @ 0.25" ESP	–	½ HP	208V/1PH/60HZ	C/W 2" MERV8 FILTERS, 1" INSULATION THROUGHOUT, BLOWER W/ PILLOW BLOCK BEARINGS AND INTERNAL ISOLATION, ACCESS DOOR, ROOM CONTROL AND REMOTE PANEL W/ AUXILIARY CONTACTS AND LIMITS, POWER VENT OPTION, MIXING BOX, X-TRAC CONTROLLER, AND VIBRATION ISOLATION FOR MOUNTS. REFER TO CONTROL SPECIFICATION.
EF-1	COOK	120SQN-B	–	–	1200 CFM @ 0.50" W.G.	–	⅓ HP	120V/1PH/60HZ	C/W TIMECLOCK CONTROL, BACK-DRAFT DAMPER, VIBRATION ISOLATORS FOR SUSPENSION RODS AND GOOSENECK TERMINATION W/BIRD SCREEN. REFER TO CONTROLS SPECIFICATION.

GENERAL NOTES - HVAC

1. MECHANICAL SUBCONTRACTOR SHALL VERIFY EXACT LOCATIONS, SIZES, ETC. PRIOR TO COMMENCEMENT OF WORK. VERIFY ALL CONNECTION POINTS ON SITE.
2. MECHANICAL SUBCONTRACTOR SHALL ALLOW IN HIS TENDER QUOTATION FOR ALL REQUIRED MODIFICATIONS TO EXISTING HVAC SYSTEMS AND EQUIPMENT (I.E.) RE-ROUTING AND RE-BALANCING OF EXISTING DUCTWORK AS DEEMED NECESSARY DUE TO RENOVATION WORK.
3. REFER TO ARCHITECTURAL, ELECTRICAL & STRUCTURAL DRAWINGS FOR COORDINATION PURPOSES.
4. MECHANICAL SUBCONTRACTOR SHALL CAREFULLY REMOVE & RELOCATE EXISTING EQUIPMENT AS PER OWNERS REQUIREMENTS.
5. ALL CUTTING & PATCHING OF FLOOR SLABS, WALLS ETC. TO BE PERFORMED BY CONTRACTOR.
6. COORDINATE THE EXACT LOCATION OF THE GRILLES AND DIFFUSERS ON SITE WITH THE ELECTRICAL SUBCONTRACTOR, CONTRACTOR, ARCHITECTURAL CEILING PLAN, LIGHTING LAYOUT, ETC. TO ENSURE THAT THERE ARE NOT ANY CONFLICTS DURING INSTALLATION.
7. PROVIDE BALANCE DAMPER FOR EACH SUPPLY/EXHAUST AIR GRILLE OR DIFFUSER TO ALLOW FOR THE PROPER BALANCING OF THE SYSTEM. PROVIDE OPPOSED BLADE DAMPERS WITH THE DIFFUSER AND ADJUSTABLE FROM THE DIFFUSER FACE WHEN A DUCT MOUNTED BALANCE DAMPER WOULD NOT BE ACCESSIBLE.
8. ALL DUCT DIMENSIONS DENOTE INTERNAL "OPEN" AREA OF THE DUCT.
9. ALL EXHAUST DUCTWORK PENETRATING THE BUILDING THERMAL ENVELOPE SHALL BE INSULATED A MINIMUM 10'-0" BACK FROM THE BUILDING PENETRATION.
10. REFER TO ARCHITECTURAL DRAWINGS AND PROVIDE FIRE DAMPERS IN ALL WALLS DENOTED AS FIRE SEPARATIONS. PROVIDE ACCESS DOORS AT ALL FIRE DAMPERS TO ALLOW FOR INSPECTION/TESTING.
11. COORDINATE THE EXACT LOCATIONS OF EQUIPMENT, DUCT OPENINGS, AND DUCT LOCATIONS WITH THE EXISTING STRUCTURE AND THE STRUCTURAL SUBCONSULTANT.
12. ALL WORK SHALL COMPLY IN EVERY RESPECT WITH ALL NATIONAL, PROVINCIAL AND LOCAL CODES AND BY-LAWS, WHICH SHALL BE CONSIDERED PART OF THE SPECIFICATION. IN THE CASE OF CONFLICTING REQUIREMENTS, BE GOVERNED BY THE MOST STRINGENT REGULATIONS.
13. THE MECHANICAL SUBCONTRACTOR SHALL INSTALL HEATING, VENTILATION, AND AIR CONDITIONING SYSTEMS IN COMPLETE ACCORDANCE WITH THE RECOMMENDATIONS OF THE NATIONAL/PROVINCIAL BUILDING CODE, ASHRAE, SMACNA LATEST EDITION DUCT STANDARDS, AND MANITOBA OFFICE OF THE FIRE COMMISSIONER REQUIREMENTS.
14. ALL INSULATING MATERIALS, METHODS, SIZES AND TYPES OF INSULATION FOR ALL DUCT WORK SHALL BE INSTALLED TO THE REQUIREMENTS OF THE ASHRAE STANDARDS 90.1-2010 "ENERGY STANDARD FOR BUILDING EXCEPT LOW-RISE RESIDENTIAL BUILDING", STANDARD 90.2 "ENERGY EFFICIENT DESIGN OF LOW-RISE RESIDENTIAL BUILDINGS", THERMAL INSULATION ASSOCIATION OF CANADA (TIAC) STANDARDS AND THE MANITOBA ENERGY CODE FOR BUILDINGS REQUIREMENTS.
15. VENTILATION SUBCONTRACTOR SHALL ENSURE THAT ALL DUCTWORK THAT MAY CONVEY OUTSIDE AIR BE LOCATED A MINIMUM OF 6" (150 MM) AWAY FROM ANY SPRINKLER PIPING. DUCTWORK IN SUCH LOCATIONS SHALL BE PROTECTED WITH A MINIMUM OF 2" (50MM) RIGID DUCT INSULATION WITH VAPOR RETARDING FOIL FINISH. ALTER LOCATION OF DUCTWORK TO SUIT.
16. FOR STRUCTURES REQUIRING NEW OR CONTAINING EXISTING FIRE PROTECTION/SPRINKLER SYSTEMS, THE CITY AND/OR CONTRACTOR SHALL RETAIN THE SERVICES OF A SPRINKLER SUBCONTRACTOR TO PROVIDE COMPLETE SPRINKLER SYSTEM DESIGN (HYDRAULIC LOAD CALCULATIONS, LAYOUTS, HEAD TYPES AND LOCATIONS, ETC). DESIGN TO INCLUDE PROVISIONS FOR FREEZE PROTECTION IN ALL MECHANICAL AND SERVICE ROOMS UTILIZING DRY AND/OR GLYCOL SYSTEMS.
17. ALL CONTROL / ELECTRICAL WIRING TO MEET OR EXCEED FLAME SPREAD RATING OF 25 AND DEVELOPED SMOKE RATING OF 50 AND BE SUITABLE FOR INSTALLATION IN AIR PLENUMS.
18. DUCTWORK TO BE INSTALLED AS HIGH AS POSSIBLE TO UNDERSIDE OF BASEMENT CEILING STRUCTURE.

APEGM
Certificate of Authorization
Nova 3 Engineering Ltd.
No.962 Date: 2017.07.17

ISSUED FOR CONSTRUCTION

No.	DATE	REVISION / ISSUANCE
0	17.07.17	ISSUED FOR CONSTRUCTION

Seal

PROVINCE OF MANITOBA J. H. GUENTHER 2017.07.17 REGISTERED ENGINEER

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Project

ST. VITAL ARENA
CHANGE ROOM UPGRADES
580 ST. ANNE'S ROAD, WINNIPEG, MB

Sheet Title

CHANGE ROOMS HVAC
DEMOLITION AND RENOVATION PLANS

Project No. 1723

Date JULY 2017

Sheet **M1.0**