

MECHANICAL SPECIFICATIONS

GENERAL REQUIREMENTS FOR MECHANICAL WORK

1.0 SCOPE OF WORK

- 1.1 Conform to the applicable provisions of the General Conditions of the Contract.
- 1.2 The General Mechanical Specification shall apply to and be part of each of the sections covering the mechanical trades work.
- 1.3 Comply with the requirements of the current edition of the **Manitoba** Building Code, all other applicable codes, regulations, by-laws, and official standards according to the requirements and interpretations of the authorities having jurisdiction. These codes & standards constitute an integral part of these specifications. In case of conflict, the codes take precedence over the Contract Documents.

2.0 EXAMINATION OF SITE AND INFORMATION

- 2.1 Each Subcontractor, before tendering, shall examine the site, the Architectural, Structural, Mechanical, and Electrical drawings and he shall familiarize himself with the building construction and finish in order that his tender may include everything necessary for the proper completion of the work.
- 2.2 It shall be this Subcontractor's responsibility that material and equipment be brought into the building in such assemblies and sizes as to enter into the spaces where they are to be located and to be small enough to be hoisted into the building without difficulty. Any cutting, patching, etc., involved in getting large assemblies into place, shall be the responsibility of this Subcontractor.

3.0 RELATIONSHIP TO OTHER TRADES

- 3.1 This Subcontractor shall confer with all other contractors installing equipment, plant piping, other work, foundations, etc., which may affect his installation, and he shall arrange his equipment, piping, etc., in proper relation with other apparatus, and with the building construction. He shall also confirm the electrical characteristics of the project and order equipment accordingly.
- 3.2 Special care shall be taken in the installation of all work, to see that they all come within the limits established by the finish lines of all walls, floors, ceilings, etc.
- 3.3 This Subcontractor shall notify the contractor and other Subcontractors who are concerned, of all openings, foundation work, hangers, inserts, anchors, or other provisions necessary in their work for the installation of his work, and he shall furnish all information and necessary materials in ample time so that proper provisions can be made for same, and shall supply and correctly and accurately place all inserts, sleeves, anchors, etc.
- 3.4 Failure to comply with these requirements on the part of this Subcontractor will render him responsible for the cost of cutting openings, installing hangers and other provisions at a later date, and the subsequent patching, etc., thereby required.
- 3.5 No cutting shall be done without permission. All such work shall be done by tradesmen killed in and certified for this particular trade.

4.0 SHOP DRAWINGS

- 4.1 Each Subcontractor shall submit eight (8) copies of the shop drawings to the Architect for review of material, equipment, and apparatus being provided by him. These shall show in detail the design and construction and performance of all apparatus, etc.
- 4.2 The Engineer's review of shop drawings and manufacturer's specifications of any equipment is general and is not intended to serve as final check and it shall not relieve the Subcontractor of the responsibility for errors or of the necessity of checking the drawing himself, or of furnishing any of the materials and performing the work required by the drawings and specifications to the full intent of this specification.
- 4.3 Before submission, this Subcontractor shall check all shop drawings for accuracy of details, dimensions, etc. and shall be satisfied that the drawings are correct and that the equipment will fit properly in the allotted space. The shop drawings shall be stamped by this Subcontractor with the word 'Reviewed', the date of approval, and the firm's name prior to submission.

5.0 REQUIREMENTS OF INSPECTION DEPARTMENTS

- 5.1 All work shall be installed in accordance with all laws and regulations of all authorities having jurisdiction in each case, particularly all affected departments of the Municipality and Province. Electrical equipment supplied must conform to the regulations of CSA and the local utility. Anything necessary to make the work comply with these requirements shall be provided by this Subcontractor without additional cost to the owners if it reasonably could have been foreseen when tendering.

- 5.2 Each subcontractor shall prepare drawings in addition to Engineer's drawings as may be required by various inspection departments having jurisdiction, and obtain their approval before proceeding with the work.

- 5.3 In the event that the inspection department's request deviates from the Engineer's layout, Subcontractor shall consult the Engineer before proceeding with same. It shall be noted that Engineer's drawings are generally acceptable to inspection departments and minor supplements need only be made by Subcontractors.

6.0 CERTIFICATES, PERMITS, FEES

- 6.1 Subcontractor shall give all necessary notices, obtain all required permits and pay all fees including payment for street connections to storm, sanitary, water and gas in order that the work herein specified may be carried out and he shall furnish any certificates needed as evidence that the work installed conforms with the Laws and Regulations of the Municipality and Province.
- 6.2 Subcontractor shall contact the local gas company as soon as possible and verify that gas service is available at pressure and capacity required for the project. He shall inform engineer immediately, if there is any problem with gas service whatsoever. It shall be this subcontractor's responsibility to coordinate gas requirements with the gas company before any of his work proceeds.

7.0 GUARANTEE

- 7.1 This subcontractor shall guarantee all material and workmanship used in the work to be in strict accordance with the specifications, of best quality and type obtainable to give first-class construction and proper and efficient operation, and free from any defects. Any such defects which may appear in any of the work within one year after written acceptance of his work, shall be repaired and replaced by this Subcontractor without additional expense to the owner. Where such defects occur, this Subcontractor shall be held responsible for all costs incurred in making the defective work good. This shall not obsolete any longer warranties on specific items of equipment.
- 7.2 All injuries to adjacent work, particularly plaster, wood finishes or other materials, or damage to other equipment, caused by such defects of this Subcontractor's work or by subsequent replacements and repairs, shall be made good at the expense of this Subcontractor. All repair work shall be done by the trades responsible for the original work.

8.0 EXCAVATING AND BACKFILLING

- 8.1 Unless otherwise indicated, all necessary excavating and backfilling shall be done by this subcontractor.
- 8.2 Before commencing with work, check locations of all existing services. This subcontractor is responsible for all damages and subsequent expenses resulting from his negligence in this respect.
- 8.3 Keep excavation free of water.
- 8.4 Provide any necessary sharing as may be required for the safety of the trade installing the work.
- 8.5 Backfill inside building and under paved areas with pit run gravel or sand properly tamped in 12" layers.
- 8.6 In all other areas backfill with good clean earth properly tamped in 12" layers.
- 8.7 Excess excavated material shall be piled on the site where directed by the field supervisor for removal by others.
- 8.8 Lay all piping on a bed of solid undisturbed earth or where this is not obtainable, on concrete pads, supported by concrete piers extended down to the undisturbed bearing.
- 8.9 Where any excavating is necessary in close proximity to or below any footing level, backfill with 1,500lb. concrete to the level of the top of the highest adjacent footing.
- 8.10 At the completion of the project fill in and level off exterior excavations.

9.0 DRAWINGS

- 9.1 The drawings show the approximate location for the special apparatus and the materials throughout the building. The arrangement shown on the drawings is more or less diagrammatic and as such approximate only, and may be altered, as approved by the Engineer, to meet the requirements of the apparatus, etc., and of the building. Each Subcontractor shall be held responsible for all measurements for his work throughout, and he shall arrange his piping, wiring, and apparatus to conform to the Architectural and Structural details in a satisfactory manner and shall co-operate with other contractors to ensure that work shall meet all requirements of diverse contracts.

- 9.2 The Subcontractors is particularly cautioned that small scale engineer's plans must be supplemented by his own detail drawings where necessary for proper co-ordination of the work.

- 9.3 Items shown on the drawings but not specified or specified but not shown shall be included.

- 9.4 Items obviously required to provide a complete working system but not specified nor shown shall be included.

10.0 CONTRACTOR'S SHOP

- 10.1 Each Subcontractor shall provide his own office, workshop, tools and materials storage and be responsible for any loss or damage thereto. Building shall be erected under the supervision of the contractor.

11.0 RESPONSIBILITY AND LIABILITY

- 11.1 Each subcontractor shall supervise the laying out of his work and shall arrange it in co-operation with others who may be working on the premises while the work of this contract is in progress. He shall protect finished and unfinished work of this contract and/or work of others on the premises until the completed work has been accepted, of any discrepancies or inconsistencies found in the drawings or specifications before submitting his tender. He shall abide by the decision given him in writing with regard to same. Each Subcontractor is cautioned that the work as shown is intended to be complete in all respects and that failure on his part to notify the engineer of any discrepancies will not relieve him of the responsibility of completing the work as intended at the contract price.

12.0 CLEAN-UP

- 12.1 During the course of construction, each Subcontractor shall keep his work tidy and not allow and accumulation of debris resulting from his work.

- 12.2 Upon completion of his work he shall leave the premises in a broom-clean condition.

13.0 PROTECTION

- 13.1 Protect your work from construction dirt or damage from any cause. Securely plug and cap all openings in pipe, equipment, and fixtures to prevent obstructions.

14.0 IDENTIFICATION OF EQUIPMENT

- 14.1 Identify all fans, pumps, motor starters, and other mechanical equipment as to service, by an engraved plastic lamacoid nameplate, firmly affixed by adhesive and screws to each unit. Note that both unit and its remote starter shall be tagged. Provide pressure sensitive tape markers, showing pipe service and arrows indicating direction of flow on exposed pipes. On concealed pipes, provide markers adjacent to access doors throughout the length of pipes at intervals not exceeding 50 feet. Install markers after pipe has been painted and on both sides of any wall through which pipe passes.

15.0 TAGS

- 15.1 At the completion of the installation, the mechanical contractor shall tag all valves with numbered brass discs and shall provide the owner with a framed list of the tags to indicate location and service of all valves.

16.0 OPERATING INSTRUCTIONS AND RECORD DRAWINGS

- 16.1 For each item of special apparatus, operating and maintenance instructions shall be provided in 3 copies for the owner's use. These shall include:
- General arrangement shop drawings.
 - Complete explanation of operating principles and sequences.
 - Complete part lists with numbers.
 - Recommend maintenance practices and precautions.
 - Complete wiring and connections diagrams.

- 16.2 Obtain two sets of mechanical drawing white prints from the Contractor and keep a record in red pencil of any deviation from the drawn location of pipes, ducts, etc. One set shall be turned to the owner with the operating instructions, and the other set shall be handed the the Engineer. All buried piping shall be adequately dimensioned for future location and depth shall be shown at main reference points.

17.0 PAINTING

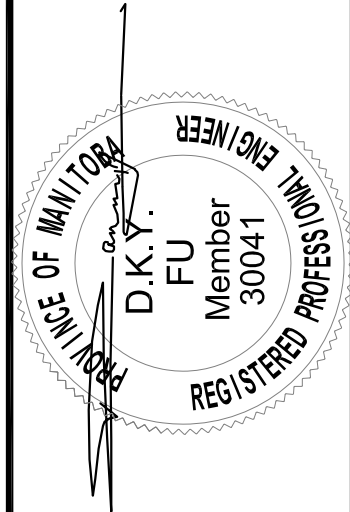
- 17.1 All equipment fabricated from steel and not factory finish painted shall be supplied with a prime coat done at the supplier's factory. If damaged in transit or on the job, this contractor shall touch up with red lead primer before finish painting.


18.0 ACCESS DOORS

- 18.1 Locate access doors where required and of sufficient size for servicing valves, dampers, cleanouts, etc.
- 18.2 These shall be flush mounting, screwdriver access, metal types, 16 gauge primed steel.

NOTE:

ALL ARCHITECTURAL, LIGHTING AND STORE'S EQUIPMENT INFORMATION SHOWN, ARE OBTAINED FROM OTHER SOURCES AND SHOWN FOR REFERENCE ONLY.



**FU ASSOCIATES LTD.**
Mechanical & Electrical Engineers

5200 DIXIE ROAD, SUITE 102
MISSISSAUGA, ONT. L4W 1E4

TEL : 905.238.6939
FAX : 905.238.6780

NO.	DATE	DESCRIPTION	BY	DF
1.	07/27/15	SUBMITTED FOR REVIEW/PERMIT		

Project:	MARY BROWN'S FAMOUS CHICKEN AND TATERS	Scale:	NTS
	KILDONA CROSSING SHOPPING CENTRE	Date:	07/27/15
Drawing:	1615 REGENT AVENUE W. WINNIPEG, MB	Drawn:	BK
	MECHANICAL SPECIFICATIONS	Checked:	DF
		Project No:	15-134
		Drawing no:	M1.1

MECHANICAL SPECIFICATIONS (CONT'D)

HEATING, VENTILATING, AND AIR CONDITIONING

1.0 GENERAL

- 1.1 All heating, ventilating, and air conditioning equipment shall be CSA listed, bear the CSA seal, and be installed in accordance with CSA standards.
- 1.2 In addition to the provisions of sentence (1), all fans shall be licensed to bear the AMCA seal.
- 1.3 All ductwork shall be constructed, installed, & supported in accordance with ASHRAE and SMACNA standards.
- 1.4 In addition to the provisions of sentence (3), all rigid ductwork shall be fabricated from galvanized steel sheets in accordance with NFPA-90A, ULC-S110, and ASTM-A525; and of the US sheet gauges as tabled below.

Sheet Gauge	Rectangular Duct	Round Duct
26	Up to 12"	Up to 13"
24	13" – 30"	14"-22"
22	31" – 54"	23" – 36"
20	55" – 84"	37" – 50"
18	85" & above	51" – 60"

Flat areas of duct over 18" shall be stiffened by cross breaking across the corners, and all ducts shall be self-supporting.

- 1.5 In addition to the provisions of sentence (3), all flexible ductwork shall be subject to NFPA-90A and ULC-S110 standards for flame spread and smoke developed, be ULC listed, and bear the ULC seal. All connections shall use joint treatment type as detailed in manufacturer's instructions. Maximum length of flexible ductwork shall be 12'-6", used only in horizontal runs, and shall not penetrate fire separations.
- 1.6 Ductwork shall be made substantially air tight throughout and shall have no openings other than those required for proper operation and maintenance. The allowable leakage factor shall not exceed 2% through the longest duct run. All duct joints shall be sealed with joint tape meeting the flame resistance requirements of ULC-S109.
- 1.7 All air handling systems shall be tested and balanced by a qualified testing company to within 5% of the design air volumes. Three (3) copies of the final testing and balancing report shall be submitted to the architect for review by the engineer.
- 1.8 Elbows shall be constructed using a radius of 1.5 times of duct diameter / width. Hollow turning vanes in vane rails shall be used when this is not possible.
- 1.9 Balancing dampers shall be installed at all take-offs from branch ducts, and all branch duct connections to main ducts. Balancing dampers shall be manually operated opposed blade type, splitter type, or butterfly type, complete with locking quadrant operator.
- 1.10 Fire dampers shall be installed in the plane of penetration of fire separations and in accordance with NFPA-90A and ULC-S505, and shall bear the ULC seal. Dampers shall be types A or B, 1.5 Hour fire rated and complete with 160 deg. F replaceable link. A tightly fitted access door shall be installed for each fire damper to provide access for inspection, and resetting of damper, and replacing of fusible link. Fire dampers shall be supported independently from ductwork.
- 1.11 Vibration isolation flexible duct connectors shall be used where ductwork connects directly to air handling equipment. Connectors shall be noncombustible, or of combustible fabric construction provided they do not exceed 10" in length and comply with the flame resistance requirements of ULC-S109. Collars shall be galvanized iron and fastened securely to ensure a leakproof connection.
- 1.12 All ductwork shall be installed to allow freedom from vibration during operating conditions. Duct hangers shall be supported from structural steel and structural concrete slab, but not from roof deck. Bent galvanized iron hangers shall be used for ducts up to 36" in width. For wider ducts, $\frac{1}{2}$ " diameter rods and $1\frac{1}{2}$ " structural angle irons shall be used. Duct hangers shall e spaced maximum 8'-6" apart. Where ducts pass through walls and floors, the space around the duct shall be packed and sealed with fire resistant sealing compound.
- 1.13 Kitchen exhaust ductwork shall be installed in compliance with N.F.P.A. #96 latest edition. Provide all access, cleanout, separations as per N.F.P.A. #96 whether shown on plans or not. All kitchen exhaust ductwork shall be 16 gauge welded.
- 1.14 Spiral ductwork shall be spiral helix as manufactured by Wesbell High-Tec Manufacturing Inc.

INSULATION

1.0 GENERAL

- 1.1 Insulation shall be applied on clean, dry surfaces and only after tests and approvals required have been completed.
- 1.2 All pipe insulation shall be continuous through wall and ceiling openings and sleeves. Suitable fire stops shall be installed where required.
- 1.3 Insulation on all cold surfaces must be applied with a continuous, unbroken vapour seal.
- 1.4 Hangers, supports, anchors, etc., that are secured directly to cold surfaces, must be adequately insulated and vapor sealed to prevent condensation.
- 1.5 All surface finishes shall be extended to protect all surfaces, ends, and raw edges of insulation.
- 1.6 All domestic hot and cold water piping shall be insulated.

2.0 PLUMBING AND PIPING INSULATION

Pipe Insulation:Glass fibre insulation with factory applied jacket; Johns-Manville Micro-Lok 650 or approved equal.

Jacket Exposed: Canvas Free – A vapour barrier jacket, consisting of a white glass fibre surface bonded to an aluminized film.

Jacket Concealed: All Purpose – A vapour barrier jacket, consisting of a high intensity white kraft paper surface bonded to an aluminized film and reinforced with a glass fibre yarn.

Fittings: Pre-moulded one piece PVC insulated fitting covers; Johns-Manville Zeston or approved equal.

A. Domestic Cold Water:

Domestic Hot Water Supply:
Domestic Hot Water Return:

Ambient Temperature	Pipe Size	Thickness
Below 35°F	All	$1\frac{1}{2}$ "
Above 35°F	All	1"

B. Hydronic Heating Supply:

Hydronic Heating Return:

Pipe Size	Thickness
Up to 2"	1"
$2\frac{1}{2}$ " to 4"	$1\frac{1}{2}$ "
Over 4"	$2\frac{1}{2}$ "

C. Chilled Water Supply:

Chilled Water Return:
Horizontal Drains:

Pipe Size	Thickness
Up to $1\frac{1}{4}$ "	1"
$1\frac{1}{2}$ " and Over	$1\frac{1}{2}$ "

D. Air conditioning unit runouts and drain lines

All runouts from riser or main to the air conditioning units and air conditioning unit drain lines shall be installed with flexible foam, closed cell structure, plastic insulation; Johns-Manville Aerotube or approved equal.

Pipe Size	Thickness
Up to 3"	$\frac{1}{2}$ "
4" and Over	$\frac{3}{4}$ "

Cuts and butt joints of insulation shall be joined by sealing with a waterproof vapour barrier adhesive.

3.0 DUCTWORK INSULATION

Insulate only ductwork shown and/or noted on the drawings.

A. Thermal:

Rectangular Duct – Rigid glass fibre $1\frac{1}{2}$ " thick board; Johns-Manville Spin-Glas 650 board or approved equal. Vapour barrier shall consist of a foil scrim kraft paper laminate consisting of aluminum foil reinforced with glass fibre yarn and laminated to a chemically treated fire resistant kraft.

Round Duct – Flexible glass fibre $1\frac{1}{2}$ " thick blanket; Johns-Manville Microlite with a foil scrim kraft facing or approved equal.

All exhaust ducts shall be insulated within 6'-0" of cold outlet at roof, attic, or wall with 1" thick glass fibre insulation with foil faced vapour barrier (as above).

All heating, A/C, make-up air, and exhaust ductwork within unconditioned (attic, etc.) shall be insulated with 2" rigid fibreglass chermal insulation c/w vapour barrier.

Insulated outdoor or exposed ductwork shall be finished with 6 oz. fire retardant canvas lagged in place with fire retardant lagging adhesive, outdoor vapour barrier mastic finish with a reinforcing membrane, all joints shall have a minimum overlap of 3".

Flexible Duct – Can-flex type C1-IV insulated polyolefin jacket, Can-flex type C1-IA insulated aluminized jacket, or approved equal.

B. Acoustic:

Flexible glass fibre 1" thick duct liner; Johns-Manville Linacoustic or approved equal.

Provide acoustic lining on first 12 feet from unit of a/c supply ducts and return ducts. Enlarge ducts to provide inside clear dimensions as shown on drawings.

4.0 EQUIPMENT LIST AND SCHEDULE

4.1 Louvre, Grille, and Diffuser Schedule: (E.H. PRICE OR TITUS EQUAL)

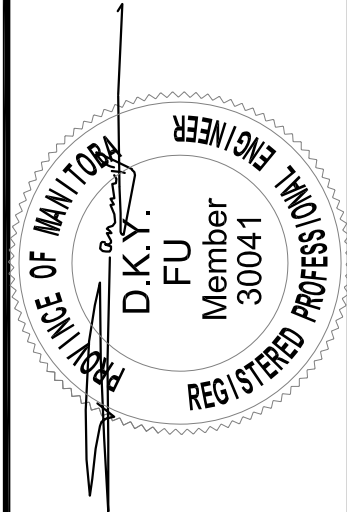
Type	Description
A	E.H. Price Model 620DLA supply air register c/w screwdriver operated opposed blade damper.
B	E.H. Price Model SCD/24x24/31/3C/B13 supply air ceiling diffuser, insulated backpan, for lay-in inverted T-bar ceiling (or drywall ceiling). Finish shall be off-white baked enamel. Provide volume damper and frame in drywall ceiling areas.
D	E.H. Price Model 80/B13 return air grille for lay-in inverted T-bar ceiling grid (or drywall ceiling), $\frac{32}{14}$ "x $\frac{32}{14}$ "x $\frac{32}{14}$ " aluminum eggcrate grid core c/w frame.
E,F	E.H. Price Model 530 with suitable frame grilles.

Note: All grilles and diffusers shall be finished as per architectural specification.

PLUMBING, DRAINAGE, AND PIPING

1.0 GENERAL

- 1.1 Work shall include all plumbing and drainage as required and/or shown on the drawings. All work that is installed, tested, and inspected in accordance with the National Plumbing Code and local plumbing codes, by-laws, and regulations.
- 1.2 All required tests shall be made in the presence of the authorized inspector certifying the test. Upon completion of the test, written report to the architect, summarizing complete test data and results.
- 1.3 Provide sleeves where piping passes through foundations, floors, roofs, or walls. Sleeves shall be schedule 40 galvanized or wrought iron pipe, or type "L" or "K" copper tube through foundations, floors, or roofs, and of 20 gauge galvanized steel sheet through above grade walls. Sleeves are not required for plumbing vents. All sleeves shall be sized to accept insulated pipe.
- 1.4 Horizontal piping shall be supported at intervals as follows:
- | | |
|----------------------------------|--------|
| Pipe sizes up to $\frac{3}{4}$ " | 6'-0" |
| Pipe sizes 1" to 3" | 8'-0" |
| Pipe sizes 4" and over | 12'-0" |
- 1.5 Pipe hangers shall consist of Grinnell No. 260 Clevis hangers with threaded rods and suitable clamping device at top end. Grappler strap hangers are not acceptable.
- 1.6 Where supporting copper pipe, the pipe shall be isolated from the hanger with Electrolytic Action tape or equivalent.
- 1.7 Vertical piping shall be suspended at the floor and/or with intermediate wall supports at 10'-0" intervals for piping 2" and over, and 6'-0" intervals for piping up to $1\frac{1}{2}$ ". More frequent supports shall be provided where necessary to prevent movement.



FA
FU ASSOCIATES LTD.
Mechanical & Electrical Engineers

5200 DIXIE ROAD, SUITE 102 TEL : 905.238.6939
MISSISSAUGA, ONT. L4W 1E4 FAX : 905.238.6780

NO.	DATE	DESCRIPTION	BY	DF
1.	07/27/15	SUBMITTED FOR REVIEW/PERMIT		

Project:	Scale: NTS	Date: 07/27/15	Drawn: BK	Checked: DF	Project No: 15-134	Drawing no: M1.2
MARY BROWN'S FAMOUS CHICKEN AND TATERS KILDONA CROSSING SHOPPING CENTRE 1615 REGENT AVENUE W. WINNIPEG, MB			MECHANICAL SPECIFICATIONS (CONT'D)			

MECHANICAL SPECIFICATIONS (CONT'D)				
1.8 All piping shall be installed to make provision for the expansion and contraction of pipes and to be free from strains and distortions. Provide swing joints on all branch lines, expansion loops on all straight runs over 100 feet, and anchors to limit horizontal expansion.				
1.9 Provide drain cocks at all low points of water systems to allow drainage of system and where required to prevent freezing.				
1.10 All exposed fittings, valves, waste, and water piping shall be chrome plated in washroom and kitchen areas and other finished areas.				
1.11 Provide stops to each plumbing fixture of Lockshield or Handwheel type as specified. Provide isolating valves to each group of plumbing fixtures.				
1.12 Provide air column chambers at each group of plumbing fixtures. These shall be 1" minimum pipe with cap. 18" long mounted on the top of the supply headers of hot and cold water. here the header is larger than 1", the column shall be one size larger than the header. Alternatively, provide Ancon "Shok-Guard" or approved equal water harmer arrestor, sized for the applications in accordance with manufacturer's recommendations.				
1.13 Provide automatic trap seal primer, Ancon No. MS-180 or approved equal, for every floor drain, hub drain, and combination drains. Trap seal primer shall be connected to nearest water supply. Where several traps with primer requirements are located in close vicinity, the use of a properly sized flush tank is acceptable.				
1.14 Provide Dielectric Unions or couplings at all connections between copper and piping.				
1.15 Provide complete plumbing vent system as required by O.B.C. and local authorities.				
2.0 MATERIALS				
2.1 Underground water mains shall be p.v.c. certified to CAN/CSA-B137.3 "Rigid polyvinyl chloride pipe for pressure applications" minimum pressure rating: 1034 kpa (150 psi) size 100 mm (4") dia. to 200mm (8") dia.				
Note: Some municipalities require that buried P.V.C water mains must be ductile iron entering a building. Contact the local authority having jurisdiction. Ductile iron water mains shall conform to ANSI/AWWA C151/A21-51 and shall have a cement-mortar lining in conformance with ANSI/AWWA C104/A21-4.				
2.2 Underground watermain 50 mm (2") dia. and smaller shall be type 'K' soft copper certified to ASTM B88, "seamless copper water tube". Note: solder joints are not permitted in underground watermain systems. Solder joints above ground shall conform to ANSI B16-18 or B16-22. Flared joint settings shall conform to ANSI B16-26.				
2.3 All above ground domestic water pipes - copper type 'L', ASTM B88, third party certified with lead-free solder.				
3.0 VALVES FOR DOMESTIC HOT AND COLD WATER DISTRIBUTION				
3.1 Domestic and Non-Potable Hot and Cold Water: - Type of Piping: Type 'L' Copper - Pressure rating: 1380 kPa (200 psig) W.O.G.				
1. Gate Valves -65 mm (2½") & under - all bronze, solder ends; -75 mm (3") and over - iron body, bronze mounted, flanged. Install ball valves on hot and cold water riser connections (up to 50 mm (2")) to main runs.				
Manufacturer	Catalogue No.			
	65 mm (2½") & under			
	75 mm (3") & over			
	Non-Rising Stern			
	Rising Stern			
	Rising Stern			
	Rising Stern			
	Red White			
	299			
	281A			
Crane	421A			
	415A			
	459			
	440			
	461			
	465-1/2C			
	72			
	75			
	41			
	44			
Kitz	Note: Use non-rising stern only where there is insufficient clearance for rising stern type.			
2. Globe Valves -50 mm (2") & under - bronze, composition disc, solder ends.				
Manufacturer	Catalogue No.			
	Lug			
	5121EL			
	6121EL			
	220 EL			
	230 EL			
	1000			
	122			
	Note: Butterfly valves may be used in lieu of gate or globe valves, 65 mm (2½") and over.			
3. Butterfly Valves -1065 kPa (150 psi) wp; - 65 mm (2½") and over - iron body, aluminum bronze disc, stainless steel stern, full EPDM liner. Lever operation for size 150 mm (6") and under. Gear operation for size 200 mm (8") and over.				
Manufacturer	Catalogue No.			
	50 mm (2") & under			
	65 mm (2½") & over			
	1342			
	374			
	4092			
	587			
	435A			
	78			
	22			
3.2 Installation:				
3.3 Pressure Reducing Valves				
3.4 Backflow Preventers				
4.0DRAINAGE PIPES AND FITTINGS - INSIDE BUILDING				
4.1 Underground Sanitary and Storm				
1. Transite soil pipe with John Mansville ring-tite soil fittings CGSB-34-GP-22 (CSA approved).				
2. Class 4000 cast iron mechanical joint pipe and fittings with mechanical stainless steel couplings, CSA-B70-1971.				
3. PVC drain waste and vent pipe and pipe fittings certified to CAN/CSA-B181.2 sizes 100 mm (4") dia. to 900m (36") dia..				
4. ABS drain, waste and vent pipe and pipe fittings certified to to CAN/CSA-B181.1 for sizes 75 mm (3") dia.				
5. Profile (ribbed) PVC sewer pipe and fittings certified to CAN/CSA-B182.4 for storm sewers 200 mm (8") dia. to 600 mm (24") dia. only.				
4.2 Soil, Waste, and Vent Stacks, Drains and Rainwater Leaders Above Ground, 75 mm and larger:				
1. Transite soil pipe with John Mansville ring-tite soil fittings CGSB-34-GP-22 (CSA approved).				
2. Class 4000 cast iron mechanical joint pipe and fittings with mechanical stainless steel couplings, CSA-B70-1971.				
3. DWV copper with cast brass or wrought copper drainage fittings and solder joints (soldering to contain not more than 0.2% lead content)				
4. PVC drain waste and vent pipe and pipe fittings certified to CAN/CSA-B181.1 and CAN/CSA-B181.2 (solvent weld only).				
5. Note: all PVC or ABS type piping to be used above ground shall be confirmed to be acceptable by the authority having jurisdiction. If acceptable and used, it shall be provided with U.L.C. listed and approved fire stop device at all penetrations of any fire separation.				
6. Plastic piping shall not be used in a ceiling space used as a return air plenum.				
4.3 Soil, Waste, and Vent Stacks, Drains 65 mm dia. and smaller:				
1. DWV copper piping with wrought copper solder joints for above grade. (Below grade, provide type 'L' or type 'K' copper piping).				
2. ABS drain, waste and vent pipe and pipe fittings certified to CAN/CSA-B181.1. where enclosed in walls.				
3. Note: all PVC or ABS type piping to be used above ground shall be confirmed to be acceptable by the authority having jurisdiction. If acceptable and used, it shall be provided with U.L.C. listed and approved fire stop device at all penetrations of any fire separation.				
4. Plastic piping shall not be used in a ceiling space used as a return air plenum.				
4.4Pipe Installation				
1. For pipe installation, refer to Section 15000.				
2. For excavation and backfilling, refer to Section 15000.				
3. Class 4000 mechanical joint cast iron soil pipe and mechanical joint couplings shall be of one manufacturer.				
4. Lay underground piping straight and true to line and grade with uniform invert. Spigot ends on groove shall point in direction of flow.				
5. Minimum underground pipe size shall be 75 mm (3").				
5.0CLEANOUTS				
5.1Install cleanouts in storm and sanitary drainage piping in the following locations:				
1. Building drains leaving building on upstream side of exterior wall.				
2. Changes of direction more than 45°.				
3. On horizontal branches and main drains at intervals not exceeding 15 meters (50') for 100 mm (4") or smaller, and 30 meters (100') for 150 mm (6") and larger.				
4. Drain from sink, kitchen piping, or grease waste piping, at intervals not exceeding 6 meters (20') for all sizes of pipe.				
5. Ends of all horizontal drainage lines.				
6. Base of soil or waste stocks and rainwater leaders.				
7. Where required by Building and Plumbing Codes.				
5.2General Requirements:				
1. Cleanouts shall be full for pipes up to 100 mm (4") and not less than 100 mm (4") for larger sizes.				
2. Cleanouts shall be of the following types:				
-Barrett type fitting with bolted coverplate and gasket;				
-Fitting with threaded plug.				
-Cleanout ferrules intalled in 'Y' or extended 'Y'.				

MECHANICAL SPECIFICATIONS (CONT'D)

- 5.3 Products:
1. Acceptable manufacturers: Jay R. Smith, Mifab, Zurn, Watts (Jay R. Smith noted for reference).

2. Outside areas – heavy duty – Series 4250.

3. Unfinished concrete – Series 4250.

4. Lino tiled area – Series 4160 (square), Series 4140 (round).

5. Ceramic tile floor – Series 4160 (square), Series 4140 (round).

6. Terrazzo tile floor – Series 4200 (square), Series 4180 (round).

7. Latex deck/membrane floor systems – Series DX4343 (round).

8. Carpeted area – Series 4160 (square), Series 4140 (round).

9. Cleanouts shall be Duco cast iron with secured nickel bronze top.
- 5.4 Installation
1. Locate cleanouts to be readily accessible with sufficient clearances for rodding and cleaning.

2. Extend cleanouts to finished floor or wall unless exposed in unfinished basement area, pipe tunnel, accessible crawl space, or mechanical room.

3. In wet floor area, extend cleanout to walls or provide with gasketted waterproof top.

4. Where cleanouts pass through waterproof floor or are installed in slabs on grade, provide clamping collar and clamp to membrane or provide lead flashing to suit.

5. On outside drains, bring cleanout to grade and anchor in concrete collar.

6. All cleanouts in finished areas shall be the same shape (square or round).

7. Cover cleanouts concealed behind finished walls with round chromed, bronze, or stainless access plate secured to cleanout with 6 mm ($\frac{1}{4}$ ") dia. counter sunk machine screw. Coverplate shall be sufficiently large for access and rodding. Install cleanout no more than 25mm (1") behind faces of finished walls.
- 6.0 DRAINS
- Unless otherwise specified on drawings, use the following:
- 6.1 F.D. – Floor Drain for heavy traffic– Watts Series FD–300, epoxy coated cast iron body with serrated clamping flange, adjustable collar and non–tilt (7") 178 mm diameter epoxy coated cast iron tractor gate.

6.2 F.D. – Floor Drain for finished spaces– Watts Series FD–100–C, epoxy coated cast iron body with serrated clamping flange, adjustable collar and non–tilt (6") 152 mm diameter nickel bronze strainer.

6.3 R.D. – Roof Drain – Watts Series RD–200–BED suitable for conventional roof systems, cast iron body roof drain with underdeck clamp bearing pan and aluminum dome. For I.R.M.A. construction type roof use Ancon Series RD–100–BED with aluminum dome (or as specified on floor plan).
- 6.4 Acceptable manufacturers: Jay R. Smith, Mifab, Zurn, Watts
- 7.0 MATERIALS INSIDE BUILDING
- 7.1 Gas Piping
- Entire natural gas installation shall conform to national standard of Canada CAN/CSA–B149.M86 natural gas installation code as prepared by Canadian Gas Association and in accordance with the latest local amendments. Piping shall be schedule 40 black carbon steel pipe complying with ASTM–A53. Fittings shall be either malleable iron or steel screwed fittings complying with ANSI–B16.3.
- A readily accessible manual shut–off valve shall be installed for each appliance and shall be of either lubricated plug, or eccentric type. All gas piping shall be painted yellow–orange by general contractor.
- 7.2 Refrigerant Piping
- Suction and liquid lines shall be type A.C&R copper with solder type fittings using 95/9 silver solder. Evacuate completed system with vacuum pump to ensure removal of moisture. Recharge with freon to manufacturer's specifications. Thoroughly check entire system with leak detector when under pressure and repair any leak.

INSULATION

- 1.0 GENERAL
- 1.1 Insulation shall be applied on clean, dry surfaces and only after tests and approvals required have been completed.

1.2 All pipe insulation shall be continuous through wall and ceiling openings and sleeves. Suitable fire stops shall be installed where required.

1.3 Insulation on all cold surfaces must be applied with a continuous, unbroken vapour seal.

- PLUMBING FIXTURES
- 1.1. Refer to drawing for plumbing fixture schedule.

1.2. Shock absorbers shall be Ancon SG certified.

1.3. Access panel shall be Ancon–Lehage L–1001 heavy duty access doors.

1.4. Watts and Zurn are acceptable alternatives.

1.5. Provide lavatory protective enclosures for the barrier free washroom(s). All clearances as required by code shall be maintained.
- COVERING AND INSULATION
- 1.1. Insulate all domestic hot and cold water piping and fittings and also horizontal storm drain for minimum six (6) metres from roof drains with 38 mm pre–moulded, low pressure, glass fibre insulation. Cover all insulation with a vapour barrier jacket adhered at longitudinal laps and joint seal strips with a suitable vapour barrier lap cement.

1.4 Hangers, supports, anchors, etc., that are secured directly to cold surfaces, must be adequately insulated and vapour sealed to prevent condensation.

1.5 All surface finishes shall be extended to protect all surfaces, ends, and raw edges of insulation.

1.6 All domestic hot and cold water piping shall be insulated.
- 2.0 PLUMBING AND PIPING INSULATION
- Pipe Insulation:Glass fibre insulation with factory applied jacket; Johns–Manville Micro–Lok 650 or approved equal.
- Jacket Exposed: Canvas Free – A vapour barrier jacket, consisting of a white glass fibre surface bonded to an aluminized film.
- Jacket Concealed: All Purpose – A vapour barrier jacket, consisting of a high intensity white kraft paper surface bonded to an aluminized film and reinforced with a glass fibre yarn.
- Fittings: Pre–moulded one piece PVC insulated fitting covers; Johns–Manville Zeston or approved equal.
- A. Domestic Cold Water:
Domestic Hot Water Supply:
Domestic Hot Water Return:
- Ambient Temperature

Pipe Size

Thickness
- Below 35°F

All

$\frac{1}{2}$ "
- Above 35°F

All

$\frac{1}{4}$ "
- B. Air conditioning unit runouts and drain lines
- All runouts from riser or main to the air conditioning units and air conditioning unit drain lines shall be installed with flexible foam, closed cell structure, plastic insulation; Johns–Manville Aerotube or approved equal.
- Pipe Size

Thickness
- Up to 3"

$\frac{1}{2}$ "
- 4" and Over

$\frac{3}{4}$ "
- Cuts and butt joints of insulation shall be joined by sealing with a waterproof vapour barrier adhesive.

- FIRE PROTECTION:
1. Provide new hand fire extinguishers in accordance with NFPA 10 and local authorities' sastisfaction.

Project:

MARY BROWN'S FAMOUS CHICKEN AND TATERS KILDONA CROSSING SHOPPING CENTRE 1615 REGENT AVENUE W. WINNIPEG, MB

Scale:

NTS

Date:

07/27/15

Drawn:

BK

Checked:

DF

Project No:

15–134

Drawing:

MECHANICAL SPECIFICATIONS (CONT'D)

Drawing no:

M1.4

FA

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Mechanical & Electrical Engineers

5200 DIXIE ROAD, SUITE 102 MISSISSAUGA, ONT. L4W 1E4 TEL : 905.238.6939 FAX : 905.238.6780

NO.

DATE

DESCRIPTION

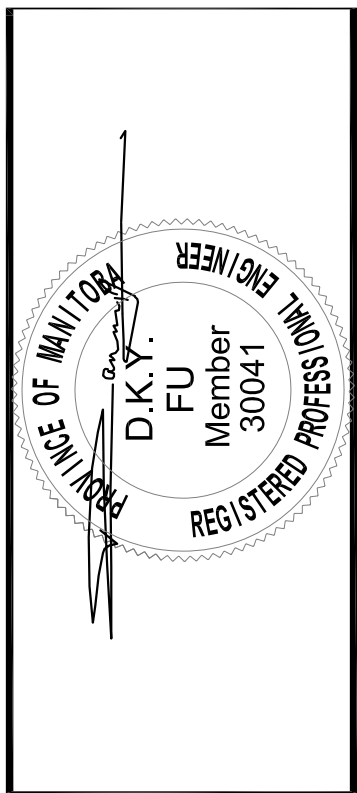
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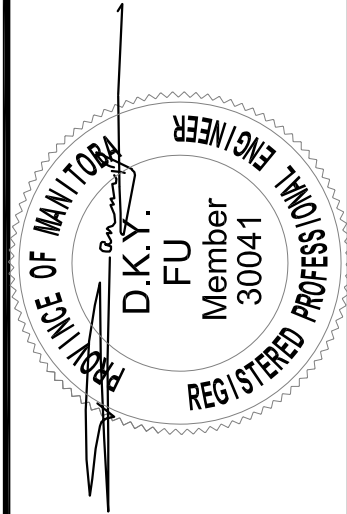
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07/27/15

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TAG	DESCRIPTION	TAG	DESCRIPTION		
WC-1	TOILET – FLOOR MOUNTED PRESSURE-ASSIST TANK American Standard #2377.100 'CADET ELONGATED' 'Right Height' 14" (356mm) HIGH' 'Pressure-Assist Low Consumption' Two Piece Tank Toilet, floor mounted, vitreous china, elongated syphon jet flush action bowl, 2-1/8" (54mm) fully glazed internal trapway, 10" x 12" (254mm x 305mm) large water surface, 'Speed Connect' P.A. tank complete, 6L (1.6 gal.) per flush, with cast sanitary guard on bowl for china to china tank assembly, bolt caps. (Minimum MaP Test Rating: 750 grams.) Centoco #AM820STS Toilet Seat, heavy duty anti-microbial solid plastic open front with cover, reinforced stainless steel check hinge, posts, washers and nuts, for elongated bowl. McGuire #H172BV Toilet Supply, C.P., polished brass, rigid horizontal integral copper sweat tube nipple 1/2" (12mm) I.D. x 5" (127mm) long, all brass 1/4 turn ball valve angle stop with combination V.P. loose key handle, escutcheon and flexible copper riser. Provide Floor Flange, flange bolts and gasket. As per ADA, toilet seat lid is provided if plumbing tank are directly behind the toilet to reduce the chance of injury and imbalance caused by leaning back against the tank.	LAV-2	BASIN – WALL HUNG (BARRIER FREE DESIGN & GENERAL USE) FOR TIGHT SPACE AREAS. AMERICAN STANDARD 'MURRO' #0954.000 BASIN, 4" (102MM) CENTRES, 21-1/4"x22"x5 – 7-1/2" (540MM x 559MM x 127MM – 191MM) DEEP, WALL HUNG, VITREOUS CHINA, REAR OVERFLOW, FOR CONCEALED ARM SUPPORT. CHICAGO FAUCETS #802-V-XK FAUCET, C.P. 4" (102MM) C.C., SOLID CAST BRASS LEAD-FREE BODY, ¼ TURN CERAMIC DISC VALVE CARTRIDGES, WITH VANDAL-RESISTANT 8.3 LPM (2.2 GPM) MAX. FLOW PRESSURE COMPENSATING AERATOR OUTLET AND CAST BRASS LEVER HANDLES. MCGUIRE #155A DRAIN, C.P., CAST BRASS 1 PC. TOP, OPEN GRID WITH 17GA. (1.5MM), 1-¼" (32MM) TAILPIECE. MCGUIRE #H170BV SUPPLIES, C.P., POLISHED BRASS, RIGID HORIZONTAL INTEGRAL COPPER SWEAT TUBE NIPPLES, ½" (12MM) I.D. x5" (127MM) LONG, ALL BRASS ¼ TURN BALL VALVE ANGLE STOPS WITH COMBINATION V.P. LOOSE KEY HANDLES, ESCUTCHEONS AND S.S. BRAIDED FLEXIBLE RISERS. MCGUIRE #8872C-17T 'P' TRAP, C.P., 17 GAUGE (1.5MM), BRASS ADJUSTABLE BODY, 1-¼" (32MM) AND ESCUTCHEON. SMITH SERIES #0700-27 CARRIER, WITH STEEL PIPE LEGS, BLOCK BASE FEET SUPPORT AND EXTENDED CONCEALED ARMS. (FOR NARROW WALL INSTALLATION PROVIDE 'Z' TYPE SLEEVE FOR ARMS.)		
WC-2	TOILET – FLOOR MOUNTED PRESSURE-ASSIST TANK (BARRIER FREE DESIGN) American Standard #2377.100 'CADET ELONGATED' 'Right Height' 16-1/2" (420mm) HIGH' 'Pressure-Assist Low Consumption' Two Piece Tank Toilet, floor mounted, vitreous china, elongated syphon jet flush action bowl, 2-1/8" (54mm) fully glazed internal trapway, 10" x 12" (254mm x 305mm) large water surface, 'Speed Connect' P.A. tank complete, 6L (1.6 gal.) per flush, with cast sanitary guard on bowl for china to china tank assembly, bolt caps. (Minimum MaP Test Rating: 750 grams.) Centoco #AM820STS Toilet Seat, heavy duty anti-microbial solid plastic open front with cover, reinforced stainless steel check hinge, posts, washers and nuts, for elongated bowl. McGuire #H172BV Toilet Supply, C.P., polished brass, rigid horizontal integral copper sweat tube nipple 1/2" (12mm) I.D. x 5" (127mm) long, all brass 1/4 turn ball valve angle stop with combination V.P. loose key handle, escutcheon and flexible copper riser. Provide Floor Flange, flange bolts and gasket. As per ADA, toilet seat lid is provided if plumbing tank are directly behind the toilet to reduce the chance of injury and imbalance caused by leaning back against the tank.	JS	MOP SINK – FLOOR MOUNTED – PRECAST TERRAZZO – TWO HANDLE FAUCET Stern Williams MTB 2424 Mop Sink, 24" x 24" x 10" (610mm x 610mm x 254mm) deep, floor mounted, precast terrazzo and Integral Cast Brass Drain with S.S. strainer 3" (75mm) outlet. Chicago Faucets #305VB-R-XK-Hose Faucet, C.P. 8" (203mm) C.C., wall mounted, solid cast brass leadfree body, 1/4 turn ceramic disc valve cartridges, cast brass lever handles, body mounted vacuum breaker, integral stops, 36" (915mm) hose and hanger. Stern Williams #A-20 Bumper Guards, Aluminum. Stern Williams #T-40 S.S. Mop Hanger, triple. Stern Williams #TC-3 Mop Sink Drain Gasket, connection for 3" (75mm) pipe. Stern Williams #BP S.S. Back Splash Panels, on two sides. Provide 'p' Trap.		
LAV-1	BASIN – WALL HUNG AMERICAN STANDARD 'LUCERNE' #0355.012 BASIN, 4" (102MM) CENTRES, 20-½"x18-¼"x8-⅛" (521MM x 464MM x 206MM) DEEP, WALL HUNG, VITREOUS CHINA, SPLASH BACK, FRONT OVERFLOW, SELF-DRAINING DECK, FOR CONCEALED ARM SUPPORT. CHICAGO FAUCETS #802-V-XK FAUCET, C.P. 4" (102MM) C.C., SOLID CAST BRASS LEAD-FREE BODY, ¼ TURN CERAMIC DISC VALVE CARTRIDGES, WITH VANDAL-RESISTANT 8.3 LPM (2.2 GPM) MAX. FLOW PRESSURE COMPENSATING AERATOR OUTLET AND CAST BRASS LEVER HANDLES. MCGUIRE #155A DRAIN, C.P., CAST BRASS 1 PC. TOP, OPEN GRID WITH 17GA. (1.5MM), 1-¼" (32MM) TAILPIECE. MCGUIRE #H170BV SUPPLIES, C.P., POLISHED BRASS, RIGID HORIZONTAL INTEGRAL COPPER SWEAT TUBE NIPPLES, ½" (12MM) I.D. x5" (127MM) LONG, ALL BRASS ¼ TURN BALL VALVE ANGLE STOPS WITH COMBINATION V.P. LOOSE KEY HANDLES, ESCUTCHEONS AND FLEXIBLE COPPER RISERS. MCGUIRE #8872C-17T 'P' TRAP, C.P., 17 GAUGE (1.5MM), BRASS ADJUSTABLE BODY, 1-¼" (32MM) AND ESCUTCHEON. SMITH SERIES #0700 CARRIER, WITH STEEL PIPE LEGS, BLOCK BASE FEET SUPPORT AND CONCEALED ARMS. (FOR NARROW WALL INSTALLATION PROVIDE 'Z' TYPE SLEEVE FOR ARMS.)	CO	CLEANOUTS – FLOOR CLEANOUT – FINISHED AREAS Jay R. Smith #4020 'Twis-To-Floor' Floor Cleanout, duco coated cast iron body and removable positive gasket seal closure plug, secured with stainless steel screws, C.O. cast in cover. (For water-proofed areas provide 'F-C' flange with flashing clamp) , scoriated secured round nickel bronze top.	FD	FLOOR DRAINS Jay R. Smith #2005 SERIES Floor Drain, all duco coated cast iron body, reversible flashing clamp with seepage openings, no-hub outlet hub adaptor duco Cast Iron.
PLBG FIXTURE & EQUIPMENT SCHED			NONE		
			-		



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Mechanical & Electrical Engineers

5200 DIXIE ROAD, SUITE 102
MISSISSAUGA, ONT. L4W 1E4

TEL : 905.238.6939
FAX : 905.238.6780

NO.

DATE

DESCRIPTION

BY

DF

1.

07/27/15

SUBMITTED FOR REVIEW/PERMIT

Project:

MARY BROWN'S FAMOUS CHICKEN AND TATERS KILDONA CROSSING SHOPPING CENTRE 1615 REGENT AVENUE W. WINNIPEG, MB

Drawing:

MECHANICAL SCHEDULES

Scale:

NTS

Date:

07/27/15

Drawn:

BK

Checked:

DF

Project No:

15-134

Drawing no:

M2.1

TAG	DESCRIPTION
	TRAP SEAL PRIMERS – ELECTRONIC – SERVING 1 TO 4 DRAINS SMS INC. #MPB-500 SMS Inc. Mini Trap Primer, To serve 1 to 4 drains provide Mini-Trap Primer Model #MPB500 for 115V or 24V AC power source electronic Trap Priming Manifold – Serve 1 To 4 Drains.
	WATER HAMMER ARRESTORS – PPP SC SERIES SMS INC. #SC Series Water Hammer Arrestors with brass piston in a type 'K' copper casing size according to manufacturer's recommendations chart below to eliminate water hammer and shock from piping system. Provide Water Hammer Arrestors on hot and cold water supplies to all quick valves, solenoids, and plumbing fixtures, and locate in an upright position between the last two fixtures on a line, or horizontally at the end of line closest to supply source. On projects exceeding five stories in height, provide water hammer arrestors on domestic water risers as follows. Locate arrestors at the end of riser opposite supply source. Arrestor shall be two pipe sizes larger than the riser is at the connection point, not exceeding the largest pipe size diameter in the riser water Hammer Arrestors.
	UNIVERSAL ACCESS DOOR – FOR WALLS AND CEILINGS Acudor #UF-5000 UF-5000 Access Doors, 14 GA. (1.7mm) steel, baked enamel prime coat, continuous concealed hinge, with positive and self-opening screwdriver operated lock. Doors in tile walls shall be stainless steel and shall suit tile pattern. All other panels shall be prime painted steel. Minimum size of panels shall be 12" x 18" (300mm x 450mm). Wherever possible 24" x 24" (600mm x 600mm) panels shall be used universal Flush Access Door – For Walls and Ceilings.

PLBG FIXTURE & EQUIPMENT SCHED

-

AIR BALANCE SCHEDULE

UNIT REF.	S.A CFM	R.A CFM	E.A CFM	O.A CFM	BALANCE CFM
RTU-1	1600	1600	-	400	+0
RTU-2	1600	1600	-	400	+0
MAU-1	-	-	-	2004	+2004
KEF-1	-	-	2186	-	-2186
EF-1,2,3	-	-	300	-	-300
TOTALS	3200	3200	2486	2804	-482

LEGEND

SYMBOL

DESCRIPTION

— — —

SANITARY DRAIN
BELOW FLOOR

—————

SANITARY DRAIN
ABOVE FLOOR

—————

DOM. COLD WATER

—————

DOM. HOT WATER

—————

DOM. HOT WATER RECIRC.

— V —

GAS LINE

— G —

GAS LINE

⌋

ELBOW DOWN

⌋

ELBOW UP

⌋

CONTROL VALVE

⌋

GATE VALVE

⌋ C.O.

CLEAN OUT

⌋ F.D

FLOOR DRAIN

⌋ HD

HUB DRAIN

⌋

SUPPLY DIFFUSER

⌋ T

THERMOSTAT

⌋

RETURN AIR GRILL

⌋

SUPPLY DUCT DN.

⌋

RETURN DUCT DN.

—————

NEW DUCTWORK

— G —

GAS LINE

HT

HIGH TEMPERATURE

●

PENDANT SPRINKLER

○

UPRIGHT SPRINKLER

●

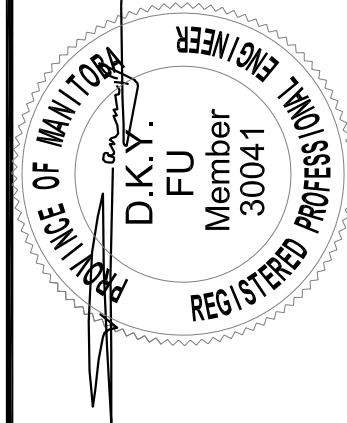
DRY TYPE SPRINKLER

●

SEMI RECESSED
SPRINKLER

⌋

AIR QUANTITY (CFM)
TYPE OF DIFFUSER
SIZE OF DIFFUSER



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5200 DIXIE ROAD, SUITE 102 TEL : 905.238.6939
MISSISSAUGA, ONT. L4W 1E4 FAX : 905.238.6780

NO.	DATE	DESCRIPTION	BY	DF
1.	07/27/15	SUBMITTED FOR REVIEW/PERMIT		

Project:	Scale: NTS	Date: 07/27/15	Drawn: BK	Checked: DF	Project No: 15-134	Drawing no: M2.2
MARY BROWN'S FAMOUS CHICKEN AND TATERS KILDONIA CROSSING SHOPPING CENTRE 1615 REGENT AVENUE W. WINNIPEG, MB			MECHANICAL SCHEDULES & LEGEND			

PLUMBING FIXTURE AND EQUIPMENT SCHEDULE									
ITEM #	QTY	FIXTURE	INDIRECT WASTE	DIRECT WASTE	VENT	COLD WATER	HOT WATER	GAS	REMARKS
WC	2	WATER CLOSET	—	3"	1 1/2"	1/2"ø	—	—	—
39	2	LAVATORY	—	1 1/2"	1 1/2"	1/2"ø	1/2"ø	—	—
GI	1	GREASE INTERCEPTOR	—	3"(2)	1 1/2"(2)	—	—	—	—
—	3	HAND SINK	—	1 1/2"	1 1/2"	1/2"ø	1/2"ø	—	—
1	1	3—COMP SINK	—	—	—	1/2"ø	—	—	SITE VERIFY REQUIREMENTS
19	2	FRYER	—	—	—	—	—	3/4"ø	245 CFH TOTAL; SITE VERIFY CAPACITY
37	1	MOP SINK	—	3"	1 1/4"	1/2"ø	1/2"ø	—	—
HWT	1	HOT WATER TANK	3/4"	—	—	3/4"ø	3/4"ø	3/4"ø	199 CFH
RTU	2	ROOF TOP UNIT	—	—	—	—	—	—	108 CFH; EXISTING; SITE VERIFY CAPACITY
MAU	1	MAKE—UP AIR UNIT	—	—	—	—	—	—	240 CFH
10	3	COOKER	—	—	—	—	—	—	ELECTRIC
* THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING BACKFLOW PREVENTORS FOR PORTABLE WATER SUPPLY TO ALL WHERE REQUIRED BY LOCAL MUNICIPALITY, MUNICIPAL INSPECTOR AND/OR EQUIPMENT SUPPLIER.									
** PROVIDE CHROME ANGLE STOP VALVE @ EACH CONNECTION TO EQUIPMENT.									

FAN SCHEDULE (NEW)											
FAN No.	AREA SERVED	MANUFACTURER	MODEL No.	CFM	RPM	HP	SP "WG	MOTOR HP	POWER	WEIGHT LB.	SPECIAL ACCESSORIES
KEF—1	KITCHEN	CAPTIVEAIRE	NCA16HPFA	2186	1289	1.5	1.5	—	208/3/60	149	*NOTE 1; INTERLOCK WITH MAU, NFPA 96, UL 726 RATED GREASE EXHAUST
EF—1	WASHROOMS	GREENHECK	SP—B110	100	950	80W	0.5	—	115/1/60	41	*C/W TIMER
EF—2	WASHROOMS	GREENHECK	SP—B110	100	950	80W	0.5	—	115/1/60	41	*C/W TIMER
EF—3	JANITOR	GREENHECK	SP—B110	100	950	80W	0.5	—	115/1/60	41	*C/W TIMER
NOTE: KEF—1 INTERLOCK WITH MAU—1 1. PROVIDE BDD., HINGE KIT, ROOF CURBS, DISCONNECT SWITCH, DAMPER, BRACKETS .											

ROOFTOP UNIT SCHEDULE (EXISTING BY LANDLORD)													
UNIT #	AREA SERVED	MANUFACTURER & MODEL #	CFM	FRESH AIR	("WG) S.P.	H.P.	BLOWER H.P.	HEATING CAP.(MBH)	COOLING CAP.(TON)	ELECT.	MCA/MOCP	WEIGHT	REMARKS
RTU—1,2	MARY BROWN'S	LENNOX LGH048S4ES1Y	1600	400	0.5	—	1	INPUT 108 86 OUTPUT	4.0	208/3/60	24/35	—	EXISTING BY LANDLORD, REPLACE AIR FILTER. ADJUST ECONOMIZER AS REQUIRED. VERIFY SPECIFICATION
A) ROOF CURB B) PRESSURE SENSOR C) RETURN AIR DUCT STAT D) DUCT TYPE SMOKE DETECTOR E) 7—DAY PROG. T'STAT C/W LOCKABLE COVER F) TRAPPED COND. DRAIN G) ECONOMIZER H) WALL SLEEVE I) AIR FILTERS J) REFRIG.LINE KIT K) LOW AMB. KIT L) 7—DAY PROG. T'STAT M) CONCRETE PAD N) VIBRATION ISOLATOR SPRINGS													

DIRECT GAS—FIRED MAKE UP AIR UNIT SCHEDULE										
UNIT #	AREA SERVED	MANUFACTURER & MODEL #	CFM	("WG) S.P.	RPM	VOLTAGE	MOTOR	HEATING (MBH)	WEIGHT	REMARK
MAU—1	KITCHEN	CAPTIVE AIRE A1—D.250—G10	2004	0.5	1096	208/3/60	1.0	INPUT 239 220 OUTPUT	587 LBS.	*C/W DUCT T'STAT WITH REMOTE SET POINT ADJUSTER, ROOF CURB, MOTORIZED DAMPER

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Mechanical & Electrical Engineers

5200 DIXIE ROAD, SUITE 102
MISSISSAUGA, ONT. L4W 1E4
TEL : 905.238.6939
FAX : 905.238.6780

NO.

DATE

DESCRIPTION

1. 07/27/15

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BY

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Project:

MARY BROWN'S
FAMOUS CHICKEN AND
TATERS
KILDONA CROSSING
SHOPPING CENTRE
1615 REGENT AVENUE W.
WINNIPEG, MB

Scale:

NTS

Date:

07/27/15

Drawn:

BK

Checked:

DF

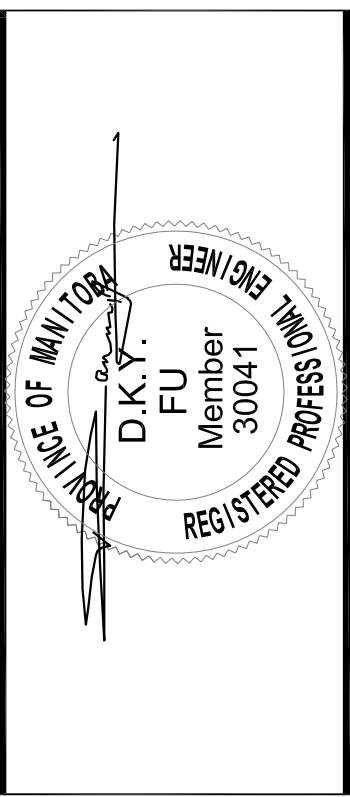
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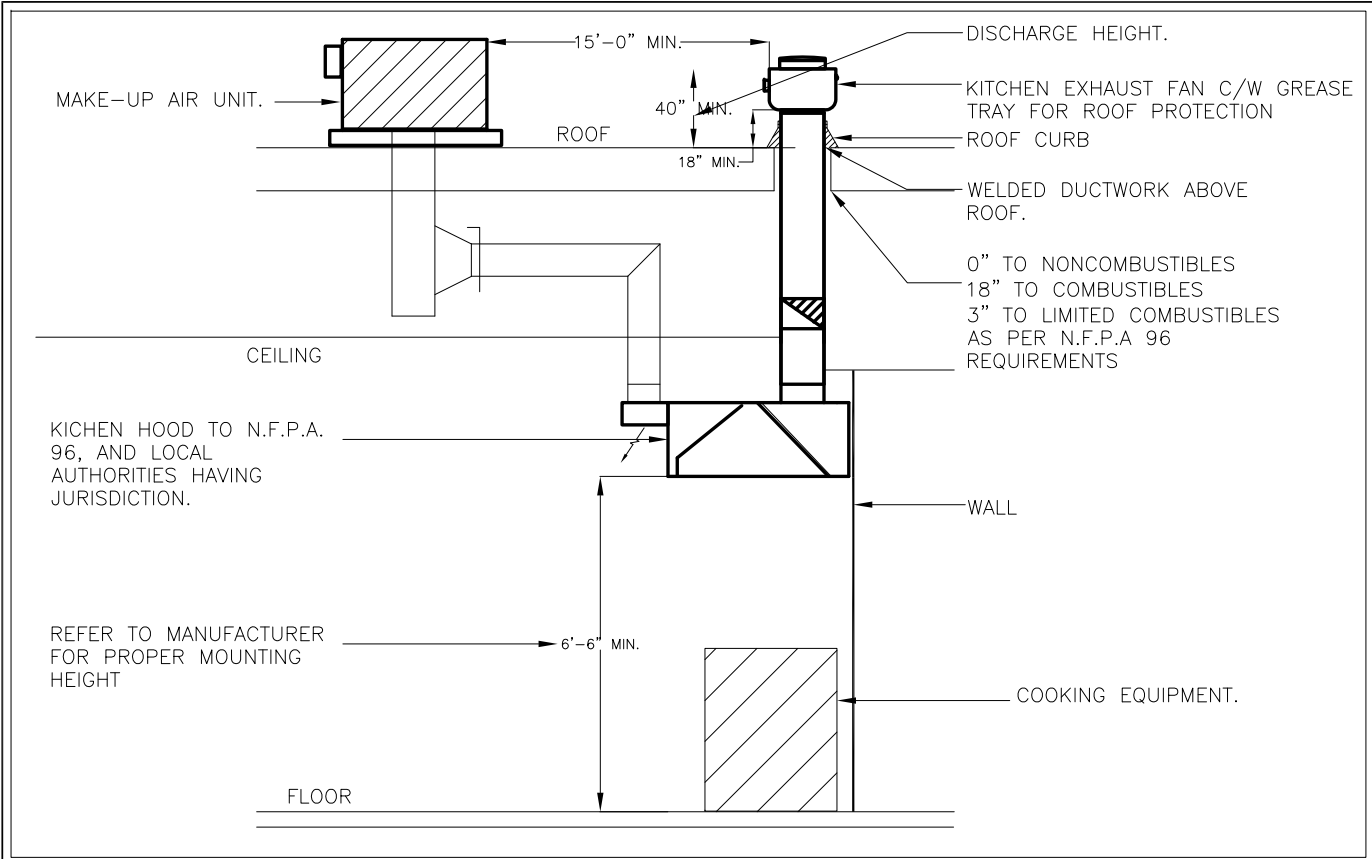
15—134

Drawing no:

M2.3

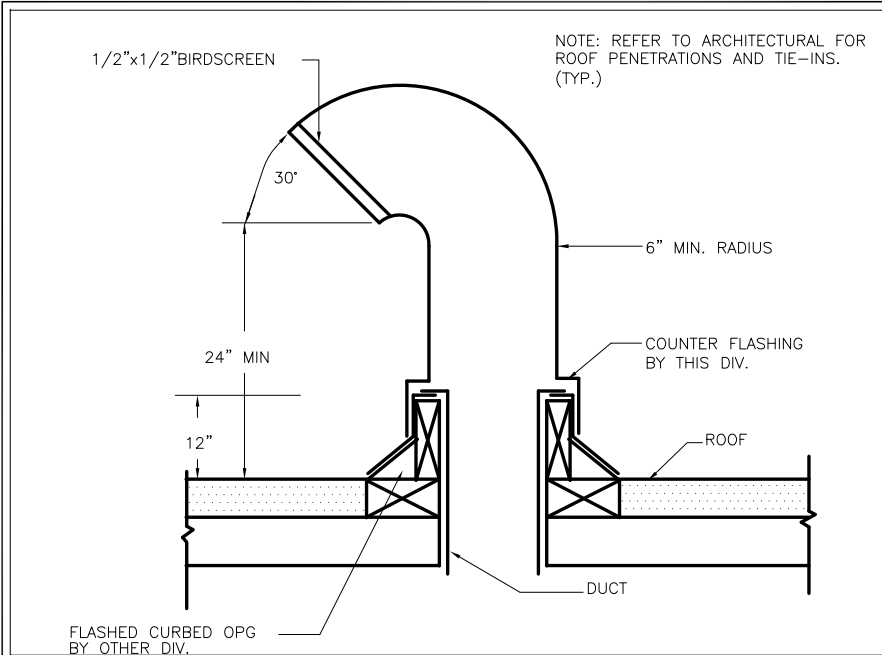
MECHANICAL
SCHEDULES (CONT'D)





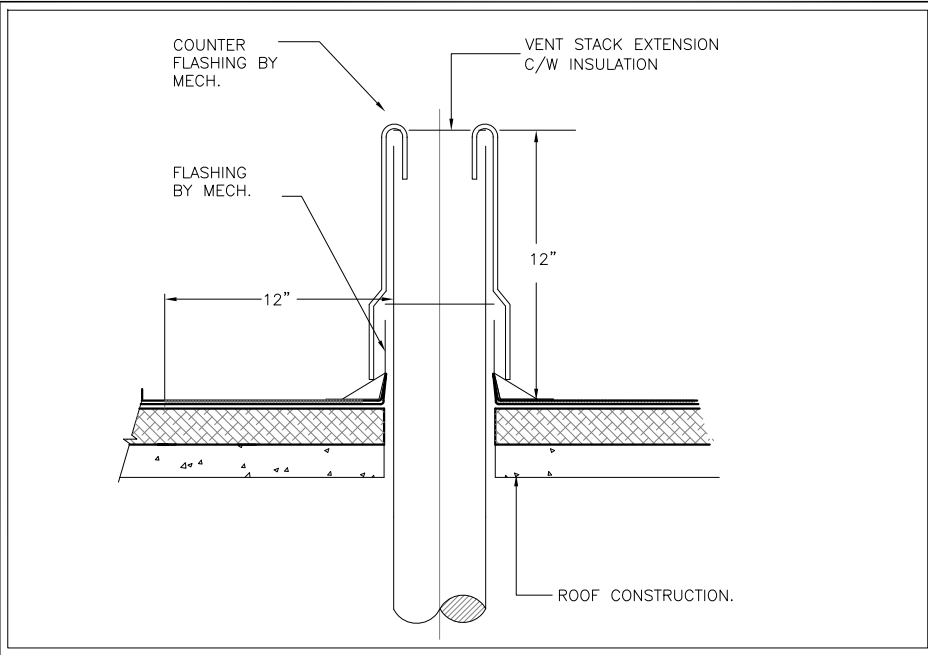
KITCHEN EXHAUST AND MAKE-UP AIR SYSTEMS

SCALE: NTS



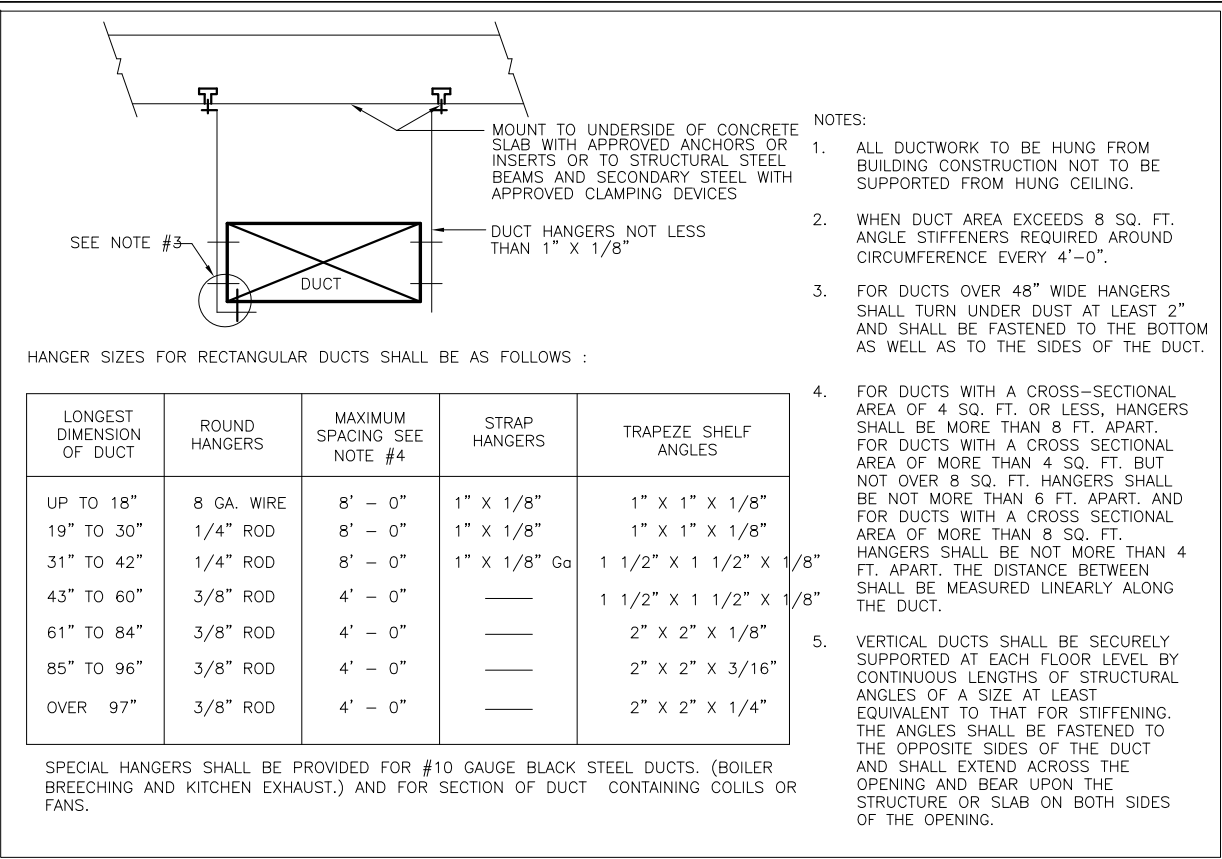
GOOSENECK DETAIL

SCALE: NTS



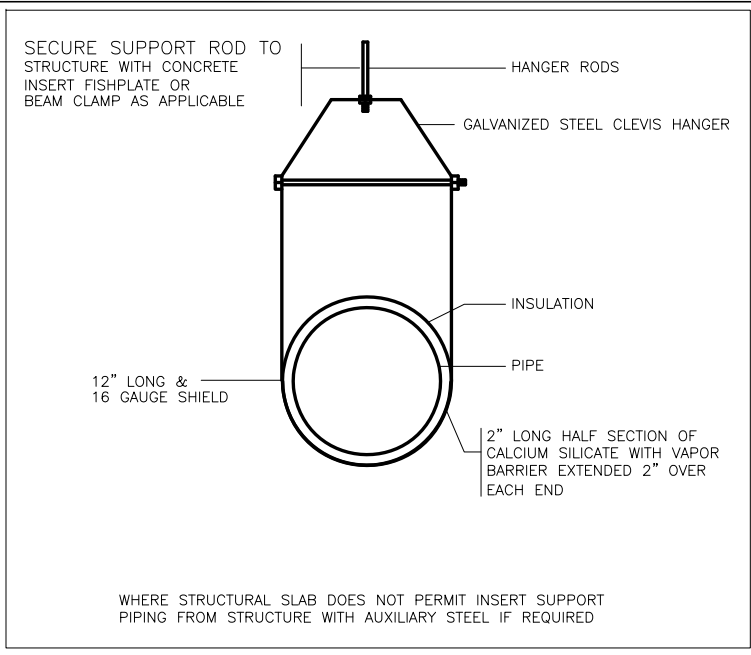
VENT THRU ROOF DETAIL

SCALE: NTS



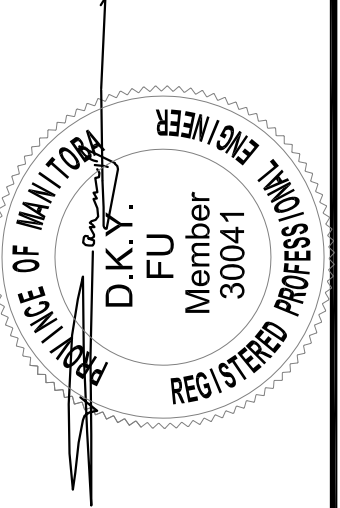
DUCTWORK SUPPORT DETAIL

SCALE: NTS



TYPICAL HANGERS FOR WATER PIPES

SCALE: NTS



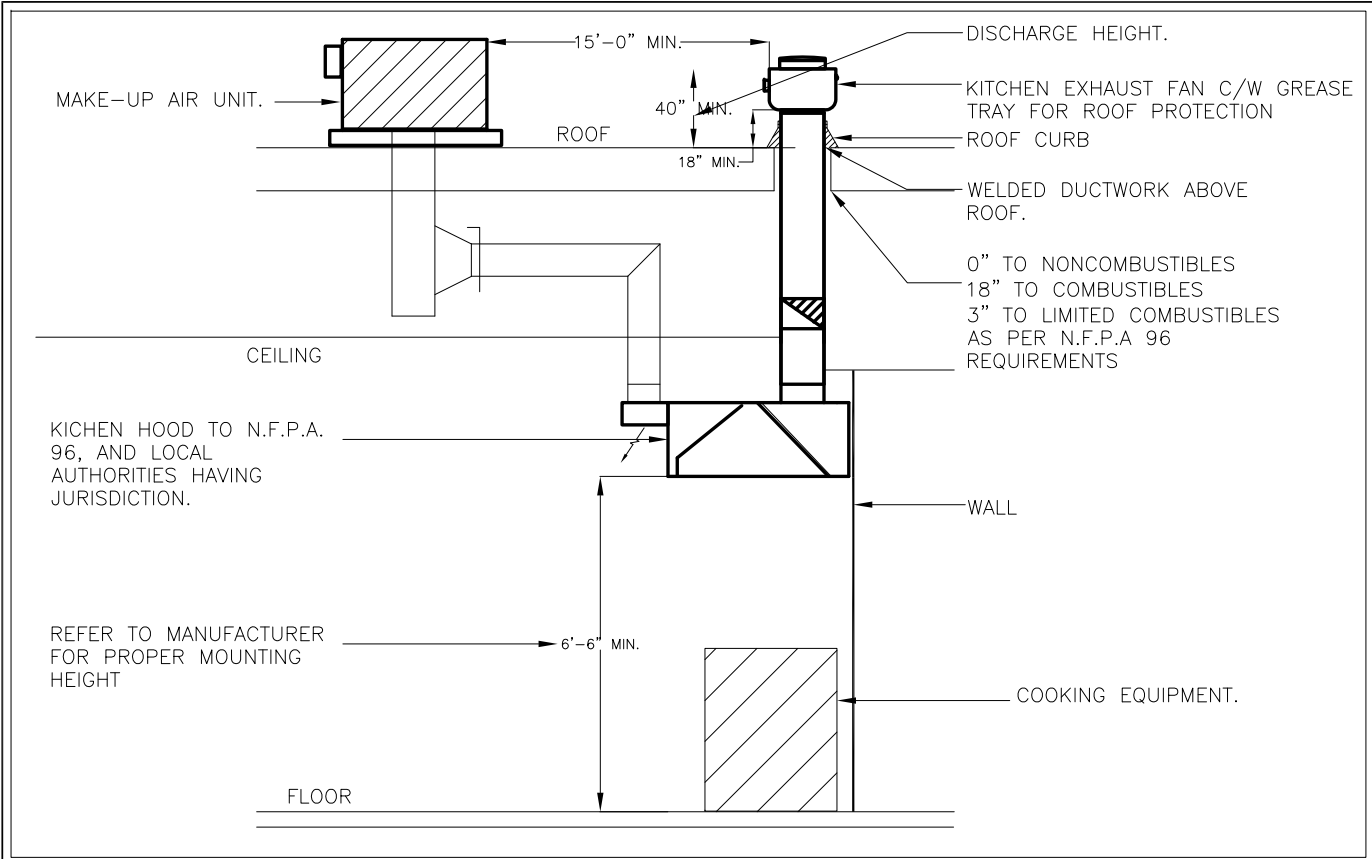
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NO.	DATE	DESCRIPTION	BY	DF
2.	07/27/15	SUBMITTED FOR REVIEW/PERMIT		

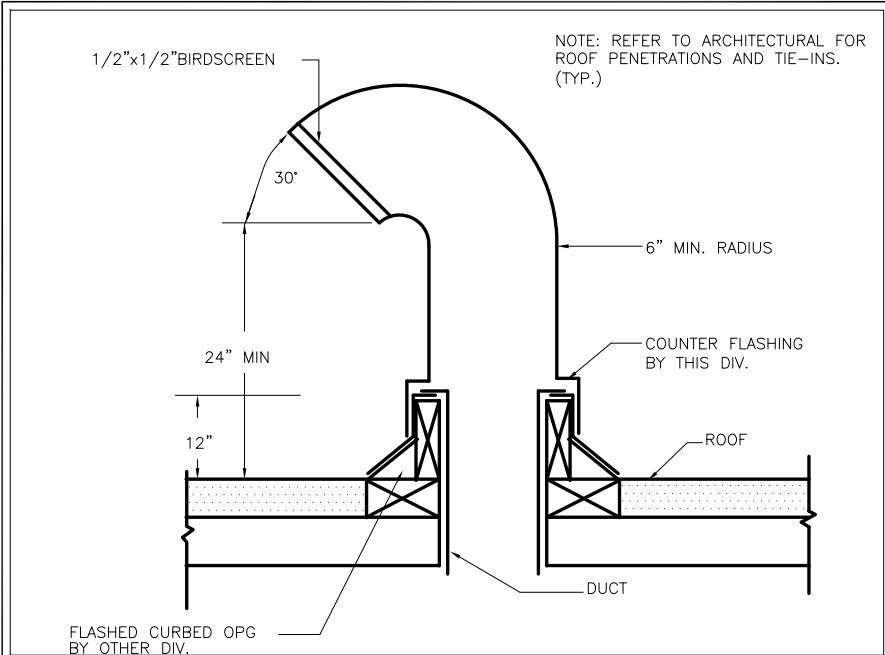
Project:	MARY BROWN'S FAMOUS CHICKEN AND TATERS	Scale:	NTS
	KILDONA CROSSING SHOPPING CENTRE	Date:	07/27/15
Drawing:	1615 REGENT AVENUE W. WINNIPEG, MB	Drawn:	BK
		Checked:	DF
		Project No:	15-134
		Drawing no:	M3.1

MECHANICAL DETAILS



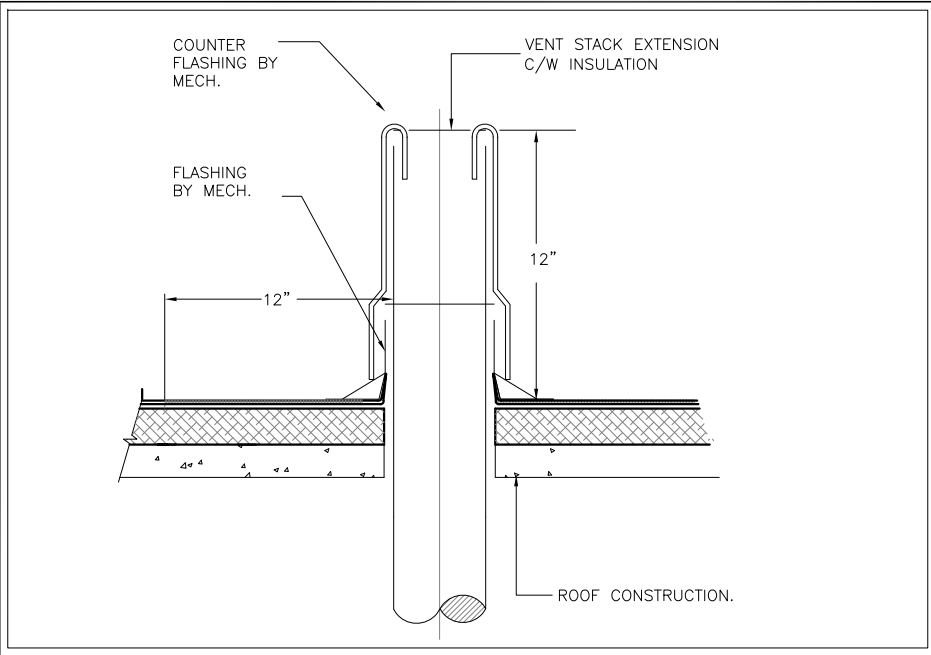
KITCHEN EXHAUST AND MAKE-UP AIR SYSTEMS

SCALE: NTS



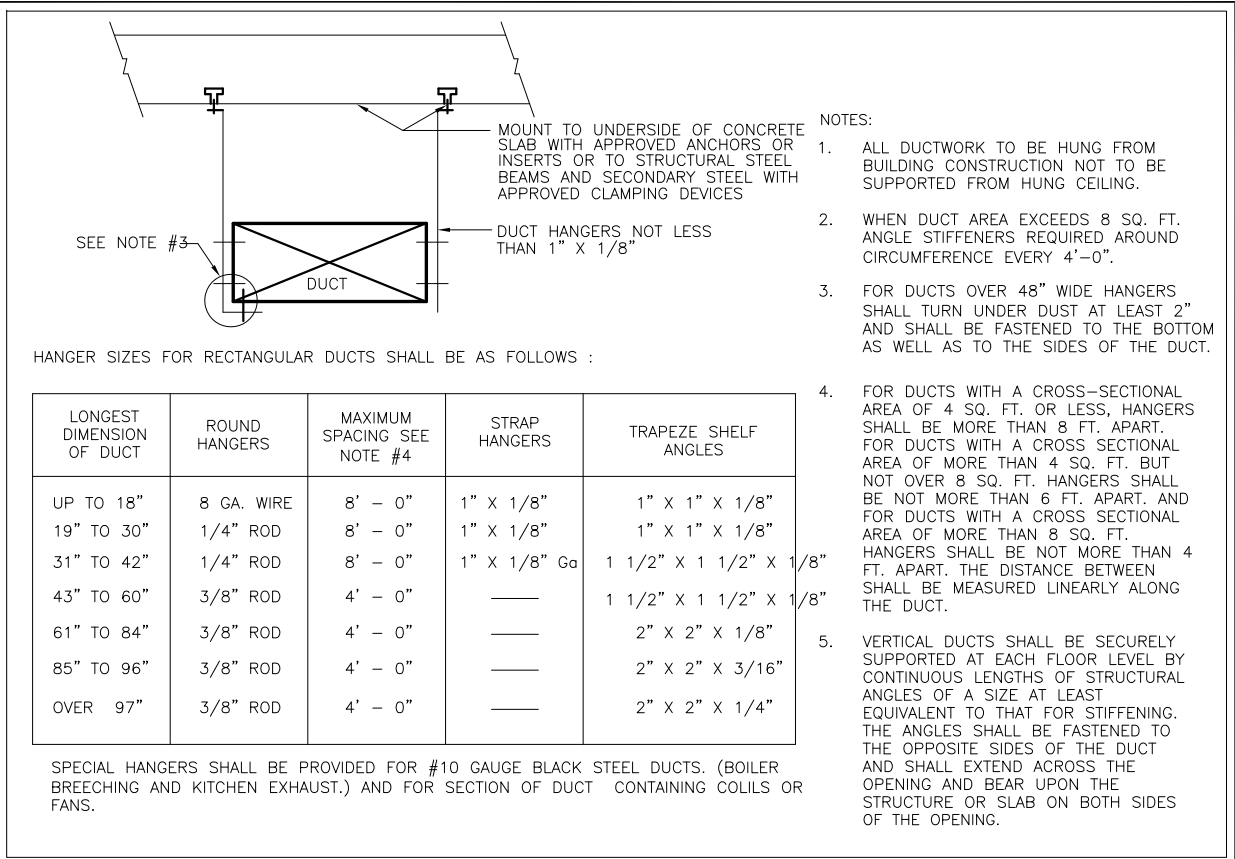
GOOSENECK DETAIL

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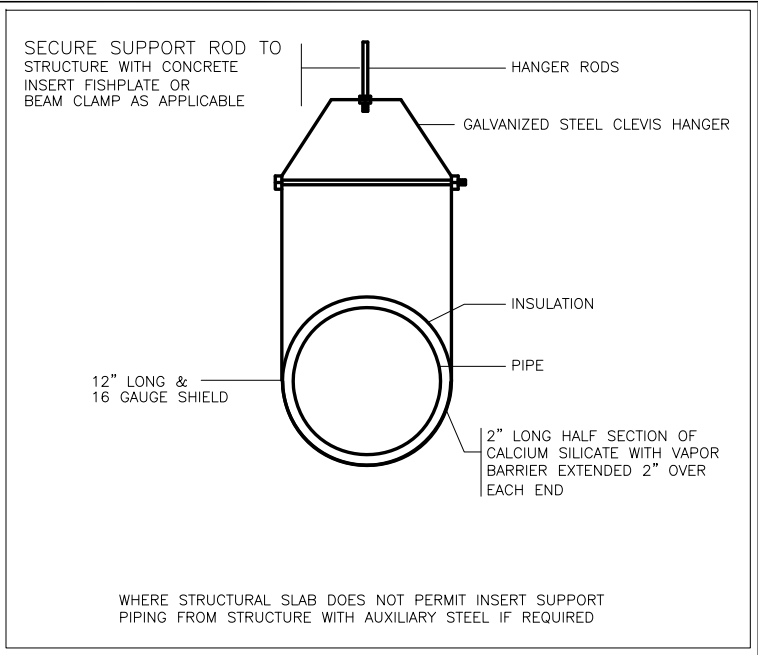
VENT THRU ROOF DETAIL

SCALE: NTS



DUCTWORK SUPPORT DETAIL

SCALE: NTS



TYPICAL HANGERS FOR WATER PIPES

SCALE: NTS

Project: MARY BROWN'S FAMOUS CHICKEN AND TATERS KILDONA CROSSING SHOPPING CENTRE 1615 REGENT AVENUE W. 1615 WINNIPEG, MB

Drawing: MECHANICAL DETAILS

Scale: NTS

Date: 07/27/15

Drawn: BK

Checked: DF

Project No: 15-134

Drawing no: M3.1

NO.

DATE

DESCRIPTION

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Signature _____

Date 07/27/15

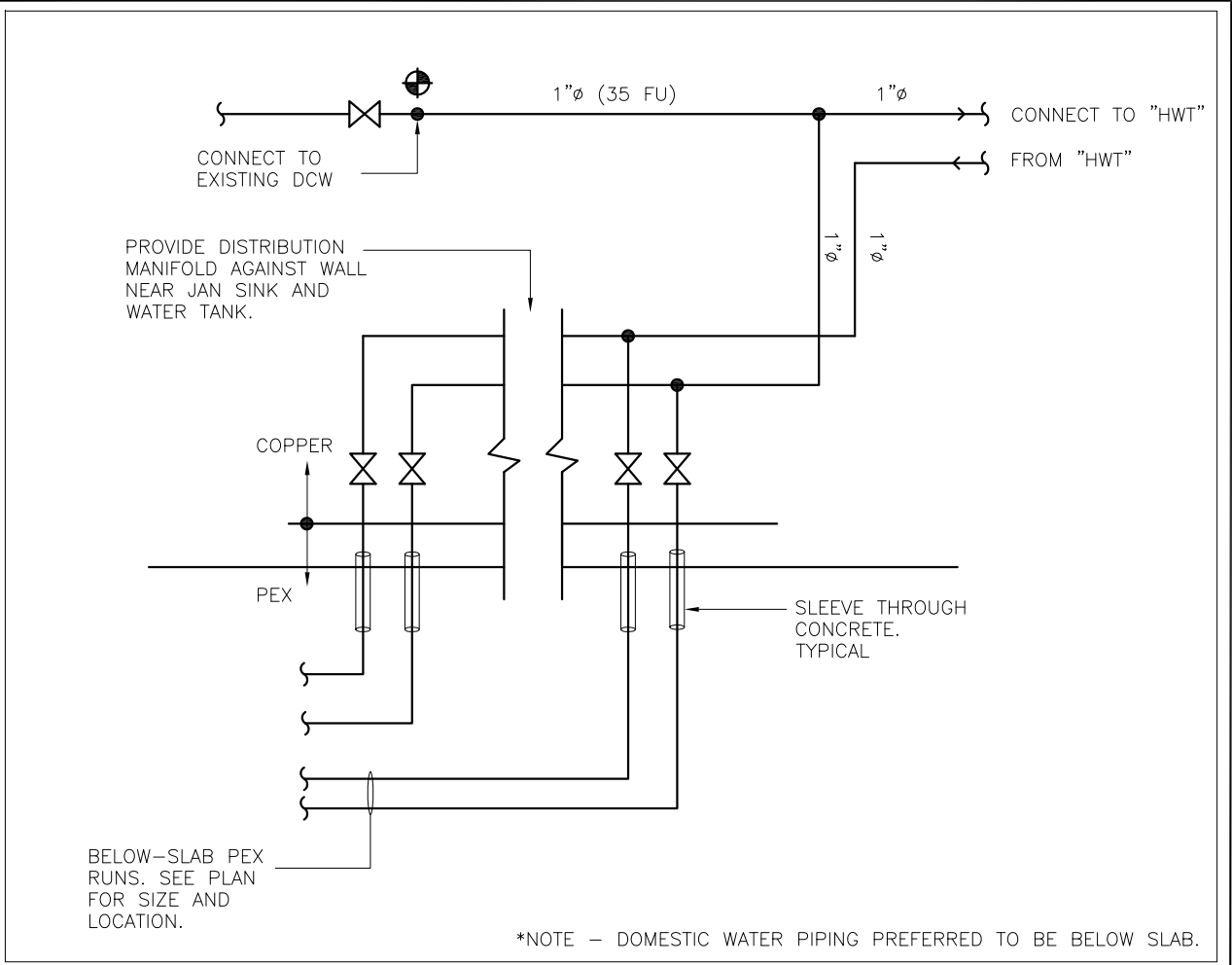
PERMIT NUMBER: P 09195

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PROFESSIONAL ENGINEER ALBERTA

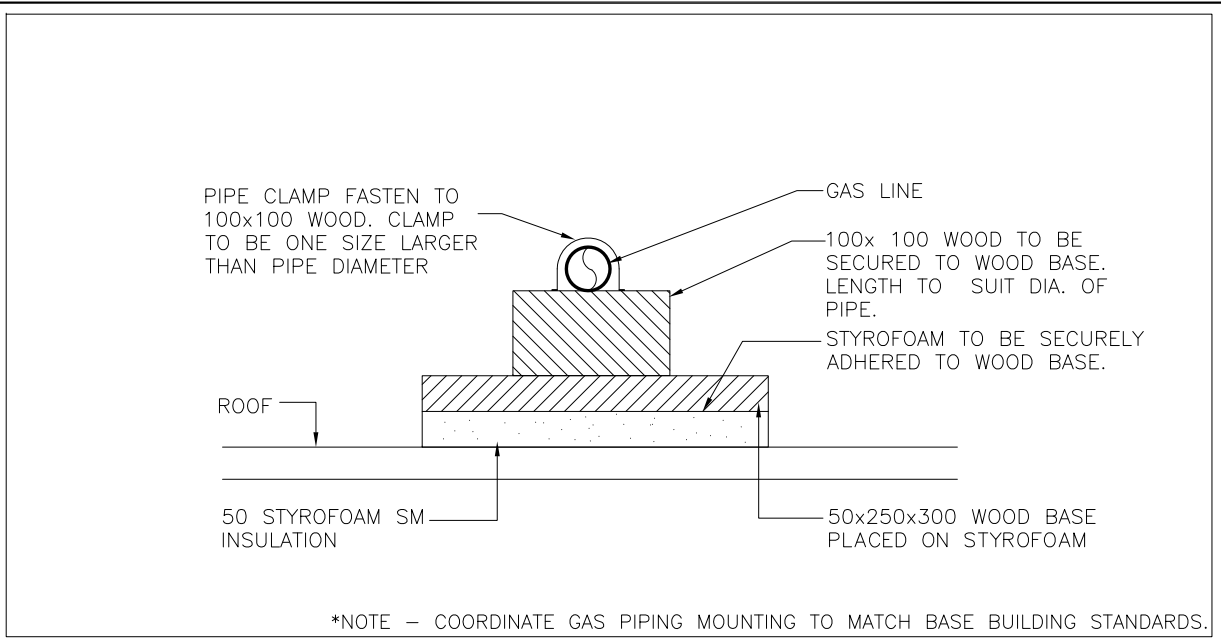
DANIEL K. FU

09909



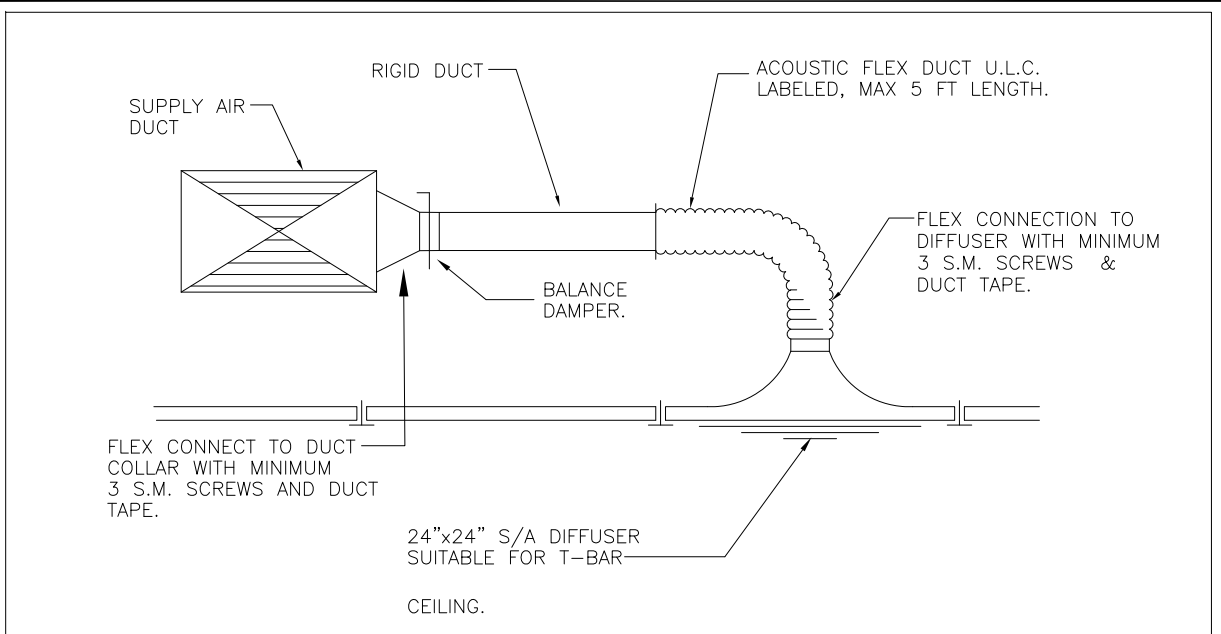
DOMESTIC WATER SCHEMATIC

SCALE: NTS



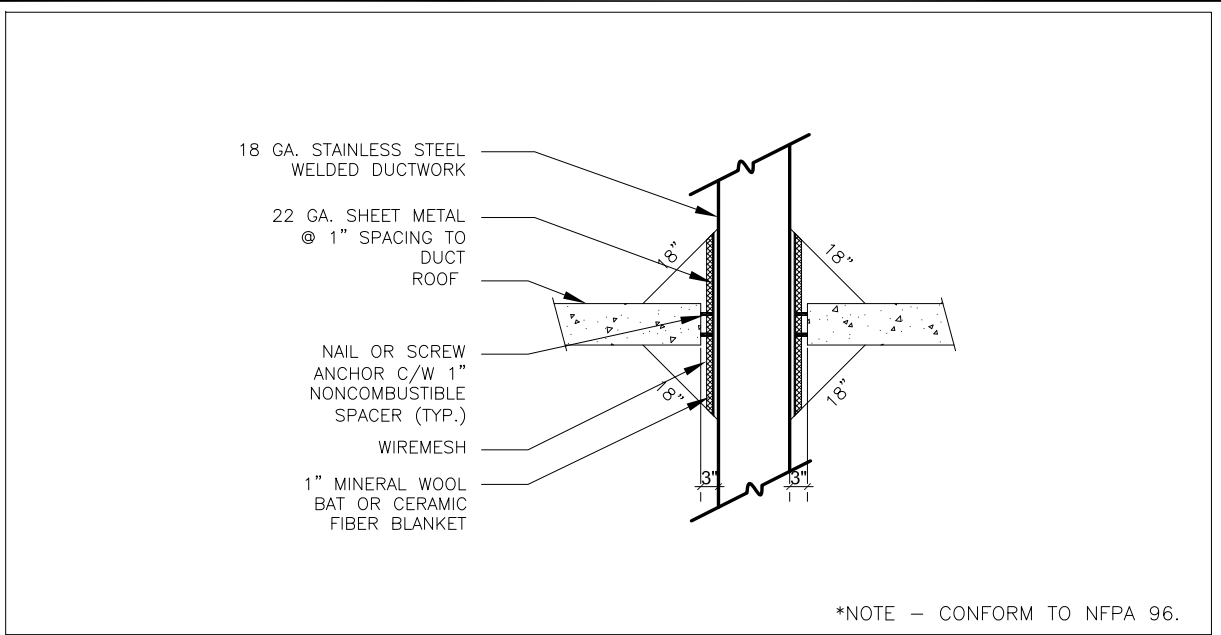
MOUNTING DETAIL OF GAS PIPING ON ROOF

SCALE: NTS



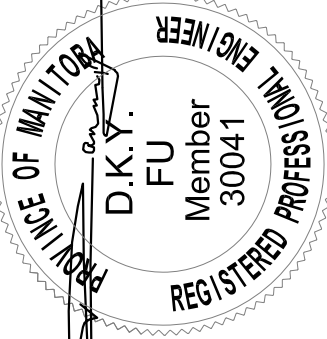
TYPICAL SUPPLY AIR DIFFUSER CONNECTION DETAIL

SCALE: NTS



KITCHEN EXHAUST ROOF PENETRATION DETAIL

SCALE: NTS

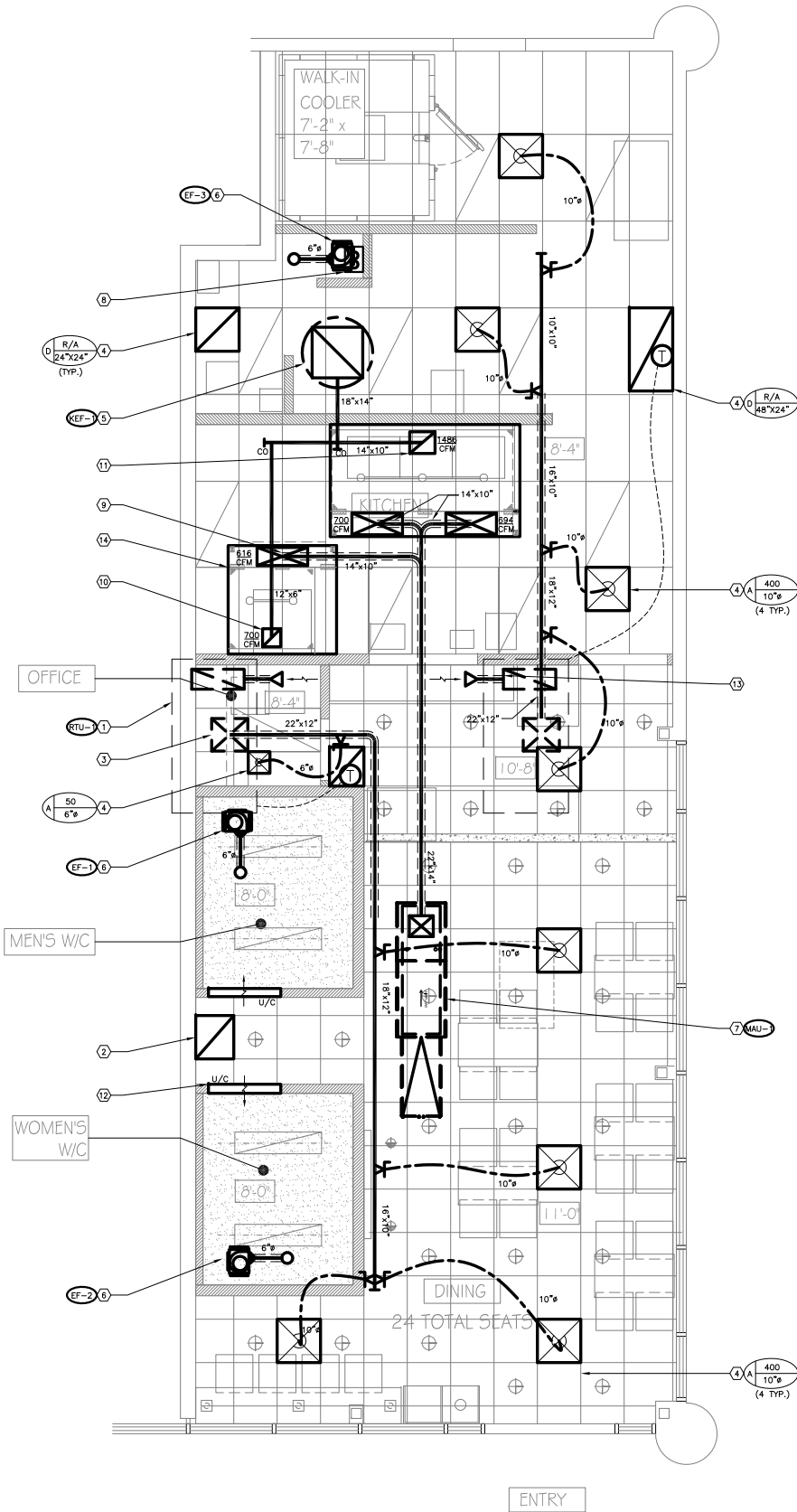


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NO.	DATE	DESCRIPTION	BY
1.	07/27/15	SUBMITTED FOR REVIEW/PERMIT	DF

Project:	Scale: NTS
Client:	Date: 07/27/15
Drawn: BK	Checked: DF
Project No: 15-134	Drawing no: M3.2
Client: MARY BROWN'S FAMOUS CHICKEN AND TATERS, KILDON CROSSING SHOPPING CENTRE, 1615 REGENT AVENUE W., WINNIPEG, MB	
Drawing: MECHANICAL DETAILS (CONT'D)	



- NOTES: HVAC & SPRINKLER**
- EXISTING ROOFTOP UNIT BY L/L TO REMAIN. CONTRACTOR TO VERIFY EXACT LOCATION, ORIENTATION AND SPECIFICATIONS. SYSTEM OPERATION & REPLACE AIR FILTER AS REQUIRED. (2 TYP.)
 - SUPPLY & INSTALL NEW 7 DAY PROGRAMMABLE HEATING/COOLING THERMOSTAT C/W PROVIDE LOCKABLE COVER. (TYP.)
 - CONNECT NEW S.A. & R.A. DUCTS TO EXISTING RTU'S DUCT RISERS AS REQUIRED. (TYP.)
 - SUPPLY AND INSTALL NEW GRILLES & DIFFUSERS AS NOTED. (TYP.)
 - SUPPLY AND INSTALL NEW KITCHEN EXHAUST FAN ON ROOF. LOCATE FAN 10' FROM ANY FRESH AIR INTAKE. INSTALL KITCHEN EXHAUST DUCTWORK AS PER NFPA96 (ABOVE AND BELOW ROOF) AND PROVIDE CLEANOUTS EVERY CHANGE OF DIRECTION AS REQUIRED BY NFPA 96.
 - SUPPLY AND INSTALL NEW WASHROOM & MOP SINK EXHAUST FAN. RUN 6" EXHAUST DUCT UP THRU ROOF C/W EXTERNAL INSULATION, VAPOUR BARRIER. VERIFY EXACT LOCATION ON SITE. (TYP.)
 - SUPPLY AND INSTALL NEW MAKEUP AIR UNIT ON ROOF C/W ROOF CURB.
 - PROVIDE 3" AIR INTAKE AND 4" EXHAUST THROUGH ROOF TO SERVE NEW WALL MOUNTED WATER HEATER. INSTALL AS PER MANUFACTURER'S REQUIREMENTS.
 - NEW MAKE-UP AIR DUCT DN. TO MAKE-UP AIR PLENUM. (TYP.)
 - NEW 12"x6" KITCHEN EXHAUST DUCT DN. TO KITCHEN EXHAUST HOOD'S OPENING.
 - NEW 14"x10" KITCHEN EXHAUST DUCT DN. TO KITCHEN EXHAUST HOOD'S OPENING.
 - 3/4" UNDER CUT WASHROOM DOOR FOR MAKE-UP AIR. (TYP.)
 - NEW 22"x12" OPEN-ENDED R.A. DUCT C/W ACOUSTIC LINING & WIREMESH. (TYP.)
 - SUPPLY AND INSTALL NEW ULC LISTED KITCHEN EXHAUST HOOD, EQUAL TO CAPTIVE AIRE 4824 SERIES. COORDINATE WITH MANUFACTURER PRIOR TO INSTALLATION (TYP. 2)
- NOTE:**
- VERIFY WITH LANDLORD'S REPRESENTATIVE THE SCOPE OF LANDLORD AND TENANT CONTRACTOR'S WORK BEFORE PRICING.
 - COORDINATE ALL ROOF PENETRATIONS WITH LANDLORD AS REQUIRED.
 - ALL MECHANICAL GAS HEATING EQUIPMENT SHALL COMPLETE WITH SEALED COMBUSTION INTAKE/EXHAUST PIPING AND CONCENTRIC VENT TERMINATION KIT.
 - ALL DUCTWORK TO BE MOUNTED AS HIGH AS POSSIBLE. CONTRACTOR TO VERIFY EXACT LOCATION ON SITE AS REQUIRED.
 - CEILING R/A PLENUM SHALL CONFORM TO OBC, DIV. b CLAUSE 3.6.4.3. (1)(a).

Project:

MARY BROWN'S FAMOUS CHICKEN AND TATERS KILDONA CROSSING SHOPPING CENTRE 1615 REGENT AVENUE W. WINNIPEG, MB

Drawing:

MECHANICAL LAYOUTS

Scale:

1/8" = 1'-0"

Date:

07/27/15

Drawn:

BK

Checked:

DF

Project No:

15-134

Drawing no:

M4.1

NO.

DATE

DESCRIPTION

BY

DF

2.

07/27/15

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PERMIT TO PRACTICE

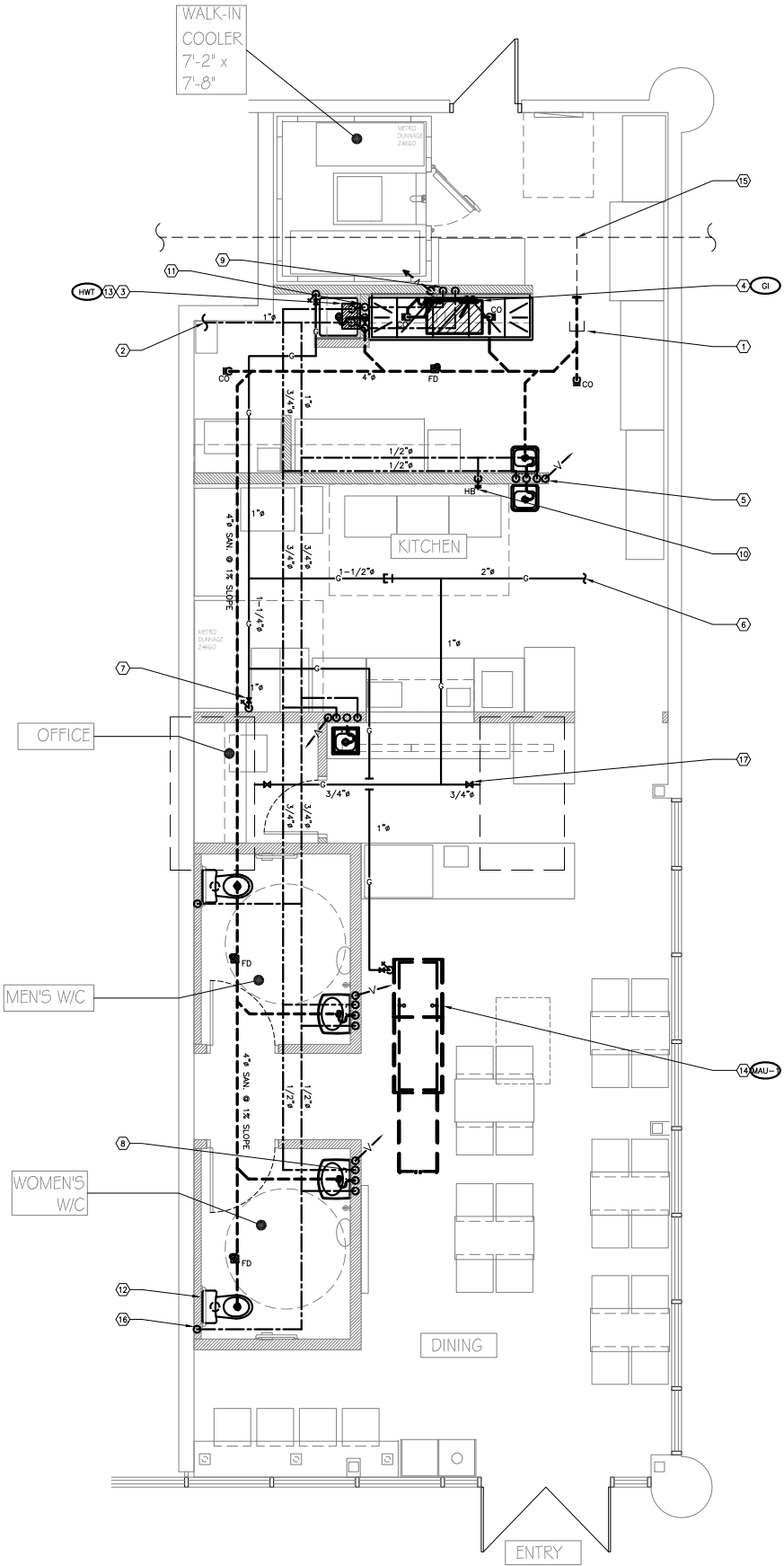
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Signature _____

Date 07/27/15

PERMIT NUMBER: P 09195

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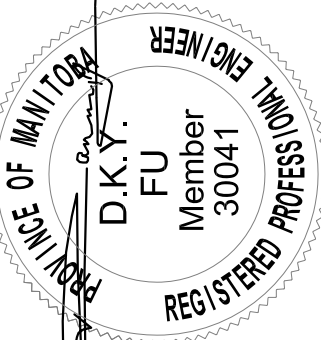
NOTES: PLUMBING AND DRAINAGE

- CONNECT NEW 4" SANITARY DRAIN LINE TO EXISTING LANDLORD PROVIDED 4" SANITARY CAPPED CONNECTION. VERIFY FLOW DIRECTION, INVERTS AND LOCATION ON SITE. (TYP.)
- CONNECT NEW 1" COLD WATER LINE TO NEAREST EXISTING SERVICE OF SUFFICIENT SIZE. PROVIDE CHECK WATER METER AND REMOTE READOUT AS REQ'D. VERIFY EXACT LOCATION ON SITE.
- SUPPLY AND INSTALL NEW GAS FIRED HOT WATER TANK ABOVE MOP SINK. VERIFY EXACT LOCATION ON SITE.
- SUPPLY AND INSTALL NEW RECESSED GREASE INTERCEPTOR BELOW 3-COMP. SINK. VERIFY DIMENSIONS AND LOCATION PRIOR TO INSTALLATION.
- CONNECT NEW 3" VENT TO L/L'S NEAREST EXISTING VENT THRU ROOF. CONNECTION OF SUFFICIENT SIZE. PROVIDE COMPLETE VENTING SYSTEM AS PER MANITOBA'S PLUMBING CODE AND BUILDING DEPARTMENT SATISFACTION. (TYP.)
- CONNECT NEW 2" GAS LINE TO L/L'S EXISTING GAS CONNECTION CAPABLE OF 900 CFH. MIN. VERIFY WITH LOCAL GAS COMPANY FOR THIS WORK AND LOCATION ON SITE. PIPING SIZE BASED ON 200' AND SCHEDULE 40 PIPE, FOR PRESSURES OF 7" W.C. AND PRESSURE DROP ON 1" W.C. (TABLE A.2, CAN/CSA-B149.1-00) VERIFY ON SITE AND RESIZE IF REQUIRED. INFORM ENGINEER AS REQUIRED.
- RUN NEW 1" GAS LINE (245 CFH) DOWN C/W SOLENOID VALVE TO SERVE FRYERS.
- NEW 1/2" HOT & COLD WATER LINES DOWN IN WALL TO SERVE LAV. (TYP.)
- NEW 3/4" HOT & COLD WATER LINES DOWN IN WALL TO SERVE 3-COMPARTMENT SINK.
- NEW 1/2" HOT WATER LINE DOWN IN WALL TO HOSE BIB.

- NEW 3/4" HOT & COLD WATER LINES DOWN IN WALL TO SERVE JANITOR SINK.
- SUPPLY & INSTALL NEW PLUMBING FIXTURES AS INDICATED. (TYP.)
- RUN NEW 1" GAS LINE (199 CFH) DOWN TO SERVE HWT.
- RUN NEW 1" GAS LINE (241 CFH) TO SERVE NEW MUA UNIT.
- EXISTING LANDLORD'S 4" SANITARY LINE TO REMAIN.
- 1/2" COLD WATER LINE DOWN IN WALL TO SERVE W/C. (TYP.)
- RUN NEW 3/4" GAS LINE (108 CFH) TO SERVE EX. RTU. (2 TYP.)

- RECESSED GREASE INTERCEPTOR EQUALS 'SMITH' 8035, 35 GPM, 70 LBS CAPACITY. VERIFY ON SITE.
- TAKAGI OR EQUAL T-K3-PRO, 199 MBH INPUT, 2.7 GPM FLOW RATE AT 100°F RISE, DIMENSIONS: 22"H x 14"W x 9.5"D C/W OPTIONAL DIRECT VENT KIT AND MOUNTING BRACKET. REFER TO MANUFACTURER'S REQUIREMENTS PRIOR TO INSTALLATION.

- NOTE:
- VERIFY WITH LANDLORD'S REPRESENTATIVE THE SCOPE OF LANDLORD AND TENANT CONTRACTOR'S WORK BEFORE PRICING.
 - REMOVE ALL UNUSED PLUMBING FIXTURES AND CAP ALL UNUSED SERVICES BEHIND FINISHED SURFACES.
 - GAS PIPING SIZE BASED ON 60' AND SCHEDULE 40 PIPE, FOR PRESSURES OF 7" W.C. UP TO 14" W.C. AND PRESSURE DROP ON 1" W.C. (TABLE A.2, CAN/CSA-B149.1-00).
 - X-RAY FLOOR SLAB PRIOR TO ANY CUTTING/CORING OF FLOORING. COORDINATE WORK WITH BUILDING OPERATIONS.
 - CONTRACTOR TO PROVIDE SEPARATE PRICE/CREDIT TO USE PEX PIPING UNDER SLAB WITHIN DRAINAGE TRENCHING FOR COLD AND HOT WATER LINES.



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NO.	DATE	DESCRIPTION	BY	DF
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Project:	Scale: NTS
MARY BROWN'S FAMOUS CHICKEN AND TATERS KILDONA CROSSING SHOPPING CENTRE 1615 REGENT AVENUE W. WINNIPEG, MB	Date: 07/27/15
Drawing:	Drawn: BK
PLUMBING & DRAINAGE LAYOUT	Checked: DF
	Project No: 15-134
	Drawing no: M5.1