

1. GENERAL PROVISIONS

1. SUPPLY AND INSTALL A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED AND/OR SPECIFIED DRAWINGS ARE NOT TO BE SCALED AND ARE INTENDED AS SCHEMATIC ONLY. VISIT SITE PRIOR TO SUBMISSION OF BID AND EXAMINE ALL EXISTING CONDITIONS. NOTIFY ENGINEER OF DISCREPANCIES, CONFLICTS AND AREAS OF CONCERN.
2. ALL WORK SHALL CONFORM TO THE LATEST CODE REQUIREMENTS OF THE ONTARIO BUILDING CODE, FIRE MARSHALS ACT, MUNICIPAL BYLAWS AND AUTHORITIES HAVING JURISDICTION. THE INSTALLATION SHALL BE IN ACCORDANCE TO THE STANDARDS OF THE C.S.A., C.G.A. AND U.L.C. FOLLOW ALL RECOMMENDATIONS OUTLINED BY THE MANUFACTURER, DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE AFOREMENTIONED CODES AND STANDARDS WITH THE INSTALLATION PERFORMED ONLY BY CONTRACTORS LICENSED AND FAMILIAR WITH THE ABOVE REQUIREMENTS.
3. PAY AND OBTAIN ALL REQUIRED PERMITS, FEES, INSPECTIONS AND LICENSES. SUBMIT DRAWINGS TO AUTHORITIES AS REQUIRED.
4. ALL MATERIALS AND EQUIPMENT TO BE NEW AND FREE FROM DEFECTS. GUARANTEE IN WRITING, INCLUDING THE MANUFACTURER'S WARRANTY, THE MATERIAL AND WORKMANSHIP, FOR A PERIOD OF ONE YEAR AFTER BUILDING ACCEPTANCE BY THE ENGINEER AND THE OWNER.
5. THE GENERAL TRADES SHALL PROVIDE ALL CUTTING, PATCHING AND PAINTING, EXCAVATION AND BACKFILL REQUIRED FOR THE COMPLETION OF THE WORK. THE ELECTRICAL TRADE SHALL PROVIDE ALL STARTERS, DISCONNECTS AND WIRING UNLESS SPECIFIED OTHERWISE. ALL PACKAGED EQUIPMENT SHALL BE COMPLETE WITH STARTERS, DISCONNECTS AND PREWIRED CONTROLS (ELECTRICAL TRADE TO PROVIDE POWER WIRING). MECHANICAL TRADE TO CHECK AVAILABLE VOLTAGES PRIOR TO ORDERING EQUIPMENT. MECHANICAL TRADE TO SUPPLY, ELECTRICAL TRADE TO INSTALL AND WIRE ALL LOW VOLTAGE THERMOSTATS AND ASSOCIATED CONTROLS.
6. THE MECHANICAL TRADE SHALL SUPPLY ALL ACCESS DOORS AND COVERS FOR INSTALLATION BY GENERAL TRADES FOR CONCEALED VALVES, CLEANOUTS, AIR VENTS, FIRE DAMPERS, BALANCING DAMPERS AND EQUIPMENT, REQUIRING PERIODIC MAINTENANCE OR ADJUSTMENT. OBTAIN APPROVAL FROM THE ARCHITECT AND ENGINEER FOR ALL LOCATIONS AND SIZES.
7. KEEP SITE CLEAN AT ALL TIMES AND PHASE WORK WITH PROJECT CO-ORDINATOR. CLEAN ALL EQUIPMENT, PROVIDE INITIAL MAINTENANCE, START-UP AND FILTER REPLACEMENT PRIOR TO FINAL INSPECTION.
8. SUBMIT SIX(6) COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT PRIOR TO ORDERING. PROVIDE 3 MAINTENANCE MANUALS C/W APPROVED COPY OF ALL SHOP DRAWINGS, MARKED UP WHITE PRINT SHOWING AS-BUILT RECORD CONDITION AND AIR BALANCE REPORT TO ENGINEER.
9. VISIT AND INSPECT THE SITE. NO ALLOWANCE WILL BE MADE FOR FAILURE TO DO SO.
10. COOPERATE WITH ALL OTHER TRADES. CO-ORDINATE ALL WORK.
11. IDENTIFY ALL EQUIPMENT WITH LAMACOID NAMEPLATES SECURELY FASTENED.
12. MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL & ELECTRICAL DRAWINGS. THE MECHANICAL CONTRACTOR SHALL BE DEEMED RESPONSIBLE FOR CO-ORDINATION OF ALL TRADES TO ENSURE AN ORDERLY AND COMPLETE INSTALLATION.
13. ANY WORK NOT SHOWN ON THE DRAWINGS OR SPECIFICALLY MENTIONED IN THE SPECIFICATIONS, BUT CONSIDERED NECESSARY FOR THE COMPLETION OF THE WORK IN THE PROPER MANNER, SHALL BE PROVIDED BY THIS CONTRACTOR AT NO ADDITIONAL CHARGE.
14. NOTHING CONTAINED HEREIN SHALL BE CONSTRUED TO RELIEVE THIS CONTRACTOR FROM MAKING GOOD AND PERFECT IN ALL USUAL DETAILS OF CONSTRUCTION AND HE WILL BE HELD RESPONSIBLE TO PROVIDE AND FURNISH MATERIAL, TO DO ALL WORK AND LABOUR, AND BEAR EXPENSES INCIDENTAL TO THE SATISFACTORY COMPLETION OF THE WORK EMBRACED IN THESE SPECIFICATIONS.
15. VERIFY VOLTAGE WITH DIVISION 16 CONTRACTOR ON SITE, FOR ALL EQUIPMENT, BEFORE PLACEMENT OF ORDER.
16. MECHANICAL CONTRACTOR SHALL CONFIRM EXACT LOCATION OF ALL EXISTING MECHANICAL SERVICES & EQUIPMENT.
17. MECHANICAL CONTRACTOR SHALL PROVIDE TO THE OWNER, 5 BOUND SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL MECHANICAL EQUIPMENT.

2. PLUMBING

1. PLUMBING AND DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE, PART 7.
2. SUPPORT SUSPENDED PIPING FROM STRUCTURAL MEMBERS WITH CLEVIS HANGERS AT ADEQUATE SPACING TO ENSURE NO SAG OR FAILURE OF JOINTS. DO NOT USE PERFORATED BAND, WIRE CHAIN, OR SOLID RING TYPE HANGERS. ISOLATE COPPER PIPE FROM HANGER OR OTHER PIPING WHERE ELECTROLYTIC ACTION CAN OCCUR. ADEQUATELY BRACE PIPING AND ALLOW FOR EXPANSION OR CONTRACTION. PROVIDE EXPANSION LOOPS OR JOINTS SIZED TO COMPENSATE CHANGES IN PIPE LENGTH CAUSED BY A TEMPERATURE DIFFERENTIAL OF 150°F (65.6°C). PROVIDE WATER HAMMER ARRESTORS AT ALL FIXTURE GROUPS, PPP-SC SERIES.
3. INSTALL ACCESS COVERS FOR ALL CLEANOUTS. PROVIDE BACKFLOW PREVENTERS AS REQUIRED BY CODE TO PROTECT THE POTABLE WATER SUPPLY.
4. CO-ORDINATE START-UP OF EQUIPMENT WITH OTHER TRADES AND ENSURE THAT ALL WORK AND INSPECTIONS ARE COMPLETE.
5. ALL DOMESTIC WATER PIPING TO BE TYPE "M" HARD COPPER WITH 95/5 SOLDER JOINTS. NO LEAD.
6. ABOVE GROUND SANITARY PIPING 2" (50 mm) AND SMALLER TO BE DWV COPPER TUBING. SANITARY PIPING 3" (75 mm) AND LARGER TO BE CAST IRON WITH MECHANICAL JOINTS. BELOW GRADE SANITARY DRAIN PIPING TO BE AYS/PVC PLASTIC AS APPROVED BY O.B.C. AND MUNICIPAL AUTHORITIES.
7. ALL PIPING TO BE TESTED FOR A MINIMUM OF 24 HOURS IN ACCORDANCE TO THE CODE REQUIREMENTS. DO NOT BACKFILL OR CONCEAL ANY PIPE UNTIL TESTED AND SUBSEQUENTLY INSPECTED BY THE ENGINEER.
8. INSULATE ALL HOT AND COLD WATER PIPING WITH 1" (25mm) FLEXIBLE PREFORMED FIBERGLASS PIPE INSULATION WITH VAPOUR BARRIER. TAPE ALL JOINTS. PROVIDE CANVAS FINISH C/W 2 COATS SIZING ON ALL EXPOSED PIPING. ALL WORK TO BE PERFORMED BY INSULATION JOURNEYMEN.
9. CONCEAL ALL PIPING WHERE POSSIBLE. INSTALL CHROME PLATED ESCUTCHEON PLATES IN ALL FINISHE AREAS. PROVIDE UNIONS AND VALVES AT ALL DOMESTIC HOT WATER TANKS AND OTHER EQUIPMENT TO FACILITATE MAINTENANCE.
10. PLUMBING FIXTURES SHALL BE PROVIDED AS FOLLOWS:

TOILET - FLOOR MOUNTED PRESSURE-ASSIST TANK (WC-2)
(BARRIER FREE DESIGN)

American Standard 'CADET ELONGATED 16" (406mm) HIGH' #2168.222 'Pressure-Assist AquaLite' Toilet, vitreous china, elongated syphon jet action bowl and pressure assist tank complete, 1.3 gal. (6L) flush, with large cast rib for china to china tank assembly, splash block and bolt caps. Provide floor flange, flange bolts, and gasket. McGuire #H166LKN3 Supply, C.P., polished, rigid horizontal with V.P. loose key angle stop, escutcheon and flexible riser. Centoco #B20ST Seat, elongated heavy duty solid plastic open front with cover, check hinges and chromated steel posts, washers and nuts.

BASIN - WALL HUNG (BARRIER FREE DESIGN & GENERAL USE)
American Standard 'MURRO' #0954.000 Basin, 4" (102mm) centres, 22" x 21" x 5 - 7-1/2" (559mm x 533mm x 127-191mm) deep, vitreous china, rear overflow, for concealed arm support. Trim fittings: Chicago Faucets #802A-VPA-XK Faucet, C.P. 4" (102mm) C.C., solid cast brass lead-free body, 1/4 turn ceramic disc valve cartridges, with vandal-proof 1.84 GPM (BL) flow aerator outlet and cast metal lever handles. McGuire #155A Drain, C.P. open grid. C.P. 'p' Trap, 17 gauge (1.5mm), 1-1/4" (32mm) and escutcheon. McGuire H166LKN3RB Supplies, C.P., polished, short horizontal with V.P. loose key angle stops, escutcheons and braided flexible risers. Smith Series #700-M31M Carrier, heavy duty with one piece construction steel channel legs, block base feet support and extended concealed arms. Provide American Standard #0059.020 Semi-China Pedestal to cover exposed piping as per local codes.

ONE COMPARTMENT S.S. SINK

Kindred 'STEEL QUEEN' #QSL-2020-B S.S. Sink, 20-1/2" x 20" x 8" (521mm x 508mm x 203mm) deep, back ledge, grade 18-8 type 302 stainless steel, single compartment, mirror finished rim, satin finished bowl, self-rimming, counter mounted, with crumb cup strainer and sound deadening. 'p' Trap Cast Brass, 1-1/2" (38mm) with cleanout, union and escutcheon. Trim fitting: Chicago Faucets #1100-L9-VPA-XK Faucet, C.P. 8" (203mm) C.C., deck mounted, solid cast brass lead-free body, 1/4 turn ceramic disc valve cartridges, swing spout with vandal-proof 1.84 GPM (BL) flow aerator outlet and cast metal lever handles. Connect with flexible tubes and 1/2" (12.7mm) rough stops on supply piping, escutcheons.

FD-1: GENERAL AREA FLOOR DRAIN:

EPOCO SERIES E1000-R5-TPT-PB UNI-VERT FLOOR DRAIN WITH OVEN CURED POWDER EPOXY COATED ALUMINIUM ALLOY BODY, REVERSIBLE CLAMPING COLLAR WITH INTEGRAL DOUBLE DRAINAGE OPENINGS, ADJUSTABLE STRAINER ASSEMBLY WITH POLISHED NICKEL BRONZE FRAME AND REVERSIBLE GRATE, TPT TRAP PRIMER TAPPING.

ROOF DRAINS - FLOW CONTROL:

SMITH SERIES 1083-CAN-ERCCID FLOW CONTROL ROOF DRAIN, SLOPED ROOF ALL DUCO COATED CAST IRON BODY WITH DECK CLAMP, ADJUSTABLE EXTENSION AND SUMP RECEIVER, 8" (203MM) SECURED CAST IRON DOME AND 6" HIGH (150MM) FLOW RATE CONTROL WEIR.

HOT WATER HEATER:

25 GAL CAPACITY WITH 3000W, 208V ELEMENT EQUAL TO RUUD #TE25R. PROVIDE ALL NECESSARY WATER, DRAIN, CONNECTIONS.

15. WATER HAMMER ARRESTOR SHALL BE P.P.P. NO.'SC' SERIES TO SUIT. NO ALTERNATES.

3. NATURAL GAS DISTRIBUTION SYSTEM

1. MECHANICAL CONTROL SHALL ARRANGE FOR AND PAY ALL COSTS INVOLVED REGARDING THE INSTALLATION OF THE NATURAL GAS SERVICE.
2. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE TO CGA-149.1 - LATEST EDITION OF THE INSTALLATION CODE FOR NATURAL GAS BURNING APPLIANCES AND EQUIPMENT AND THE ONTARIO REGULATION 862-LATEST EDITION OF ENERGY ACT.
3. ALL PIPING SHALL BE SCHEDULE 40 STEEL, WITH SCREWED JOINTS OR WELDED JOINTS AS PERMITTED BY THE APPLICABLE CODES. ALL PIPING TO BE PAINTED BY THIS MECHANICAL CONTRACTOR. MINIMUM TWO COATS OF ALKID YELLOW PAINT.
4. VALVES: CODE APPROVED

4. FIRE PROTECTION

1. AUTOMATIC SPRINKLER SYSTEM: PROVIDE AS PER NFPA 13. CONTRACTOR TO PROVIDE HIDRAULIC CALCULATION BEARING THE SEAL OF A PROFESSIONAL ENGINEER.
2. FIRE EXTINGUISHERS:
 1. TYPE FE1: MULTI-PURPOSE DRY CHEMICAL EXTINGUISHER, STORED PRESSURE, RECHARGEABLE TYPE WITH HOSE AND SHUT-OFF NOZZLE, ULC LABELLED FOR A, B, AND C CLASS PROTECTION. SIZE 4.5 Kg. PROVIDE COMPLETE WITH WALL BRACKET AND MAINTENANCE TAGS.
3. STANDARD OF ACCEPTANCE: WILSON & COUSINS OR CANADIAN FIRE HOSE CORPORATION.

5. VENTILATION

1. FOLLOW INSTALLATION STANDARDS TO LATEST EDITION OF SMACNA AND ASHRAE, RECTANGULAR DUCTWORK TO BE FABRICATED FROM CROSSBROKEN GALVANIZED STEEL SHEETS WITH THICKNESS AS DETAILED IN SMACNA STANDARDS. FABRICATE DUCTWORK IN A WORKMANLIKE MANNER. ALL JOINTS TO BE SEALED WITH LIBERAL APPLICATION OF DURO-DYNE S-2 DUCT SEALER.
2. BRACE DUCT IN MANNER SO THAT IT DOES NOT SAG OR VIBRATE WHEN FANS ARE OPERATING AT HIGH SPEED OR STOPPING AND STARTING.
3. PRIOR TO FABRICATION, FIELD MEASURE DUCT FOR CONFLICT TO STRUCTURAL MEMBER, LIGHTING AND PLUMBING. REPORT DISCREPANCIES TO THE ENGINEER.
4. INSTALL BALANCING DAMPERS AS SHOWN AND REQUIRED FOR BALANCING OF THE SYSTEM. INSTALL TURNING VANES IN SQUARE ELBOWS. SOFT VENTS, WALL CAPS AND BRICK VENTS TO HAVE INSECT SCREENS AND FREE OPERATING BACKDRAFT DAMPERS. INSTALL FIRE DAMPERS AND FIRE STOP FLAPS AS SHOWN AND WHERE REQUIRED BY CODE. INSTALLATION TO CONFORM TO NFPA-90 AND MANUFACTURER'S DETAILS.
5. SECURE ALL FANS AND EQUIPMENT TO STRUCTURE WITH SUSPENSION RODS WITH SPRING ISOLATORS TO PROVIDE QUIET AND RATTLE-FREE OPERATION. DUCTWORK TO FAN CONNECTIONS TO BE MADE WITH FLEXIBLE FABRIC CONNECTORS, DURO-DYNE "CANFLEX".
6. PROVIDE START-UP OF SYSTEM AND CO-ORDINATE WITH OTHER TRADES. SUBMIT THREE COPIES OF AIR BALANCE REPORT, MAINTENANCE DATA AND LIST OF SERVICES PERFORMED DURING START-UP TO ENGINEER PRIOR TO FINAL ACCEPTANCE.
7. ACOUSTICALLY LINE DUCTWORK WITH 1" (25mm) THICK INTERNAL ACOUSTIC INSULATION WHERE NOTED ON DRAWINGS. DUCT SIZE NOTED ON DRAWING INDICATES FREE AREA REQUIRED. INCREASE DUCTWORK SIZE AS NECESSARY TO MAINTAIN FREE AREA NOTED.
8. INSULATE DUCTWORK AND OPENINGS AT EXTERIOR WALLS AND/OR ROOF FOR MINIMUM OF 6 FEET (1.8 m) WITH 2" (50 mm) FLEXIBLE DUCT INSULATION C/W VAPOUR BARRIER. INSTALL MECHANICAL TIES TO HOLD INSULATION ON DUCTING. PROVIDE CANVAS FINISH ON ALL EXPOSED AREAS.
- 9.
10. PROVIDE FIRE DAMPERS WITH WALL SLEEVE, BREAKAWAY JOINTS, DUCT ACCESS DOOR AND ANGLE IRON ASSEMBLY FRAME ON BOTH SIDES OF WALL. REFER TO DRAWING M1 FOR SIZES AND LOCATION. ALL FIRE DAMPERS SHALL BE OUT OF AIRSTREAM TYPE.

6. AIR BALANCING

1. DIVISION 15 SHALL INCLUDE FOR ALL BALANCING WORK AND RELATED ACTIVITIES.
2. ALL INLETS, OUTLETS, GRILLES, DIFFUSERS AND REGISTERS SHALL BE ADJUSTED AND A REPORT PREPARED AND SUBMITTED (3 COPIES; RING BINDER; SCHEMATICS).
3. THE AIR BALANCING CONTRACTOR SHALL INCLUDE ALL RELATED ACTIVITIES FOR VERIFICATION OF CRUV-1, CRUV-2 & CRUV-3, HEATING, COOLING, ECONOMIZER OPERATIONS AND FREE MOVING RELIEF DAMPER OPERATION. ACTIVITIES SHALL BE CO-ORDINATED WITH THE UNIT MANUFACTURERS AGENT AS LISTED ABOVE IN SECTION 6.
4. THE AIR BALANCING CONTRACTOR SHALL INCLUDE FOR ALL RELATED ACTIVITIES FOR VERIFICATION OF THE FURNACE SYSTEM, INCLUDING SUPPLY, RETURN AND FRESH AIR VOLUMES.
5. THE AIR BALANCING CONTRACTOR SHALL INCLUDE FOR ALL RELATED ACTIVITIES FOR VERIFICATION OF ALL EXHAUST FANS AND RELATED GRILLES.
6. BALANCE TO ACHIEVE MINIMUM STATIC PRESSURE DROPS COMPATIBLE WITH THE SYSTEM.
7. ACCEPTABLE AIR BALANCING SUB-CONTRACTORS: DATA AIR BALANCING, MAXIMA TECHNICAL SERVICES AND SUNDERLAND AIR BALANCING.
8. OTHER FIRMS MAY BE DEEMED ACCEPTABLE, HOWEVER, ALTERNATES MUST BE REVIEWED AND APPROVED BY THE ENGINEER, PRIOR TO THE CLOSE OF TENDER. REVISIONS WILL BE IDENTIFIED WITHIN AN ADDENDUM.

CITY OF KANATA
REVIEWED
FOR THE PURPOSE OF
ISSUING A BUILDING PERMIT

MAY 0 2 2001

BUILDING SERVICES DEPT.

P.F.D. 1/1/01



1	FEB. 21, 01	FOR BLDG PERMIT	MY
NO.	DATE	REVISION	NAME

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PROJECT
**ADDITION TO THE
RON MASIN
PLAYHOUSE**

DRAWING
**MECHANICAL
SPECIFICATIONS**

PROJECT NUMBER
00-37

CHECKED BY
MY

DRAWN BY
SY

DATE
DEC. 2000

REVISION

ISSUED BY
SCALE
1:100
DRAWING NUMBER
M3