GENERAL SPECIFICATIONS

- 1. THE BIDDERS SHALL EXAMINE THE SITE AND THE EXISTING CONDITIONS AFFECTING THE PROJECT. EXAMINE THE COMPLETE SET OF CONTRACT DOCUMENTS TO ENSURE THAT THE WORK CAN BE CARRIED OUT WITHOUT SIGNIFICANT CHANGES TO THE INTENT OF THE DOCUMENTS. NO FUTURE ALLOWANCE WILL BE MADE FOR CHANGES UNLESS THE CONTRACT ADMINISTRATOR HAS BEEN NOTIFIED IN WRITING OF ANY DISCREPANCIES OR INTERFERENCES, PRIOR TO THE CLOSE OF BIDS. NO ALLOWANCE WILL BE MADE FOR ITEMS THAT SHOULD HAVE BEEN NOTED DURING A BID SITE INSPECTION.
- 2. THE LOCATION, ROUTING AND ELEVATIONS OF ALL NEW AND EXISTING SERVICES AND UTILITIES AS SHOWN ON THE DRAWINGS ARE TO BE CONSIDERED AS APPROXIMATIONS ONLY. VERIFY THE EXACT LOCATIONS, ROUTINGS AND ELEVATIONS OF ALL SERVICES PRIOR TO COMMENCING WORK, AND ASSUME RESPONSIBILITY FOR LAYING OUT ALL WORK. THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR ANY DAMAGE TO EXISTING SERVICES AND UTILITIES.
- APPLICABLE BUILDING CODES, LOCAL REGULATIONS, AND BY-LAWS. BEFORE PROCEEDING WITH THE WORK, OBTAIN APPROVED DRAWINGS AND SPECIFICATIONS FROM THE AUTHORITIES HAVING JURISDICTION.

3. ALL ASPECTS OF THE INSTALLATION MUST COMPLY WITH THE MOST STRINGENT OF THE

- 4. PROVIDE ALL NECESSARY NOTICES, OBTAIN ALL REQUIRED PERMITS, PAY ALL FEES REQUIRED BY LAW, AND ARRANGE FOR ALL INSPECTIONS RELATED TO THE PERFORMANCE OF THE SPECIFIED WORK.
- 5. PROVIDE ALL MATERIALS, LABOUR AND EQUIPMENT REQUIRED TO COMPLETE THE WORK AS SHOWN AND AS SPECIFIED, SO AS TO LEAVE THE OWNER WITH A COMPLETE AND FUNCTIONING SYSTEM.
- 5.1. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND C.S.A. APPROVED, UNLESS SPECIFICALLY NOTED OTHERWISE.
- 5.2. ALL SIMILAR EQUIPMENT AND OR MATERIALS SHALL BE BY THE SAME MANUFACTURER.
- 6. REQUEST FOR APPROVAL OF SUBSTITUTE MATERIAL AND/OR EQUIPMENT TO BE MADE IN ACCORDANCE WITH B7, SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR WITH A STAMPED SELF-ADDRESSED ENVELOPE OR RETURN FAX NUMBER AT LEAST FIVE WORKING DAYS PRIOR TO TENDER CLOSING. REQUESTS SHALL INCLUDE ALL PERFORMANCE SPECIFICATIONS, PHYSICAL DATA AND OTHER PERTINENT INFORMATION REQUIRED FOR THE CONTRACT ADMINISTRATOR TO MAKE A COMPLETE COMPARISON.
- 7. PROVIDE A MINIMUM OF SEVEN COPIES OF SHOP DRAWINGS FOR REVIEW BY THE CONTRACT ADMINISTRATOR. THE SHOP DRAWINGS MUST BE ASSEMBLED INTO COMPLETE BROCHURES, WITH NO LOOSE SHEETS. UNASSEMBLED SUBMISSIONS WILL BE RETURNED AS INCOMPLETE.
- 7.1. THE REVIEW OF THE SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT. THE REVIEW SHALL NOT MEAN APPROVAL OF THE DETAILED DESIGN INHERENT IN THE EQUIPMENT, THE RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR. THE REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REMAIN RESPONSIBLE FOR CONFIRMING AND CORRELATING THE DIMENSIONS ON THE JOBSITE, AND FOR INFORMATION THAT PERTAINS TO THE FABRICATION PROCESS, CONSTRUCTION TECHNIQUES, AND INSTALLATION DETAILS, AND FOR COORDINATING ALL WORK OF THE RELATED SUB-TRADES.
- 8. ALL CUTTING AND PATCHING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXISTING EXPOSED SURFACES SHALL BE RETURNED TO AN "AS-FOUND" CONDITION ACCEPTABLE TO THE CITY.
- 9. EACH (SUB)CONTRACTOR SHALL COORDINATE THE WORK WITH OTHER (SUB)CONTRACTORS IN ORDER TO AVOID CONFLICTS.
- 10. NEATLY STORE ALL MATERIALS, AND CLEAN UP REFUSE ON A REGULAR BASIS.
 PROTECT AND MAINTAIN ALL WORK UNTIL THE PROJECT HAS BEEN COMPLETED AND TURNED OVER TO THE CITY.
- 11. THE INSTALLATION SHALL BE COMPLETELY TESTED, DEMONSTRATING THAT THE EQUIPMENT AND SYSTEMS INSTALLED ARE PERFORMING IN THE MANNER INTENDED.
- 12. AT THE COMPLETION OF THE INSTALLATION, PROVIDE TWO MARKED—UP COPIES OF THE TENDER DRAWINGS FOR RECORD PURPOSES. PROVIDE THREE SETS OF OPERATION AND MAINTENANCE MANUALS. PAY ALL COSTS ASSOCIATED WITH THE PRODUCTION OF THE "RECORD" DRAWINGS AND THE MANUALS. SUBMIT THE DOCUMENTS TO THE CONTRACT ADMINISTRATOR FOR REVIEW, AND MAKE ANY REQUESTED CHANGES BEFORE DELIVERING THEM TO THE CITY.
- 13. REVIEW THE OPERATION AND MAINTENANCE OF THE SYSTEMS WITH THE CITY'S MAINTENANCE PERSONNEL AND PROVIDE WRITTEN AND/OR VERBAL INSTRUCTIONS AS REQUIRED.
- 14. FURNISH CERTIFICATES CONFIRMING THAT THE WORK HAS BEEN INSTALLED TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.
- 14.1. NO CERTIFICATE ISSUED, PAYMENT MADE, OR PARTIAL OR ENTIRE USE OF THE SYSTEMS BY THE CITY, SHALL BE CONSTRUED AS ACCEPTANCE OF DEFECTIVE WORK OR MATERIALS.
- 15. THE CONTRACTOR SHALL PROVIDE A ONE YEAR LABOUR AND MATERIAL WARRANTY ON ALL NEW EQUIPMENT AND COMPONENTS, COMMENCING UPON THE DATE OF ACCEPTANCE BY THE CITY.
- 15.1. REPLACE AT NO CHARGE TO THE CITY, ALL ITEMS WHICH FAIL OR PROVE DEFECTIVE WITHIN A PERIOD OF ONE YEAR AFTER THE DATE OF FINAL ACCEPTANCE BY THE CITY, PROVIDED THAT THE FAILURE IS NOT DUE TO IMPROPER USAGE BY THE CITY. MAKE GOOD ALL DAMAGES INCURRED AS A RESULT OF THE FAILURE AND OF THE REPAIRS.
- 16. PROVIDE TEMPORARY HEATING AS REQUIRED. DO NOT USE NEW EQUIPMENT FOR THIS PURPOSE WITHOUT THE EXPRESS CONSENT OF THE CONTRACT ADMINISTRATOR.
- 17. SCHEDULING OF ALL WORK SHALL BE ARRANGED WITH THE CITY. COORDINATE THE SHUT—DOWN OF EXISTING UTILITIES AND SERVICES AS REQUIRED FOR CONNECTIONS OF NEW WORK. WORK WITHIN THE BUILDING MAY HAVE TO BE PERFORMED DURING NON—REGULAR HOURS, AND MUST CONFORM TO THE WORK RULES OF THE BUILDING, AS DIRECTED BY THE CITY.
- 18. THE DRAWINGS FOR THE MECHANICAL WORK ARE PERFORMANCE DRAWINGS, DIAGRAMMATIC AND APPROXIMATELY TO SCALE, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE LOCATIONS OF APPARATUS, FIXTURES AND PIPE/DUCT RUNS. THESE DRAWINGS DO NOT INTEND TO SHOW ARCHITECTURAL AND STRUCTURAL DETAILS.
- 19. EVEN THOUGH SOME PIPING AND/OR DUCTWORK IS NOT COMPLETELY SHOWN SCHEMATICALLY, AND ALL DETAILS ARE NOT SHOWN OR SPECIFIED, IT IS EXPECTED THAT THE CONTRACTORS BE FAMILIAR ENOUGH WITH THEIR FIELDS OF WORK TO COMPLETE THE PROJECT TO THE STANDARDS GENERALLY ADHERED TO BY THE LOCAL INDUSTRY, INCLUDING GOOD WORKMANSHIP AND COMMON SENSE. THE CONTRACT ADMINISTRATOR RESERVES THE RIGHT TO FURNISH ANY ADDITIONAL DETAIL DRAWINGS, WHICH IN THE JUDGEMENT OF THE CONTRACT ADMINISTRATOR, MAY BE NECESSARY TO CLARIFY THE WORK, AND SUCH DRAWINGS SHALL FORM PART OF THIS CONTRACT. THE WORK FOR SUCH CLARIFICATIONS SHALL BE AT NO COST TO THE CITY.

MECHANICAL SPECIFICATIONS SECTION 15100 - GENERAL

- 1. PROVIDE ONE SET OF SPECIAL TOOLS REQUIRED TO SERVICE EQUIPMENT, AS
- RECOMMENDED BY THE MANUFACTURERS/SUPPLIERS.
- PROVIDE DI-ELECTRIC COUPLINGS WHEREVER PIPES OF DISSIMILAR METALS ARE JOINED.
 HOISTING AND PLACING OF MECHANICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE SUB-CONTRACTOR PROVIDING THE EQUIPMENT.
- 4. PIPE HANGERS SHALL BE GRINNELL FIGURE 65 FOR STEEL PIPE AND FIGURE CP65 FOR COPPER PIPE, WITH FIGURE 140 THREADED ROD. THREADED ROD SHALL BE ATTACHED TO FIGURE 117 EXPANSION CASE SET IN HOLES DRILLED IN CONCRETE, OR ATTACHED TO FIGURE 225 OR FIGURE 227 CLAMP ATTACHED TO ROOF/FLOOR JOISTS. FOR INSULATED PIPING, PROVIDE FIGURE 167 PROTECTION SADDLES. SIZE HANGERS AND SADDLES TO SUIT INDIVIDUAL PIPE SIZES, INCLUDING INSULATION WHERE APPLICABLE.
- 5. USE THE FOLLOWING SCHEDULE FOR MINIMUM HANGING STANDARDS FOR HORIZONTAL PIPING:

STEEL PIPE		
<u>SIZE</u>	ROD DIAMETER	MAXIMUM SPACING
1-1/4" (32mm) AND SMALLER	3/8" (10mm)	3'-0" (900mm)
1-1/2" (38mm) AND 2" (50mm)	3/8" (10mm)	10'-0" (3000mm)
2-1/2" (65mm) AND 3" (75mm)	1/2" (12mm)	12'-0" (3600mm)
4" (100 mm) AND 5" (125mm)	5/8" (16mm)	12'-0" (3600mm)
6" (150 mm)	3/8" (10mm)	12'-0" (3600mm)
COPPER PIPE		
<u>SIZE</u>	ROD DIAMETER	MAXIMUM SPACING
1" (25mm) AND SMALLER	3/8" (10mm)	6'-0" (1800mm)
1-1/4" (32mm) AND 2" (50mm)	3/8" (10mm)	10'-0" (3000mm)

- 6. PIPE HANGERS MAY BE PERFORATED GALVANIZED STEEL STRAP HANGERS FOR 2" (50mm) AND SMALLER PIPING IN CONCEALED SPACES.
- 7. PROVIDE ACCESS DOORS AS REQUIRED TO INSTALL, MAINTAIN AND ADJUST EQUIPMENT AND CONTROLS. ACCESS DOORS IN CEILINGS AND WALLS SHALL HAVE PIANO HINGES AND SCREWDRIVER CAM LOCKS.
- 8. PROVIDE FIRESTOPPING AND/OR INTUMESCENT DONUTS, AS REQUIRED, WHERE PIPING PASSES THROUGH FIRE SEPARATIONS.

SECTION 15180 - INSULATION

LENGTH IN COLD ATTIC SPACES.

ALL NEW ROOF DRAINS.

- 1. PROVIDE 1/2" (12mm) THICK, FOIL-FACED RIGID PRE-FORMED FIBREGLASS EXTERNAL THERMAL PIPE INSULATION ON ALL NEW DOMESTIC COLD WATER PIPES.
- 2. PROVIDE 1/2" (12mm) THICK, RIGID, PRE-FORMED FIBREGLASS EXTERNAL THERMAL PIPE INSULATION ON ALL NEW DOMESTIC HOT WATER PIPES.
- 3. PROVIDE 1" (25mm) THICK, FOIL—FACED RIGID PRE—FORMED FIBREGLASS EXTERNAL PIPE INSULATION ON ALL NEW PLUMBING VENTS FOR 10' (3000mm) ON WARM SIDE OF
- 4. PROVIDE 1" (25mm) THICK, FOIL—FACED RIGID PRE—FORMED FIBREGLASS EXTERNAL THERMAL PIPE INSULATION ON ALL NEW ROOF DRAIN PIPING FOR 10' (3000mm) ON THE WARM SIDE OF A PENETRATION THROUGH A WALL OR CEILING/ROOF TO A COLD SPACE, AND FOR FULL LENGTH IN COLD ATTIC SPACES. PROVIDE 1/2" (12mm) THICK FOIL—FACED FLEXIBLE FIBREGLASS EXTERNAL THERMAL INSULATION ON THE BODY OF

A PENETRATION THROUGH A WALL OR CEILING/ROOF TO A COLD SPACE, AND FOR FULL

- 5. PROVIDE 1" (25mm) THICK, FOIL—FACED RIGID PRE—FORMED FIBREGLASS EXTERNAL THERMAL PIPE INSULATION ON ALL NEW NATURAL GAS PIPING FOR 10' (3000mm) ON THE WARM SIDE OF A PENETRATION THROUGH A WALL OR CEILING/ROOF TO A COLD
- 6. PROVIDE 2" (50mm) THICK, FOIL—FACED RIGID (FIBREGLASS OR FIBREBOARD) OR FLEXIBLE FIBREGLASS EXTERNAL THERMAL INSULATION ON ALL NEW EXHAUST OR RELIEF DUCTWORK FOR 10'-0" (3.0M) ON THE WARM SIDE OF A PENETRATION THROUGH A WALL/FLOOR/CEILING/ROOF TO A COLD SPACE, WHERE A BACKDRAFT DAMPER IS PROVIDED AT THE PENETRATION TO THE COLD SPACE. WHERE THE BACKDRAFT DAMPER IS PROVIDED IN THE DUCTWORK, INSULATION SHALL EXTEND FROM THE PENETRATION TO 10'-0" (3.0M) UPSTREAM OF THE BACK DRAFT DAMPER.
- 6.1. INSULATION ON COMMERCIAL KITCHEN HOOD EXHAUST DUCTWORK SHALL BE NON-COMBUSTIBLE MATERIAL SUCH AS MINERAL WOOL OR FIBREGLASS, WITH NO COMBUSTIBLE COVERING.
- 7. PROVIDE 1" (25mm) THICK, FOIL—FACED EXTERNAL THERMAL INSULATION ON ALL NEW CONCEALED SUPPLY AIR DUCT MAINS, EXCLUDING INDIVIDUAL RUN—OUTS TO DIFFUSERS. INSULATION SHALL BE FLEXIBLE FIBREGLASS, OR RIGID FIBREBOARD.
- 8. PROVIDE 2" (50mm) THICK, FOIL—FACED RIGID FIBREGLASS OR FIBREBOARD EXTERNAL THERMAL INSULATION ON ALL NEW OUTSIDE AIR INTAKE, MIXED AIR AND COMBUSTION AIR DUCTWORK. ROUND COMBUSTION AIR DUCTWORK MAY BE FLEXIBLE FIBREGLASS.
- 9. PROVIDE 2" (50mm) THICK, FOIL—FACED RIGID FIBREGLASS OR FIBREBOARD EXTERNAL THERMAL INSULATION ON ALL NEW DUCTWORK LOCATED OUTDOORS. PROVIDE WEATHERPROOFING EQUAL TO:
- 9.1. A MINIMUM OF 2 LAYERS OF OIL IMPREGNATED BUILDING PAPER, AND COAT WITH ULTRAVIOLET RESISTANT BLACK MASTIC. -OR-
- 9.2. A "BLUSKIN" POLY-TYPE BITUMEN MEMBRANE. -OR-
- 9.3. FOR EXPOSED DUCTWORK OUTSIDE OF BUILDING APPLY ONE COAT OF CHILDERS VI—CRYL CP—10 OR OTHER APPROVED MASTIC, EMBED #10 GLASS FABRIC INTO THE WET COATING. SMOOTH OUT ALL WRINKLES LAPPING ENDS AND EDGES AT LEAST 2". AFTER THE FIRST COATING HAS ACHIEVED INITIAL SET BUT STILL DAMP, APPLY A TOP FINISH COATING OF THE MASTIC. ENSURING THAT THE REINFORCING GLASS FABRIC IS COMPLETELY COATED. SMOOTH TO UNIFORMLY EVEN FINISH. AMOUNT OF COMPOUND AS PER MANUFACTURER'S RECOMMENDATION'S.
- 9.4. PROVIDE DIMPLE FINISH .016 ALUMINIUM JACKET.
- 10. PROVIDE 1" (25mm) THICK, BLACK CELLULAR FOAM RUBBER INSULATION ON ALL REFRIGERATION PIPING. INSTALL USING PLASTIC WIRE TIES.
- 11. WHERE 1" ACOUSTIC INSULATION IS PROVIDED, 1" OF THERMAL INSULATION MAY BE
- 12. ALL JOINTS AND ELBOWS SHALL BE COMPLETELY INSULATED EXCEPT JOINTS AND ELBOWS MAY BE LEFT UNCOVERED ON HOT PIPING IN CONCEALED SPACES.
- 13. ALL VALVES AND UNIONS SHALL BE COMPLETELY INSULATED, EXCEPT VALVES AND
- UNIONS MAY BE LEFT UNCOVERED ON HOT PIPING IN CONCEALED SPACES.

 14. SEAMS OF FOIL—FACED THERMAL INSULATION SHALL BE SEALED WITH ALUMINIUM DUCT
- 15. PROVIDE ADDITIONAL LAYER OF CANVAS, FIELD APPLIED, ADHERED, LAP SEALED AND FINISHED WITH A BRUSH COAT OF SIZING.
- 16. PROVIDE PVC FITTING COVERS WHERE CANVAS JACKET IS APPLIED.
- 17. COVER BUTT JOINTS WITH A STRIP OF THE SAME MATERIAL AS THE JACKET.
- 18. FLEXIBLE INSULATION SHALL BE INSTALLED IN A MANNER THAT DOES NOT REDUCE ITS

SECTION 15400 - PLUMBING

- 1. DOMESTIC WATER PIPING ABOVE GROUND SHALL BE TYPE 'L' HARD COPPER, WITH SOLDERED COPPER JOINTS AND FITTINGS. USE LEAD-FREE SOLDER.
- 2. DOMESTIC WATER PIPING BELOW GROUND SHALL BE TYPE 'L' SOFT COPPER, WITH NO JOINTS.
- 3. DRAIN AND VENT PIPING ABOVE GROUND SHALL BE AS ALLOWED BY CODE, INCLUDING DWV COPPER, CAST IRON, AND PVC/ABS PLASTIC. JOINTS SHALL BE SOLDERED FOR COPPER, SOLVENT WELDED FOR PLASTIC, AND MECHANICAL JOINT FOR CAST IRON.
- COPPER, SOLVENT WELDED FOR PLASTIC, AND MECHANICAL JOINT FOR CAST IRON.

 4. DRAIN AND VENT PIPING BELOW GROUND SHALL BE AS ALLOWED BY CODE, INCLUDING CAST IRON, AND PVC/ABS PLASTIC. JOINTS SHALL BE SOLVENT WELDED FOR PLASTIC,
- 5. NATURAL GAS PIPING SHALL BE SCHEDULE 40 STEEL, WITH SCREWED OR WELDED
- 6. DOMESTIC WATER VALVES SHALL BE BALL OR BUTTERFLY TYPE.
- 7. NATURAL GAS VALVES SHALL BE APPROVED PLUG TYPE.

BE FLUSHED TO REMOVE ANY FOREIGN MATERIAL

AND MECHANICAL JOINT FOR CAST IRON.

JOINTS AND FITTINGS AS PER CODE.

- 8. PROVIDE CHROME PLATED ESCUTCHEONS WHERE VISIBLE PIPING PASSES THROUGH WALLS AND PARTITIONS.
- 9. PROVIDE UNIONS WHERE PIPING CONNECTS TO EQUIPMENT. UNIONS SHALL BE LOCATED SO THAT THE PIPING DOES NOT HAVE TO BE ADJUSTED IN ORDER TO REMOVE THE
- EQUIPMENT.

 10. DURING CONSTRUCTION, OPEN ENDED PIPING SHALL BE TEMPORARILY CAPPED TO PREVENT THE ENTRY OF DIRT AND DEBRIS. ON COMPLETION, PIPING SYSTEMS SHALL
- 11. SLOPE ALL DRAIN LINES AT A MINIMUM OF 1/8" PER FOOT (1%) UNLESS A GREATER SLOPE IS REQUIRED BY CODE, OR A LESSER SLOPE IS NOTED ON THE DRAWINGS.

SECTION 15800 - VENTILATION

SMACNA STANDARDS.

DUCTWORK SHALL BE GALVANIZED SHEET METAL UNLESS NOTED OTHERWISE. AND SHAL

1. ALL DUCTWORK AND RELATED ACCESSORIES SHALL BE INSTALLED AS PER THE LATEST

- 2. DUCTWORK SHALL BE GALVANIZED SHEET METAL UNLESS NOTED OTHERWISE, AND SHALL BE OF THE FOLLOWING GAUGES:
 - DUCTS UP TO 12" (300 MM) ON LONGEST DIMENSION = 26 GA.

 DUCTS 13" TO 28" (325 TO 700 MM) ON LONGEST DIMENSION = 24 GA.

 DUCTS 29" TO 48" (725 TO 1200 MM) ON LONGEST DIMENSION = 22 GA.

 DUCTS 49" TO 96" (1225 TO 2400 MM) ON LONGEST DIMENSION = 20 GA.
- ROUND (EXPOSED SHALL BE SPIRAL. CONCEALED SHALL BE SNAP-LOCK OR SPIRAL)
 DUCTS 8" (200 MM) AND SMALLER = 26 GA.
 DUCTS 9" TO 22" (225 TO 550 MM) = 24 GA.
- 3. 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 THAN THE DUCTWORK. DUCT DAMPERS SHALL HAVE LOCKING QUADRANTS AND POSITION INDICATORS.
- 4. ALL DUCTWORK SHALL BE SEALED WITH DUCT SEALANT.

DUCTS 24" TO 36" (600 TO 900 MM) = 22 GA.

- 5. PROVIDE 4" (100mm) WIDE FLEXIBLE FABRIC DUCT CONNECTIONS AT INLETS AND OUTLETS OF FANS.
- 6. WHERE SHOWN OR NOTED ON THE DRAWINGS, PROVIDE 1" THICK, FLEXIBLE RESIN IMPREGNATED FIBREGLASS INTERNAL ACOUSTIC INSULATION WITH BLACK PLASTIC—COATED MATTER FINISH
- 6.1. ACOUSTIC INSULATION SHALL BE INSTALLED USING PINS WELDED TO THE DUCTWORK, AND ADHESIVE. PROVIDE BLACK MASTIC TO SEAL ALL JOINTS.
- 7. FIRE DAMPERS SHALL BE INSTALLED AT ALL LOCATIONS WHERE DUCTWORK PASSES THROUGH A RATED SEPARATION, WHETHER SHOWN ON THE DRAWINGS OR NOT. CONFIRM ALL SEPARATION LOCATIONS WITH THE ARCHITECTURAL DRAWINGS.
- 8. PROVIDE DUCT ACCESS DOORS AT ALL LOCATIONS REQUIRED FOR INSTALLATION, MAINTENANCE OR ADJUSTMENT OF EQUIPMENT OR CONTROLS. ACCESS DOORS SHALL HAVE GASKETS, PIANO HINGES AND THUMB LATCHES. DOORS SHALL BE INSTALLED TO ALLOW FOR INSTALLATION OF INTERNAL OR EXTERNAL INSTALLATION AS REQUIRED.
- 9. SUPPORT HORIZONTAL DUCTWORK AT MAXIMUM 8'-0" (2400mm) ON CENTRE.
- 9.1. FOR ROUND DUCTWORK UP TO 36" (900mm) DIAMETER, SUPPORT DUCT USING PERFORATED GALVANIZED STEEL STRAP, SUSPENDED USING THREADED RODS ATTACHED TO THE STRUCTURE. USE 3/8" (10mm) RODS FOR DUCTS 12" (300mm) DIAMETER AND LESS. USE 1/2" (12mm) RODS FOR DUCTS 14" TO 22" (350mm TO 550mm) DIAMETER. USE 5/8" (16mm) RODS FOR DUCTS OVER 24" (600mm) DIAMETER.
- 9.2. FOR ROUND DUCTWORK OVER 36" (900mm) DIAMETER, SUPPORT DUCT USING 1" x 1" x 1/8" (25mm x 25mm x 3mm) GALVANIZED ANGLE IRON TRAPEZE, SUSPENDED BY 5/8" (16mm) DIAMETER THREADED RODS ATTACHED TO THE
- 9.3. FOR RECTANGULAR DUCTWORK 18" (450mm) WIDE OR LESS, SUPPORT DUCT WITH PERFORATED GALVANIZED STEEL STRAP, SUSPENDED USING 1/2" (12mm) THREADED RODS ATTACHED TO THE STRUCTURE.
- 9.4. FOR RECTANGULAR DUCTWORK OVER 18" (450mm) WIDE, SUPPORT DUCT WITH 1" x 1" x 1/8" (25mm x 25mm x 3mm) GALVANIZED ANGLE IRON TRAPEZE, SUSPENDED BY 5/8" (16mm) DIAMETER THREADED RODS ATTACHED TO THE STRUCTURE.
- 9.5. IN CONCEALED SPACES FOR ROUND AND RECTANGULAR DUCTWORK 12" (300mm)
 WIDE OR LESS, PERFORATED GALVANIZED STEEL STRAP MAY BE USED IN LIEU
 OF THREADED ROD SUSPENSION.

FAN SCHEDULE										
NO.	LOCATION	MAKE MODEL TYPE	AIR E.S.P.	MOTOR MOTOR	POWER	REMARKS				
					CFM	IN. WG	RPM	HP	VOLT/PHASE	
					(I/s)	(pa)		(kw)		
RH-1	KITCHEN	VIKING	VCWH3648	CENTRIFUGAL	300	0.5	-	FRC	115/1	
					(142)	(124.5)		(.)		1

	DIFFUSER,REGISTER,AND GRILLE SCHEDULE											
NO.	SERVICE	MAKE	MODEL	SIZE	BORDER	CORE	BLADE	FRAME	FASTEN	VOLUME	FINISH	REMARKS
				IN. x IN.						DAMPER		
				(mm x mm)								
S1	SUPPLY	EH PRICE	SPD	24 x 24	1-	-	-	31	-	-	B12	
	AIR			(610 x 610)								

PLUMBING		
FIXTURE		
SCHEDULE		
Label	Fixture	Specification
SK-1	Service / Mop sink	Stern Williams #HL-1810 square service / Mop sink, 610 mm (24") x 610 mm (24") x 305 mm
		(12") deep, pearl gray marble chips and Portland cement ground smooth, sealed to resist
		stain, 152 mm (6") drop at threshold, cast brass drain with stainless steel strainer,
		3"(75mm) outlet. American Standard #8354.112 wall mounted Two handle faucet, center
		hole only, chrome plated cast brass body, integral stops, spout with atmospheric vacuum
		breaker and bucket hook, lever handle, top brace. Stern Williams A-20 Bumper Guard 18,
		anodized aluminum cap.Stern Williams T-35 Hose and Wall Hook hose 36" (914mm) long
		with 3/4" (19mm) chrome coupling, stainless steel wall bracket, 18.Stern Williams T-40
		Mop Hanger stainless steel #4 finish, 24" (610mm) long with 3 rubber spring loaded drips,
		18.Stern Williams BP-224 Back Splash Panel 20 gauge type 304 stainless steel, 18.ProvideP
		Trap, same material as the connecting pipe drain.
FD-1	Floor Drains - Finished Area -	Jay R. Smith #2005 4-2645 Floor Drain, all duco coated, 9" (220mm) dia. cast iron body,
	Hub Adaptor	reversible flashing clamp with seepage openings, no-hub outlet, 4" (102mm) Outlet hub
		adaptor .
HB-1	Hydrants - Interior - Hose Bibb	JRS Products #560-10 Hose Valve, heavy duty rough brass body with integral cast flange,
		vandal-resistant lock shield bonnet with removable wheel handle, 1/2" (13mm) NPT
		female inlet and 3/4" (19mm) hose end vacuum breaker.

C/W MODEL # V INV 300 INTERIOR POWER V ENTILATOR KIT

TOWER PROJECT NUMBER: 12431

TOWER ENGINEERING GROUP

1-1140 WAVERLEY STREET WINNIPEG, MB R3T OP4
TEL: 204-925-1150 FAX:204-925-1155
towereng@towereng.ca www.towereng.ca
• WINNIPEG • CALGARY • CAMBRIDGE

)	6	NOV 27, 2015	ISSUED FOR REVIEW	MH
	5	FEB 18, 2015	ISSUED FOR REVIEW	LJR
	4	FEB 2, 2015	ISSUED FOR REVIEW	LJR
	3	JAN 9, 2015	ISSUED FOR REVIEW	LJR
	2	APRIL 9, 2013	ISSUED FOR REVIEW	LJR
	1	APRIL 3, 2013	ISSUED FOR REVIEW	LJR

ſ	ND.	DATE	DESCRIPTION	BY	
	I	AFRIL 3, ZUIS	1330ED FOR REVIEW	LUIN	

DRAWN BY LJR MARCH 2013

Drawings and specifications, as instruments of service are the property of the city, the copyright in the same being reserved to them. No reproduction may be made without the permission of the city, and All prints to be returned.

The contractor is to verify dimensions and data noted herein with conditions.

The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the designer for adjustment.





REVISIONS

SYNERGY INTERIOR DESIGN INC

13 Rosewarne. Avenue WINNIPEG, MB Canada R2M 0V8

204 233 9159

malvine@synergyinteriors.com

DATE MARCH 2013 SCALE N.T.S.

DRAWN BY LJR CHECKED BY LJR

STATION 10, 1354 BORDER ST. WINNIPEG, MB.
CITY OF WINNIPEG

AUTOCAD NUMBER DWG. M4.0