

DUCTWORK

1. ALL DUCT DIMENSIONS DENOTE INTERNAL "FREE" AREA OF THE DUCT.
2. SHEET METAL DUCTWORK, HANGERS, FITTINGS, AND COMPONENTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH "SMACNA" HVAC DUCT CONSTRUCTION STANDARDS LATEST EDITION AND "ASHRAE" EQUIPMENT GUIDE.
3. ALL DUCTWORK SHALL BE INSTALLED ACCORDING TO SMACNA STATIC PRESSURE CLASS + 500 PA STANDARDS.
4. ALL 90 DEGREE SQUARE TURN ELBOWS (WHICH HAVE NO CHANGE IN DIMENSIONS THROUGH TURN) SHALL HAVE DOUBLE THICKNESS TURNING VANES.
5. ROUND DUCT ELBOWS SHALL HAVE A RADIUS DIMENSION 1.5 TIMES THE WIDTH OF THE DUCT (IN THE PLANE OF THE TURN) TO THE CENTERLINE OF THE DUCT.
6. ALL EXHAUST AIR DUCTWORK SHALL BE INSULATED WITH 2" THICK FOIL FACED FIBERGLASS DUCT INSULATION FROM THE EXTERIOR WALL OR ROOF SURFACE TO A DISTANCE OF 6'-0" (MIN.) INTO THE BUILDING SPACE, EXCEPT AS INDICATED.
7. MECHANICAL CONTRACTOR SHALL INSTALL 4" (MIN.) FLEXIBLE CONNECTORS ON INLET AND DISCHARGE DUCTWORK OF EQUIPMENT.
8. ALL SUPPLY AIR DUCTWORK SHALL BE INTERIOR INSULATED WITH 1" ACOUSTIC INSULATION FOR THE FIRST 10' FROM THE FAN DISCHARGE, UNLESS INDICATED OTHERWISE. PROVIDE INTERIOR ACOUSTIC INSULATION FOR RETURN AIR DUCT FROM RETURN AIR GRILLE TO MIXING BOX.
9. PROVIDE BALANCING DAMPERS AS SHOWN AND AS REQUIRED TO ALLOW PROPER BALANCING OF THE SYSTEM. BALANCING DAMPERS SHALL BE PROVIDED FOR EACH SUPPLY AIR OUTLET AND RETURN/EXHAUST AIR INLET. DAMPERS MOUNTED AT GRILLES SHALL BE MULTI-BLADE TYPE. BUTTERFLY DAMPERS IN DUCTWORK SHALL BE CONSTRUCTED OF SHEET METAL TWO GAUGES HEAVIER THAHN THE DUCTWORK. DUCT DAMPERS SHALL HAVE LOCKING QUADRANTS AND POSITION INDICATORS.
10. JOINT SEALS
SEAL JOINTS BETWEEN DUCTS, FITTINGS, ETC., WITH DURO-DYNE S-2 DUCT SEALER AND DURO-DYNE FIBERGLASS DUCT TAPE. APPLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN COMPLIANCE WITH SMACNA SEAL CLASS C.
11. FITTINGS
MANUFACTURED BY UNITED, 90 DEGREE ELBOWS TO BE 5 PIECE MITRED, 8" DIA. OR LESS, 90 DEGREE ELBOWS CAN BE 1 PIECE MOLDED TYPE. USE CONICAL CONNECTIONS THROUGHOUT INSTALLATION.
12. FIRE DAMPERS
ULC LISTED BLADE POCKETS OUT OF AIR STREAM, "FIRE BARRIER" OR EQUAL. CEILING FIRE DAMPERS SHALL BE 'CONTROLLED AIR' MODEL CFSR-1 c/w CK2000 THERMAL BLANKET, ULC LISTED. ALL FIRE DAMPERS SHALL BE DYNAMIC. CALL ENGINEER FOR INSPECTION BEFORE CLOSING IN FIRE DAMPERS. SEND SHOP DRAWINGS TO CONTRACT ADMINISTRATOR FOR REVIEW.
13. ACCESS DOORS
PROVIDE ACCESS DOORS AS REQUIRED TO ACCESS AND MAINTAIN ALL VENTILATION EQUIPMENT, INCLUDING COILS, MOTORIZED DAMPERS, AND FIRE DAMPERS.
14. PIPING
REFRIGERANT PIPING TO BE INSULATED WITH 1/4" FLEXIBLE PIPE INSULATION AND WEATHER COATING WHERE REQUIRED.
15. ALL PENETRATIONS IN FIRE RATED SURFACES ARE TO BE SEALED WITH ELECTROVERT CLK CAULKING MATERIAL OR APPROVED EQUAL.
16. SUPPLY 4 SPARE FUSES AND LAMPS FOR ALL CONTROL PANELS.
17. SUPPLY LAMACOID NAME TAGS FOR ALL AIR HANDLING EQUIPMENT, THERMOSTATS, MOTORIZED DAMPERS AND PUMPS.
18. SUBMIT FOR CONTRACT ADMINISTRATORS APPROVAL SHOP DRAWINGS OF ALL EQUIPMENT.

19. SUPPLY O&M MANUALS FOR EQUIPMENT SUPPLIED AND INSTALLED.

20. COMPLETE TRAINING TO BE SUPPLIED ON ALL THE EQUIPMENT SUPPLIED AND INSTALLED.

SCOPE OF WORK:

WORK TO BE PERFORMED IN TWO PHASES. AIR BALANCE REQUIRED AFTER PHASE 1 AND AFTER PHASE 2.

PHASE 1

EXHAUST FAN, EF-2

GREENHECK DIRECT DRIVE UPBLAST CENTRIFUGAL ROOF EXHAUST FAN. CUE-090-VG. 420CFM @0.25"W.C. 115V/60HZ/1 PHASE. WITH SPEED CONTROLLER AND BACKDRAFT DAMPER.

VENTILATION REQUIREMENTS (ASHRAE 62.1-2010)

ROOMS	OCC	EXH
#		
WASHROOM	6	420

CONTROLS

LOCATE FAN SWITCH NEXT TO ROOM LIGHT SWITCH

AIR BALANCING

IN ADDITION TO CONFIRMING AIRFLOW FROM EXHAUST FANS, AIR BALANCER SHALL MEASURE BUILDING PRESSURE AND CONFIRM THAT IT IS NOT BELOW -0.02 INCHES WATER COLUMN WHEN BOTH WASHROOM FANS AND THE KITCHEN HOOD FAN ARE OPERATING.

IF THE BUILDING PRESSURE IS MORE NEGATIVE THAN -0.02"W.C, THEN AN EXTRA FRESH AIR OPENING MAY BE REQUIRED IN AN APPROPRIATE LOCATION. CONTACT CONTRACT ADMINISTRATOR AN ENGINEER FOR INSTRUCTIONS.

PHASE 2

EXHAUST FAN, EF-1

GREENHECK DIRECT DRIVE UPBLAST CENTRIFUGAL ROOF EXHAUST FAN. CUE-080-VG. 280CFM @0.25"W.C. 115V/60HZ/1 PHASE. WITH SPEED CONTROLLER AND BACKDRAFT DAMPER.

VENTILATION REQUIREMENTS (ASHRAE 62.1-2010)

ROOMS	OCC	EXH
#	CFM	
WASHROOM	4	280

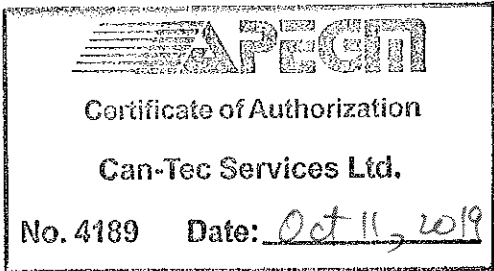
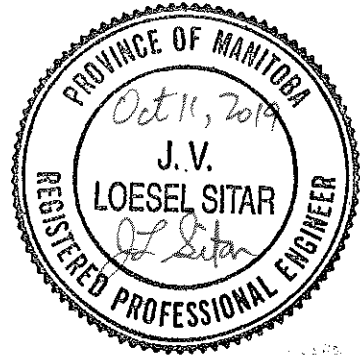
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PROJECT TITLE:
KILDONAN PARK GOLF COURSE

SHEET TITLE:
SPECIFICATION - HVAC

PROJECT NUMBER:
19-043-14-30

02	WORK DIVIDED INTO PHASE 1 & 2	19 10 10	JLS
01	REVISED FLOOR PLAN & DUCTING	19 09 20	JLS
00	ISSUED FOR CONSTRUCTION	19 09 09	JLS
REV. #	REVISION	DATE (YY MM DD)	REV. BY

TENDER 1123-2019

REV. #	REVISION	DATE (YY MM DD)	REV. BY
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SCALE:
AS NOTED

DATE (YY MM DD):
19 07 19

DRAWING NUMBER:
M2.2
REVISION NUMBER:
00