

Whitewater Brewery

Whitewater Brewing Company

Hwy 17, Cobden, ON

Mechanical Drawing Package

Drawing List

- M1 OF 4 - COVER PAGE
- M2 OF 4 - PLUMBING PLAN
- M3 OF 4 - HYDRONIC HEATING PLAN
- M4 OF 4 - HVAC PLAN

- FIRE SUPPRESSION SYSTEM AS PER FIRE PROTECTION CONTRACTOR/ENGINEER

MECHANICAL SPECIFICATION

15A MECHANICAL GENERAL CONDITIONS

THE GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS AS INDICATED IN THE ARCHITECTURAL SPECIFICATION SHALL APPLY TO DIVISION 15.

15A.1 SCOPE

PROVIDE COMPLETE HEATING/COOLING/VENTILATING SYSTEM, PLUMBING AND GAS SPECIFICATION. IN CASES OF CONFLICT, AMBIGUITY OR DOUBT APPLY TO THE ARCHITECT FOR A RULING IN WRITING.

FURNISH INSPECTION CERTIFICATES PRIOR TO FINAL PAYMENT TO SHOW THAT ALL INTENDED WORK CONFORMS WITH DRAWINGS AND SPECIFICATIONS AND WITH BY-LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION.

15A.2 DRAWINGS AND SPECIFICATIONS

PROJECT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO THIS GENERAL SPECIFICATION. IN CASES OF CONFLICT, AMBIGUITY OR DOUBT APPLY TO THE ENGINEER FOR A RULING IN WRITING.

DRAWINGS IN PART ARE DIAGRAMMATIC AND INTENDED TO CONVEY THE SCOPE OF WORK AND GENERAL LAYOUT OF MECHANICAL SYSTEMS. DO NOT SCALE DRAWINGS.

ALL JOBS MUST BE COMPLETE, PERFORMED AND FINISHED IN A WORKMANLIKE MANNER. WORK AND MATERIALS OF AN INCORPORATED NATURE, NECESSARY BY IMPLICATION, TO PRODUCE THE FINISHED JOB AS SPECIFIED, SHALL BE SUPPLIED EVEN WHEN NOT LISTED OR DESCRIBED IN DETAIL.

NO DEVIATIONS FROM THE SPECIFICATIONS OR DRAWINGS WILL BE ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

15A.3 CERTIFIED ROUGHING-DIMENSION

FOR MECHANICAL SERVICES SHALL BE OBTAINED FROM THE EQUIPMENT SUPPLIERS IN ADVANCE OF THE BUILDING CONSTRUCTION AND SHALL FORM PART OF THE CONTRACT DRAWINGS.

15A.4 SPARE SHOP DRAWINGS

WITHIN 10 DAYS OF AWARD OF CONTRACT SUBMIT FIVE (5) COPIES OF SHOP DRAWINGS FOR ALL MECHANICAL SYSTEM COMPONENTS. C/W DESCRIPTIVE DATA, REVIEW OF DRAWINGS INDICATES ONLY THAT THE QUALITY AND GENERAL DESIGN OF THE EQUIPMENT IS ACCEPTABLE.

VERIFICATION OF DIMENSIONS ON THE LOCATION OF CONNECTIONS TO THE EQUIPMENT SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR. DO NOT SUBSTITUTE. PRESSURES, MAXIMUM TEMPERATURE AND PRESSURES, ENTERING AND LEAVING CONDITIONS OF AIR AND FLOW, OPERATING WEIGHT, ELECTRICAL CHARACTERISTICS AND BREAK HORSERPOWER REQUIREMENTS. CAUSE OF FABRICATED MATERIAL AND TYPE OF FINISH.

SHOP DRAWINGS SHALL SHOW: OVERALL DIMENSIONS, ROUGHING-IN DIMENSIONS AND CLEARANCE DIMENSIONS. CERTIFIED PERFORMANCE DATA INDICATING OPERATING FLOWS, PRESSURES, MAXIMUM TEMPERATURE AND PRESSURES, ENTERING AND LEAVING CONDITIONS OF AIR AND FLOW, OPERATING WEIGHT, ELECTRICAL CHARACTERISTICS AND BREAK HORSERPOWER REQUIREMENTS. CAUSE OF FABRICATED MATERIAL AND TYPE OF FINISH.

AS BUILT DRAWINGS

SHOW ALL REVISIONS AND SUBMITTALS OF THE ENTIRE MECHANICAL CONTRACT ON ONE SET OF PRINTS AND RETURN TO ENGINEER PRIOR TO SUBSTANTIAL COMPLETION OF JOB. AS BUILT ARE TO BE KEPT ON SITE AND UPDATED DAILY. NO CHANGES TO THE ORIGINAL LAYOUT OR SPECIFICATION WILL BE PERMITTED WITHOUT WRITTEN AUTHORIZATION FROM THE CONSULTANT. AS BUILT DRAWINGS TO BE TRANSMITTED ON REPRODUCIBLE MEDIA BY THE CONTRACTOR BEFORE FINAL INSPECTION FOR REVIEW BY THE CONSULTANT. GOOD DRAFTING PROCEDURES TO BE MAINTAINED.

EQUIPMENT AND MAINTENANCE MANUALS

SUPPLY THREE (3) COPIES OF MAINTENANCE AND OPERATION MANUALS FOR EACH PIECE OF MAJOR APPARATUS AND EQUIPMENT. INCLUDE NAMES OF SPARE PARTS (PARTS AND ADDRESSES). COPIES SHALL BE COMPILED IN SETS IN HARD COVER THREE-RING-BINDERS WITH AN INDEX PAGE AND INDEXING TABS.

HOSTING AND RIGGING

IN ACCORDANCE WITH THE CONSTRUCTION SCHEDULE, PROVIDE FOR TRANSPORTATION OF EQUIPMENT AND MATERIALS TO THE SITE AND FOR RIGGING, HAULING, STORAGE AND SETTING IN PLACE OF EQUIPMENT.

CONCEALMENT

CONCEAL ALL PIPING AND DUCTWORK IN PARTITIONS, WALLS AND BETWEEN FLOOR AND CEILINGS. PROVIDE ACCESS DOORS (FOR INSTALLATION BY OTHERS) AT ALL VALVES, CLEANOUTS, AND FIRE DAMPERS, ETC. IN FINISHED AREAS ONLY.

CUTTING AND PATCHING

CUTTING, DRILLING, AND PATCHING REQUIRED BY THE PASSAGE OF PIPES, AND DUCTS THROUGH WALLS, FLOORS AND ROOF STRUCTURES DOES NOT FORM PART OF THIS CONTRACT, AND IS TO BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

PIPE AND DUCT SLEEVES

SUPPLY AND LOCATE ALL PIPE AND DUCT SLEEVES, GENERALLY FABRICATED FROM 0.80MM MINIMUM GALVANIZED SHEET STEEL. WHERE PIPES OR DUCTS ARE INSULATED, SLEEVES SHALL BE OF SUFFICIENT DIAMETER TO ACCOMMODATE INSULATION, AND CAULK JOINTS.

ESOUTHOUGH PLATES

PROVIDE WHERE PIPES RUN THROUGH WALLS, FLOORS AND CEILINGS IN ALL FINISHED AREAS.

MATERIALS SPECIFIED

MATERIALS AND EQUIPMENT DESCRIBED ON THE DRAWINGS ARE USED TO ESTABLISH A STANDARD OF MATERIALS AND WORKMANSHIP TO WHICH CONTRACTOR AND SUBCONTRACTOR SHALL ADHERE. WHERE MANUFACTURER'S TRADE NAMES ARE USED, THE TENDER PRICE SHALL BE BASED ON THESE PRODUCTS. CONTRACTOR MAY USE OTHER MANUFACTURERS EQUIPMENT AS ALTERNATES ONLY AT THE TIME OF TENDER. SUBMISSION OF ALTERNATES WILL NOT BE ALLOWED AFTER TENDER CLOSING. ALL ALTERNATES MUST BE APPROVED IN WRITING BY THE CONSULTANT PRIOR TO TENDER CLOSING AND APPROVAL, ISSUED BY ADDENDUM. NO ADDENDUM WILL BE ISSUED FOR THIS PURPOSE WITHIN THREE WORKING DAYS OF TENDER CLOSING.

WORKMANSHIP

MAINTAIN ON SITE, A COMPETENT FOREMAN TO SUPERVISE THE WORK FOR THE DURATION OF THE CONTRACT. FOLLOW RECOMMENDED STANDARDS OF INSTALLATION AS PUBLISHED BY APPLICABLE INDUSTRY OR TRADE ASSOCIATIONS. ONLY FIRST CLASS WORKMANSHIP IS ACCEPTABLE.

PROTECTION AND CLEANING

PROTECT ALL MATERIALS AND EQUIPMENT SUPPLIED DURING CONSTRUCTION UNTIL THE BUILDING IS FORMALLY ACCEPTED BY THE OWNER.

STORE MATERIALS AND EQUIPMENT DELIVERED TO THE SITE IN A SAFE, DRY LOCATION. AFTER INSTALLATION, PROTECT ALL EQUIPMENT AND PLUMBING FIXTURES USING SHIPPING CRATES, CARTONS, OR TARPULINS.

COMPLETION OF THE CONTRACT, REMOVE ALL DEBRIS, AND REPLACE ANY DAMAGED COMPONENTS. CLEAN EQUIPMENT AND LUBRICATE FAN AND MOTOR BEARINGS.

ACCESS DOORS

SUPPLY ACCESS DOORS FOR INSTALLATION BY OTHERS, FOR ALL CONCEALED VALVES, FIRE DAMPERS, COCKS, CLEANOUTS, AIR VENTS, DAMPERS, AND OTHER EQUIPMENT WHICH REQUIRES MAINTENANCE OR ADJUST. WHERE REQUIRED, ACCESS DOORS SHALL HAVE THE SAME FIRE RATING AS SURROUNDING STRUCTURE.

SCAFFOLDING

SUPPLY, ERECT AND REMOVAL SCAFFOLDING NECESSARY FOR THE PERFORMANCE OF THE WORK.

15A.18 GUARANTEE

THE CONTRACTOR SHALL FURNISH THE OWNER WITH A WRITTEN GUARANTEE FOR THE SATISFACTION OF ALL WORK AND EQUIPMENT INSTALLED UNDER THIS CONTRACT AND REPLACE AT NO COST TO THE OWNER) IMMEDIATELY, ANY PART WHICH MAY FAIL OR PROVE DEFECTIVE WITHIN A PERIOD OF 12 MONTHS AFTER FINAL ACCEPTANCE OF THE COMPLETE CONTRACT.

THIS GENERAL GUARANTEE SHALL NOT ACT AS A WAIVER FOR ANY SPECIFIED GUARANTEE THIS IS GREATER THAN 12 MONTHS.

15A.19 RELATED WORK

ELECTRICAL: POWER SUPPLIES TO MECHANICAL EQUIPMENT, AND LINE VOLTAGE CONTROL WIRING.

15A.20 SPARE

OBTAIN NECESSARY PERMITS AND COVER COSTS OF SUCH PERMITS.

15A.22 CODES & STANDARDS

CONFORM TO ALL APPLICABLE AND STANDARDS INCLUDING BUT NOT LIMITED TO:

- THE BUILDING CODE, CITY AND REGIONAL, BY-LAWS AND STANDARDS.
- THE PLUMBING CODE, GAS UTILIZATION CODE, NFPA 12, C.S.A., C.S.A., SMACNA, ASHRAE STANDARDS, TSSA.

CO-ORDINATE WORK WITH THAT OF OTHER TRADES. CONFIRM EXACT LOCATIONS OF ALL EQUIPMENT ON SITE PRIOR TO INSTALLATION. DRAWINGS INDICATE APPROXIMATE LOCATIONS ONLY. CLEAN AND TOUCH UP ALL SURFACES OF SHOP PAINTED EQUIPMENT SCOTCHED OR MARKED DURING SHIPMENT OR INSTALLATION.

DO NOT OPERATE EXHAUST OF AIR CONDITIONING FAN DURING OPERATIONS SUCH AS SANDING. REPLACE ALL FILTERS AT COMPLETION OF PROJECT AND LEAVE ONE SET OF SPARE FILTERS FOR EACH PIECE OF EQUIPMENT SITE FOR USE BY CLIENT.

IDENTIFICATION

DO IDENTIFICATION WORK IN ACCORDANCE WITH CGSB 24-GP-3A EXCEPT WHERE SPECIFIED OTHERWISE.

INDICATE SIZE, EQUIPMENT REGISTRATION PLATES, AS REQUIRED BY RESPECTIVE AGENCY. INDICATE SIZE, EQUIPMENT MODEL, MANUFACTURER'S NAME, SERIAL NUMBER, VOLTAGE, CYCLE, PHASE AND POWER OF MOTORS.

PIPING TO CGSB 24-GP-3A IDENTIFY MEDIUM BY LETTERED LEGEND, CLASSIFICATION BY PRIMARY AND SECONDARY COLOURS, DIRECTION OF FLOW BY ARROWS.

DEFINITIONS

FOR THE PURPOSES OF THESE SPECIFICATIONS THE FOLLOWING DEFINITIONS SHALL APPLY:

1. "CONCEALED" - HIDDEN FROM NORMAL SIGHT IN FURRED SPACES, SHAFTS, CEILING SPACES, WALLS AND PARTITIONS.

2. "EXPOSED" - ALL MECHANICAL WORK NORMALLY VISIBLE, INCLUDING WORK IN EQUIPMENT ROOMS, TUNNELS, ETC.

3. "PROVIDE" - (AND TENSES OF "PROVIDE") SUPPLY, INSTALL AND CONNECT COMPLETE.

4. "INSTALL" - (AND TENSES OF "INSTALL") INSTALL AND CONNECT COMPLETE.

5. "SUPPLY" - SUPPLY ONLY.

6. "APPROVED" - ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AND/OR ACCEPTABLE TO THE ENGINEER.

7. "AUTHORITY HAVING JURISDICTION" - THE ORGANIZATION, OFFICE OR INDIVIDUAL RESPONSIBLE FOR APPROVING EQUIPMENT, AN INSTALLATION, OR A PROCEDURE.

8. "IDENTIFIED" - CAPABLE OF BEING RECOGNIZED BY A PERSON OF NORMAL VISION WITHOUT CAUSING UNCERTAINTY ABOUT THE LOCATION OR OPERATING PROCESS OF THE IDENTIFIED ITEM.

FABRICATION DRAWINGS

THE FABRICATION OF THE DUCTWORK WILL BE DETERMINED FROM FIELD MEASUREMENTS BY THE CONTRACTOR. THIS CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE DUCTWORK WITH ALL OTHER TRADES. THIS CONTRACTOR SHALL PROVIDE FABRICATION AND INTERFERENCE DRAWINGS TO DETERMINE ROUTING OF THE DUCTWORK AND SHALL PROVIDE ALL OFFSETS, ELBOWS AND TRANSITIONS AS REQUIRED TO MAKE A FULLY OPERATIONAL SYSTEM.

SEISMIC RESTRAINT SPECIMEN

THIS CONTRACTOR TO RETAIN SEISMIC RESTRAINT SPECIALIST TO PERFORM CALCULATIONS AND SPECIFY SEISMIC RESTRAINT EQUIPMENT. ALL PIPING AND EQUIPMENT TO BE SEISMICALLY RESTRAINED AS REQUIRED. SHOP DRAWINGS TO BE STAMPED BY A PROFESSIONAL ENGINEER IN THE PROVINCE OF ONTARIO EXPERIENCED IN SEISMIC DESIGN. THE CONTRACTOR SHALL PROVIDE DOCUMENTARY EVIDENCE THAT THE DESIGN CONFORMS TO SEISMIC REQUIREMENTS OF RELEVANT CODES, STRUCTURAL ENGINEER AND AUTHORITY HAVING JURISDICTION. THE CONTRACTOR'S ENGINEER SHALL HAVE A CURRENT BUILDING CODE IDENTIFICATION NUMBER AND SAID NUMBER SHALL BE SHOWN ON ALL DRAWINGS AND CALCULATIONS. THE CONTRACTOR SHALL PROVIDE A STATEMENT THAT THE MECHANICAL SYSTEM HAS BEEN INSTALLED, INSPECTED AND ALL TESTS PERFORMED AS PER RELEVANT CODES AND STANDARDS. THIS STATEMENT SHALL BE SEALED AND SIGNED BY THE CONTRACTOR'S ENGINEER.

15B PLUMBING

UNLESS OTHERWISE NOTED, ALL DUCTWORK SHALL BE FABRICATED FROM GALVANIZED IRON (0.22 KG. ZINC COATING MIN.).

USE 0.50 MM THICK UP TO 300 MM LONGEST SIDE. USE 0.80 MM THICK UP TO 750 MM LONGEST SIDE. USE 0.80 MM THICK UP TO 1370 MM LONGEST SIDE.

ALL RECTANGULAR DUCTWORK SHALL BE MANUFACTURED FROM "CROSS-BROKEN" SHEETS. PROVIDE BALANCING DAMPERS AT EACH BRANCH TAKE-OFF.

DETAILS, CONSTRUCTION AND MATERIALS NOT SPECIFIED HEREIN SHALL BE AS PER THE LATEST EDITION ASHRAE OR SMACNA STANDARDS.

FABRICATE DUCTWORK IN A WORKMANLIKE MANNER, WITH AIR-TIGHT SEAMS. CURVED SECTIONS OF DUCTWORK SHALL HAVE AN INSIDE RADIUS OF NOT LESS THAN THE WIDTH OF THE DUCT.

BRACE AND SUPPORT DUCT IN SUCH A MANNER THAT IT WILL NOT SAG, IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.

JOINTS UP TO 450 MM TO BE STANDARD DRIVE SLIPS. JOINTS 450 MM AND OVER TO BE PITTSBURGH SEAM LONGITUDINAL DRIVE SLIP.

DUCT LEAKAGE SHALL NOT BE MORE THAN 5% OF TOTAL SYSTEM DESIGN WHEN SYSTEM IS OPERATING AT DESIGN CAPACITY. FLOWS TO EACH ROOM OR AREA SHALL BE BALANCED TO GIVE PROPORTIONALLY THE SAME FLOW AS INDICATED ON THE DRAWINGS.

SUPPORT DUCT ON HANGERS. SIZE, SPACING AND SUPPORT ROD DIAMETER IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.

ALL DUCT SIZES LISTED ARE CLEAR OUTSIDE DIMENSIONS.

TURNING VANES

ALL SQUARE ELBOWS SHALL HAVE DOUBLE WALL TURNING VANES. SQUARE ELBOWS SHALL NOT BE USED IN LINE OF LONG RADIIUS ELBOWS.

ACCESS DOORS

SEE ALSO 15A.16. PROVIDE DUCT ACCESS DOORS AS INDICATED OR REQUIRED FOR ACCESS TO FIRE OR OTHER DAMPERS AND FOR SERVICE OR INSPECTION, AND FOR CLEANOUTS WHERE REQUIRED. USE SPECIALLY DESIGNED, HINGED TYPE ACCESS DOORS. 300 MM X 300 MM UNLESS OTHERWISE STATED. COMPLETE WITH TWO SASH LOCKS. ACCESS DOOR SHALL NOT COMPROMISE THE FIRE RATING OF THE PARTITION INTO WHICH IT IS INSTALLED.

DAMPERS

BALANCING: PROVIDE MANUAL DAMPERS AT EACH BRANCH TAKE-OFF IN ALL LOW PRESSURE DUCTWORK. FABRICATE FROM 1.2 MM THICK GALVANIZED STEEL OR HEAVIER.

DAMPERS FOR DUCTS UP TO 300 MM SHALL BE ONE BLADE. DAMPERS FOR DUCTS OF DEPTH GREATER THAN 300 MM DEEP SHALL BE OPPOSED BLADE TYPE.

BACKDRAFT: AUTOMATIC MULTI-BLADE LOW LEAKAGE LOUVER TYPE CONSTRUCTED OF LIGHT GAUGE ALUMINUM. BLADES TO BE JOINED WITH A TE BAR, HAVE RUSTPROOF SHIMTS AND BRONZE BUSHINGS. BLADES TO HAVE FELT EDGES.

FIRE: PROVIDE IN-DUCT FUSIBLE LINK FOR OUT-OF-THE-AIRSTREAM TYPE FIRE DAMPERS. EQUIPMENT MUST BEAR UL LABEL AND MUST NOT CONTAIN ASBESTOS.

THERMOSTATS (UNDER 50V)

THERMOSTATS SHALL BE INSTALLED AND WIRE BY DIVISION 15. ALL THERMOSTATS LOCATED IN PUBLIC AREAS SHALL BE PROTECTED BY CLEAR, KEY OPERATED PLASTIC COVERS. THERMOSTATS IN STORAGE, SHIPPING/RECEIVING OR SIMILAR AREAS SHALL BE PROTECTED BY A LOCKABLE METAL COVER.

PITOT TUBE TEST HOLES

PROVIDE TEST OPENINGS IN ALL DUCTWORK AT ALL FAN DISCHARGES, AT ALL MAJOR BRANCH DUCTS AND RUN-OUTS FOR WHERE REQUIRED TO BALANCE THE SYSTEM.

TESTING PIPING

FILL ALL NEW WATER SYSTEMS WITH WATER AND HYDRAULICALLY TEST WITH A PRESSURE OF ONE AND ONE-HALF TIMES THE WORKING PRESSURE AND MAINTAIN SUCH PRESSURE FOR 24 HOURS. SHOULD LEAKS APPEAR DURING THE TESTS, REPAIR THE DEFECT, AND RETEST.

INSULATION

INSULATE ALL WATER PIPING COLDER THAN 5°C OR HOTTER THAN 37°C.

GENERAL

APPLY PIPE INSULATION WHEN REQUIRED HYDROSTATIC TESTS HAVE BEEN COMPLETED.

INSULATION SHALL BE APPLIED TO CLEAN DRY PIPE AND DUCTS. ALL DUCT JOINTS BUTTED FINISH AND LAPPED WITH 100 mm WIDE STRIP OF APPROVED ADHESIVE VAPOUR PROOF TAPE.

COVER ALL PIPE FITTINGS USING FABRICATED SECTION FROM THE PIPE COVERING.

APPLY AN APPROVED VAPOUR BARRIER OVER ALL PIPES HAVING COLD SURFACES AND ENSURE A SUITABLE SEAL.

DOMESTIC WATER PIPING

PROVIDE FIBREGLASS FLEXIBLE INSULATION FACED WITH "ROGROK" VAPOUR BARRIER. PROVIDE INSULATION WITH 100mm STRIPS OF INSULATION BONDING ADHESIVE AT 200mm O.C. TAPE ALL JOINTS AS PER SUPPLIER'S INSTRUCTIONS. INSULATE ALL HORIZONTAL AND VERTICAL RAINWATER LEADERS AND UNDERSIDE OF ROOF DRAIN BOARDS AND PANS.

FLUID TEMPERATURE 1 NPS AND UNDER 1 1/4 - 2 2 1/2 - 4 (THICKNESS IN mm)

150.3 & 4 TEMPERATURE/THICKNESS, DOMESTIC WATER

150.5 DUCTWORK (THERMAL)

ALL DUCTWORK CARRYING CONDITIONED AIR INSULATE 1/2" DUCTWORK WITHIN CEILING SPACE WITH 25mm FIBREGLASS INSULATION AND ANTI-SWEAT VAPOUR BARRIER. INSULATE ALL EXTERIOR DUCTWORK WITH 50mm FIBREGLASS INSULATION AND "TYPIC" VAPOUR BARRIER. 2" x 2" LAYERS OF WATERPROOFING. INSULATE ALL EXHAUST DUCTWORK PASSING THROUGH AN EXTERIOR WALL 100mm BACK FROM WALL WITH 50mm FIBREGLASS INSULATION AND ANTI-SWEAT VAPOUR BARRIER. INSULATE ALL FRESH AIR INTAKE DUCTS WITH 2" THICK INSULATION C/W VAPOUR BARRIER.

150.6 DUCTWORK (ACOUSTIC)

WHERE INDICATED ON DRAWINGS

PROVIDE 25mm THICK ROOF FIBREGLASS WITH A DENSITY OF 32 KG/CLM. COAT THE EXPOSED SURFACE WITH A BLACK NEOPRENE COMPOUND. LINER TO BE GLUE AND SCREW FASTENED WITH METAL EDGING. INCREASE DUCT SIZE SHOWN ON DRAWINGS TO ACCOMMODATE INSULATION THICKNESS WHERE ACOUSTIC INSULATION IS REQUIRED.

NO PLASTIC PIPING SHALL BE INSTALLED IN A RETURN AIR PLENUM UNLESS IT MEETS THE REQUIREMENTS OF THE SECTION 3.1.5.15 OF THE O.B.C. (FLAME SPREAD LESS THAN 25, SMOKE DEVELOPMENTS LESS THAN 50). ALL PENETRATIONS OF FIRE RATED SEPARATIONS MUST BE SEALED BY APPROVED FIRE STOPPING MATERIALS.

ALL PIPING SYSTEMS SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDED INSTALLATION PROCEDURES.

15C HVAC

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150.6 DUCTWORK (ACOUSTIC)

WHERE INDICATED ON DRAWINGS

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SYMBOL LEGEND

- SUPPLY AIR DUCT
- RETURN AIR DUCT
- EXHAUST AIR DUCT
- SA DIFFUSER
- DIFFUSER TAG
- EXHAUST GRILLE
- BALANCING DAMPER
- FIRE DAMPER
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- SANITARY
- NATURAL GAS
- SWITCH
- THERMOSTAT
- FIRE EXTINGUISHER (SUPPLIED & INSTALLED BY OTHERS)
- NATURAL GAS METER

NOTE: ALL DIMENSIONS IN INCHES

EQUIPMENT SCHEDULE

Tag	Description	Manufacturer	Model #	Flow Rate, Capacity	Electrical
B-1, B-2, B-3	BOILER, Gas Fired	IBC BOILER	SL 20-115G2	115 MBH	120 VAC, 54 WATTS
UH-1	Unit Heater, Sealed Combustion, Gas Fired	Remor	UOAS-125NTE	125 MBH	120 VAC, 4.8 A
HWRV-1	Heat Recovery Ventilator	Andes	HWRV-4	360 CFM	120 VAC/1500, 5.5A
LV-1, MD-1	Make Up/Exhaust with Motorized Dampers	Balmain	ASRUPS (Actuator)	1200 & 1800 CFM	120 VAC/1150, 7W
F-1 (6 Required)	Circulation Fans - 60" Diameter	Canam	CP60 HPWP	45 000 CFM AT FLOOR	120 VAC/3/60, 0.8 A
F-2	Exhaust Fans - Production Area	Penn Barry	E102H	1320 CFM	120 VAC/3/60, 15 A, 0.25HP
F-3	Exhaust Fans - Washroom/Waste Room	Penn Barry	E104	650 CFM	120 VAC/3/60, 15 A, 0.5HP
F-4	Ventilation Fan - Pub/Restaurant/Tasting	Penn Barry	SVX115Q2C	1800 CFM	120 VAC/3/60, 15 A, 0.75HP

PLUMBING FIXTURES

TAG	QUANT.	GENERAL				TRIM		PLUMBING CONNECTIONS				NOTES