

MECHANICAL SPECIFICATIONS

GENERAL

1. INTENT:
IT IS THE INTENTION OF THIS SET OF SPECIFICATIONS AND DRAWINGS TO CALL FOR A COMPLETE, TESTED, READY TO OPERATE AND WORKABLE SYSTEM CONFORMING TO STANDARD PRACTICE, CODES AND REGULATIONS. ANY MATERIALS OR WORK NOT SHOWN ON THE DRAWINGS BUT SPECIFIED IN THE SPECIFICATIONS, OR VICE VERSA, SHALL BE SUPPLIED AND INSTALLED BY THIS MECHANICAL CONTRACTOR, ALL SYSTEMS DESCRIBED HEREIN AND/OR SHOWN IN THE DRAWINGS SHALL BE COMPLETED IN ALL RESPECTS; ANY MINOR DETAILS NOT SHOWN OR SPECIFIED BUT ARE INHERENT FOR A COMPLETE AND WORKABLE SYSTEM SHALL BE INCLUDED. EQUIPMENT SHALL BE AS SPECIFIED. EQUIPMENT NOT SPECIFIED SHALL BE APPROVED BY OWNER PRIOR TO BEING USED. ALL EQUIPMENT START-UP SHALL BE PERFORMED BY A FACTORY TRAINED REPRESENTATIVE AND COMPLETE WITH A FACTORY CERTIFIED START-UP REPORT CONTAINING ALL REQUIRED INFORMATION. OWNER IS LUBEXX ENTERPRISES OR ITS REPRESENTATIVE.

2. SCOPE OF WORK (DESIGNED AS NON-CLASSIFIED BUILDING PER OWNER/DESIGNER):

- MAKE-UP AIR UNIT INTERLOCK WITH EXHAUST FAN VIA GAS DETECTOR.
- FURNACE AND DUCTWORK FOR HEATING AND VENTILATION.
- WASHROOM PLUMBING FIXTURES C/W HOT WATER HEATER AND EXHAUST FAN.
- DOUBLE COMPARTMENT SUMP WITH PUMPS AND OIL INTERCEPTOR.
- PROVIDE ALL REQUIRED CONTROLS TO MAKE ALL MECHANICAL SYSTEM OPERATING PROPERLY.
- FLOOR DRAINS AND ROOF DRAINS AS REQUIRED.
- CONNECT ALL SERVICES (WATER, SANITARY AND GAS) AT THE BUILDING PER CODE OR UTILITY COMPANIES REQUIREMENTS.
- PAY FOR ALL THE COST OF SERVICES AND CONNECTIONS INCLUDING METERS, REGULATORS, REQUIRED BY ALL SERVICES UTILITY COMPANIES.
- MISCELLANEOUS AS PER MECHANICAL DRAWINGS.
- PROVIDE 5 COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT SPECIFIED TO OWNER/ENGINEER FOR REVIEW.

3. THE INSTRUCTION TO BIDDERS, THE AGREEMENT, THE GENERAL CONDITIONS OF THE CONTRACT AND ALL ADDENDA THERETO SHALL FORM AN INTEGRAL PART OF THIS SET OF DRAWINGS AND SPECIFICATIONS.

4. ANY QUESTIONS OR ANY DISCREPENCIES SHALL BE REPORTED TO AND CONFIRMED WITH THE OWNER PRIOR TO CONSTRUCTION.

5. THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL LABOUR AND MATERIALS REQUIRED FOR THE INSTALLATION, TESTING AND PUTTING INTO OPERATION OF THE MECHANICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND/OR AS SPECIFIED HEREIN IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS, AND ALL RULINGS OF LOCAL AUTHORITIES WITH JURISDICTION. TAKE OUT AND PAY ALL CERTIFICATES, PERMITS AND FEES TO ALLOW THE MECHANICAL PORTION OF THIS PROJECT, INCLUDING ALL UTILITIES/SITE COSTS TO BE COMPLETED. VISIT THE SITE TO VERIFY AND CHECK ALL EXISTING CONDITIONS, ESPECIALLY ALL SITE AND BUILDING DRAINAGE, INVERT ELEVATIONS AND OTHER SERVICE CONNECTIONS, BEFORE SUBMITTING HIS TENDER. ARRANGE FOR AND PROVIDE ALL BONDS AND SURETIES AS MAY BE CALLED FOR IN THE REQUEST FOR SUBMISSION AND/OR IN THE GENERAL CONDITIONS OF THE CONTRACT. REVIEW THE MECHANICAL, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR RELATED WORK AND CONDITIONS AND SPECIFICATIONS PRIOR TO THE SUBMISSION OF HIS TENDER AND OBTAIN ALL CLARIFICATIONS OF THE INTENDED WORK IN WRITING FROM THE ENGINEER, IF REQUIRED. THE TENDER PRICE SUBMITTED SHALL BE FOR A COMPLETE AND WORKABLE SYSTEM, NO ALLOWANCE SHALL BE CONSIDERED AFTER TENDER. ENSURE THAT ALL MATERIALS ARE NEW AND FREE FROM DEFECTS. TEST, ADJUST AND CLEAN THE ENTIRE SYSTEM BEFORE FINAL INSPECTION.

6. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER'S OTHER CONTRACTOR'S WORK, PROPERTY OR PERSONNEL, AND PROTECT ALL FINISHED AND UNFINISHED WORK FROM DAMAGE. COVER FLOORS AND OTHER WORK WITH TARPULAINS AND OTHER PROTECTIVE COVERINGS TO PREVENT OIL AND GREASE SPILLAGES. REPAIR ALL DAMAGE TO PARTS OF THE BUILDING RESULTING FROM THE CARRYING OUT OF WORK WITHOUT EXPENSE TO THE OWNER. A SAFE WORKPLACE IS MANDATORY. A REFUSE BIN WILL BE PROVIDED BY OWNER. THE WORK AREA SHALL BE CLEANED UP DAILY. FAILURE TO DO SO MAY RESULT IN A BACKCHARGE IN ORDER TO COVER CLEAN-UP COSTS.

7. ALL CONCRETE WORK FOR THE ENTIRE MECHANICAL SYSTEM AND ALL CUTTING OF FLOOR SLABS, IF ANY, FOR THE MECHANICAL TRADE SHALL BE DONE BY THE MECHANICAL CONTRACTOR. ALL ROOF CURBS, FLASHINGS AND COUNTER FLASHING ATTACHED TO ALL MECHANICAL EQUIPMENTS OR CURBS SUPPLIED WITH SAME SHALL BE DONE BY THE MECHANICAL CONTRACTOR.

8. ALL CONDUIT, WIRING, MOTOR CONTROLS AND STARTERS, AND REMOTE PUSH BUTTONS CONTROLS SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFIED OTHERWISE. THE MECHANICAL CONTRACTOR SHALL SUPPLY TO THE ELECTRICAL CONTRACTOR ALL INFORMATION REQUIRED TO ACCURATELY LOCATE THE MOTORS AND CONTROLS. THE ELECTRICAL CONTRACTOR SHALL WIRE TO, WIRE FOR AND CONNECT ALL MOTORS, MAGNETIC SWITCHES, THERMAL SWITCHES, DISCONNECT SWITCHES, PUSH BUTTONS, ELECTRICAL THERMOSTATS AND CONTROLS. ENSURE THAT ALL MOTORS ARE OF CORRECT PHASE AND VOLTAGE. PROVIDE MOTORS WITH PLUG-IN CONNECTIONS PERMISSIBLE BY CODE.

9. LAY OUT AND SCHEDULE ALL WORK TO PRECLUDE INTERFERENCE WITH OTHER WORK BEING CARRIED OUT IN THE BUILDING. CO-OPERATE WITH AND GIVE EVERY FACILITY TO ALL OTHER TRADES TO EXPEDITE, AND HAVE ALL MATERIALS AND EQUIPMENTS INSTALLED TO THE BEST ADVANTAGE THE PROJECT ALLOWS. WHEREVER ANY MECHANICAL EQUIPMENTS ARE TO BE BUILT IN WITH WORK OF OTHERS, SUPPLY THE EQUIPMENT ON SCHEDULE OR GIVE MEASUREMENTS TO ALLOW THE NECESSARY OPENINGS AND SPACE TO BE LEFT.

10. COORDINATE WITH THE GENERAL CONTRACTOR OR THE OWNER, LOCATIONS OF ALL HOLES FOR PIPES, DUCTS, ETC., INCLUDED IN THE CONTRACT BEFORE ALL WALLS ARE BUILT. DO ALL DRILLING FOR EXPANSION BOLTS, HANGER RODS, BRACKETS, SUPPORTS, ETC. BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THE WORK. PROVIDE ANY SLEEVES REQUIRED FOR THE MECHANICAL INSTALLATIONS. ALL WORK SHALL BE DONE TO THE SATISFACTION OF THE GENERAL CONTRACTOR OR OWNER.

11. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF ALL GRADES AND ELEVATIONS IN CONNECTIONS WITH ALL MECHANICAL SERVICES, EQUIPMENTS, PIPING, DUCTWORK, DRAINAGE, ETC.

12. FOLLOW THE RECOMMENDED INSTALLATION DETAILS AND PROCEDURES FOR ALL EQUIPMENTS AS FOUND IN SUPPLIER'S TECHNICAL DATA, SUPPLEMENTED BY DETAILS GIVEN HEREIN BY THESE SPECIFICATIONS AND DRAWINGS.

13. THIS SET OF DRAWINGS INDICATES THE GENERAL LOCATIONS AND ROUTES TO BE FOLLOWED BY PIPES AND DUCTWORK AND ALL OTHER EQUIPMENT TO BE INSTALLED UNDER THIS CONTRACT. ALL BUILDING AND SITE DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO ANY FABRICATION OR INSTALLATION OF EQUIPMENT. NO CONTRACT REVISIONS WILL BE ENTERTAINED DUE TO FAILURE TO VERIFY THESE DIMENSIONS ON SITE. WHERE THE REQUIRED PIPING, DUCTWORK, AND ALL MECHANICAL EQUIPMENTS ARE SHOWN IN DRAWINGS, THEY ARE ONLY SHOWN DIAGRAMMATICALLY. THEY SHALL BE INSTALLED IN SUCH A WAY AS TO CONSERVE HEAD ROOM AND TO CAUSE AS LITTLE INTERFERENCE AS POSSIBLE WITH THE FREE USE OF THE SPACE THROUGH WHICH THEY PASS. DO NOT SCALE DRAWINGS. ALL PIPING AND DUCTWORK, SHALL BE INSTALLED NEATLY WITHIN THE JOIST SPACES WHERE POSSIBLE AND CLOSELY TO ALL BUILDING STRUCTURES SO THAT THE REQUIRED FURRINGS CAN BE KEPT TO A MINIMUM. IN THE ENGINEER'S OPINION, ANY PIPING, DUCTWORK, OR ANY OTHER SYSTEMS THAT ARE NOT INSTALLED AS THEY SHOULD BE, THE ENTIRE SYSTEM SHALL BE TAKEN OUT AND REPLACED.

14. THE MECHANICAL SYSTEMS PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE GUARANTEED FREE FROM DEFECTS IN WORKMANSHIP AND MATERIAL FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. ANY EQUIPMENT OR INSTALLATION FOUND DEFECTIVE WITHIN THIS PERIOD SHALL BE REPAIRED AND REPLACED FREE OF CHARGES. THE MECHANICAL CONTRACTOR SHALL ALSO PROVIDE SERVICES TO ENSURE PROPER PERFORMANCE OF THE MECHANICAL SYSTEMS FOR ONE YEAR AFTER THE DATE OF ACCEPTANCE. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT DRAWINGS AND PROVIDE A COST FOR THE AS-BUILT.

EQUIPMENT

1. EXHAUST FANS EF- 1 AND EF- 2

- PROVIDE EXHAUST FANS WHERE INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE FOLLOWING SCHEDULE. PROVIDE SHOP DRAWINGS ON THE EXHAUST FANS. ENSURE QUIET OPERATION.

- EF-1: ROOF MOUNTED, "GREENHECK" BELT DRIVE MODEL GB 121-4, 969 CFM AT 0.12kpa, 7.8 SONES, 1127 R.P.M., 19.58m/s, 300mm DAMPER SIZE. EXHAUST FAN TO RUN IN ACCORDANCE WITH SETTING OF CARBON MONOXIDE DETECTOR AND INTERLOCK TO OPERATE WITH MAKE-UP AIR UNIT MAU-1. UNIT WEIGHT ABOUT 30kg UNIT TO BE SUPPLIED C/W PREFAB ROOF CURB TO BE 450mm HIGH MINIMUM, GRAVITY BACKDRAFT DAMPER, BIRDSCREEN AND DISCONNECT SWITCH.

- EF-2: PENN ZEPHYR MODEL ZT, ZEPHYRETTE. CAPACITY: 40 L/S AT 0.12kpa FRACTIONAL HP MOTOR. UNIT TO BE SUPPLIED C/W GRAVITY BACKDRAFT DAMPER AND PENN ROOF CAP. INTERLOCK EF-2 WITH WASHROOM LIGHT SWITCH WITH A TEN MINUTE DELAY.

2. CEILING HUNG GAS FIRED MAKE UP AIR UNIT MAU- 1

- "CARRIER "PERFORMANCE 95" MODEL 58DV100, 95 % EFFICIENCY, DIRECT VENT, FOUR-WAY MULTI-POISE CONDENSING GAS FURNACE, HORIZONTAL ORIENTATION. FACTORY SET AT 1974 CFM AT 0.12kpa, TWO- STAGE OPERATION. STAINLESS STEEL HEAT EXCHANGER. UNIT SIZE 1000mmX725mmX725mm. FILTER SIZE 500 X 625mm DISPOSABLE. SET THE MINIMUM OUTSIDE AIR TO 30% (283 L/S) MINIMUM MIXED AIR TEMP 16 °C. DIRECT IGNITION 75mm VENT SIZE. 14.6 AMPS NAMEPLATE RATING, 115V/60/1, 92kw INTERNAL CONDENSATE DRAIN SYSTEM. 12mm GAS CONNECTION. 10MBH INPUT HEATING 95000 BTU HR OUTPUT HEATING.

- PROVIDE PROGRAMMABLE THERMOSTAT. INTERLOCK WITH ROOF MOUNTED EXHAUST FAN 208V 3-PHASE/ELECTRICS. MECHANICAL CONTRACTOR TO PROVIDE CEILING HANGERS FOR SUPPORT.

3. RETURN AIR FAN

- DELHI MODEL 210 755 CFM AT 12mm S.P. 1543 PPM O.V. 776 R.P.M 0.33 BPH 373kw SINGLE PHASE MOTOR.

- SUSPENDED FAN FROM RUBBER IN SHEAR ISOLATORS. PROVIDE FLEXIBLE CONNETIONS ON FAN INLET AND OUTLET

EQUIPMENT - (CONTINUED)

4. RECLAIM OIL FURNACE FU- 1: (BY OTHERS, NOT IN SCOPE OF MECHANICAL WORK)

- "CLEAN BURNER CB-2500" FURNACE 250 MBH NOMINAL OUTPUT. 1180 L/S AIRFLOW OUTPUT AT 0.065 kpa FROM 2 SIDE OUTLETS. 200mmØ STACK SIZE. 115VAC 60 HZ SINGLE PHASE ELECTRICS 30AMP CIRCUIT BREAKER. FURNACE SYSTEM TO INCLUDE CHECK VALVE AND FILTER SCREEN, IN-LINE WASHABLE CASINISTER FILTER, BAROMETRIC DAMPER WALL. THERMOSTAT AND OIL SUPPLY PUMP. UNIT WEIGHT ABOUT 605 LBS, FOOT PRINT: 675mmX1800mmLX675mmH. GENERAL CONTRACTOR TO PROVIDE CEILING HANGERS FOR SUPPORT, AND AIR COMPRESSOR 0.94L/S AT 138kpa. FOR OIL PUMPING UNIT
- ROOF OPENING FOR VENT BY GENERAL CONTRACTOR AT 340mmX340mm I.D. AND 600mm HIGH.

- NOTE: INTAKES MUST BE INSULATED.

5. CO/NO2 GAS DETECTOR

- STAND ALONE DETECTOR/CONTROLLER WITH INTEGRAL VISUAL AND AUDIBLE ALARMS, 2 LEVEL SENSING (25 PPM /100 PPM, CO) WITH RELAYS. DETECTOR SHALL BE WIRING TO OPERATE MAU-1 AND EF-1. DETECTOR SHALL BE "CET" MODEL NO. GEM-II. MUST BE CALIBRATED.

6. FURNACE F- 1:

- "CARRIER - '58Mcb" HORIZONTAL GAS-FIRED CONDENSING FURNACE, MODEL NO. 120-20, HEATING INPUT/OUTPUT: 120/112 MBH, 2 STAGE HEATING. AIR DELIVERY: 1790 CFM AIRFLOW AT 0.6" E.S.P. WITH 0.6w MOTOR, 115/1/60. UNIT C/W ECONOMIZER FOR FREE COOLING. SET THE MINIMUM OUTSIDE AIR TO 20% (14 L/S), SET THE MINIMUM MIXED AIR TO 10°C. UNIT WEIGHT SHALL BE ABOUT 112kg. FOOT PRINT: 715mmW.X1000mmL.X606mmH. GENERAL CONTRACTOR TO PROVIDE CEILING HANGERS FOR SUPPORT.

- NOTE: INTAKES MUST BE INSULATED.

VENTILATION

1. DUCTWORK UP TO A 600mm MAX. DIMENSION SHALL BE 0.7mm THK. AND OVER 300mm SHALL BE 0.85mm THK. ROUND DUCTS SHALL BE SPIRAL, LOCK SEAM ONLY. ALL DUCTWORK SHALL BE SEALED, DUCT TAPE NOT ACCEPTABLE. DUCTWORK SIZE SHALL BE AS INDICATED OR EQUIVALENT.

2. ALL DUCTWORK SHALL BE GALVANIZED.

3. FIRE DAMPERS SHALL BE PROVIDED FOR ALL DUCTS PASSING THROUGH MECHANICAL ROOM WALLS AND FLOOR. FIRE DAMPERS TO BE C/W ACCESS DOORS. FREE AREA OF FIRE DAMPER EQUAL TO CROSS SECTION OF DUCT. FIRE DAMPERS TO CONSTRUCTED AS PER ULC STANDARDS. MANUFACTURER: "RUSKIN"

4. AIR OUTLETS:

- S- 1: "TITUS" AEROBLADE DOUBLE DEFLECTION GRILLE, MODEL #272RS C/W OPPOSED BLADE BALANCING DAMPER. GRILLE SHALL BE STEEL FRAME WITH EXTRUDED ALUMINUM BLADES.

- S- 2: "TITUS" TMSA 300X300 DIFFUSER IN 600X600 PANEL TO SUIT FOR LAY-IN T-BAR, NECK SIZE TO SUIT, #26 WHITE FINISH, BALANCING DAMPER FOR EACH TYPE S-2 OUTLET.

- S- 3 "TITUS" 300 RS DOUBLE DEFLECTION WITH BORDER SUITABLE FOR DRYWALL AND DUCT MOUNTING. PROVIDE BALANCING DAMPER FOR EACH TYPE S-3 OUTLET.

- R-1 AND T-1: "TITUS" 60F WITH BORDER SUITABLE FOR DRYWALL OR DUCT MOUNTING.

- E-1: "TITUS" 50F WITH BORDER SUITABLE FOR DRYWALL OR DUCT MOUNTING. PROVIDE BALANCING DAMPER.

- OUTSIDE AIR LOUVER: "AIROILITE" K6094 C/W BIRDSCREEN WITH 12mm WIRE MECH, FINISH COLOUR TO MATCH WALL.

5. AIR BALANCING: BALANCE ALL AIR MOVING EQUIPMENT TO PLUS OR MINUS 5% AS INDICATED, BALANCE ALL AIR OUTLETS TO PLUS OR MINUS 10% AS INDICATED. PROVIDE AIR MEASURING EQUIPMENT CALIBRATION CERTIFICATES (TO BE CALIBRATED WITHIN 12 MONTH PERIOD) PRIOR TO BALANCING. SUBMIT AIR BALANCING REPORT TO OWNER. MECHANICAL CONTRACTOR WILL REBALANCE ALL SYSTEMS WITH REPORT FREE OF CHARGE IF THE BALANCING WAS NOT DONE TO OWNER SATISFACTION.

6. LOW VELOCITY DUCTWORK

- THE MINIMUM SHEET METAL THICKNESS FOR LOW PRESSURE DUCTS INCLUDING FITTINGS, ACCESS DOORS AND OTHER ACCESSORIES SHALL BE AS FOLLOWS (UNLESS OTHERWISE SPECIFIED):

- RECTANGULAR DUCTWORK UP TO 300mm WIDE - 0.7mm THICK
- RECTANGULAR DUCTWORK 350mm TO 600mm WIDE - 0.85mm THICK
- ROUND DUCTWORK UP TO 300mm - 0.7mm THICK
- ROUND DUCTWORK 350mm TO 550mm - 0.85mm THICK

7. INSULATION

- INSULATE ALL PIPES WITHIN 1200mm OF PENETRATING AN EXTERIOR SURFACE UNLESS OTHERWISE SPECIFIED.

PLUMBING

1. THE PLUMBING CONTRACTOR SHALL INCLUDE IN HIS TENDER PRICE ALL COSTS INVOLVED IN THE INSTALLATION OF A COMPLETE PLUMBING SYSTEM AS PER LOCAL CODES AND REGULATIONS.

2. PROVIDE VACUUM BREAKERS ON ALL HOSE CONNECTIONS AND BAFL FLOW PREVENTERS ON ALL DOMESTIC WATER CONNECTIONS, WHERE REQUIRED BY CODE. PER LOCAL CODES AND REGULATIONS.

3. HANDICAP WATER CLOSET (WC- 1):

- BOWL & TANK: AMERICAN STANDARD "CHAMPION-4- RIGHT HEIGHT" MODEL #2002-014 WITH CHAMPION 4 FLUSHING SYSTEM AND PERMANENT "EVERCLEAN" ANTI-MICROBIAL SURFACE. 100mm NON-ADJUSTABLE PISTON ACTION ACCELERATOR FLUSH VALVE, TOWER SEAL - SILICON (MILITARY SPEC. Z20-765 CLASS 2 GRADE 50), 6L MAXIMUM PER FLUSH, LESS THAN 1 SECOND FOR 6L OF WATER TO EVACUATE TANK, FULLY GLAZED, 60mm DIAMETER TRAP, SIPHON ACTION JETTED BOWL, UPSWEEP SANITARY DECK ON BOWL, VITREOUS CHINA TANK WITH CHROME PLATED TRIP LEVER, FLUID MASTER 400A WATER CONTROL VALVE, 10 YEAR WARRANTY. BOWL-3225.016 TANK-4266.014.

- SEAT: "OLSONITE" MODEL #96SSTL C/W STAINLESS STEEL HARDWARE KIT #HH55, SOLID WHITE PLASTIC, OPEN FRONT WITH COVER, C/W FACTORY INSTALLED TOP MOUNT "TOP-TITE" HINGE AND COLOUR MATCHED BUMPERS.

4. LAVATORY (LAV- 1):

- SINK: AMERICAN STANDARD "LUCERNE - WALL HUNG" MODEL #0356-015, VITREOUS CHINA, SELF DRAINING FAUCET DECK WITH CONTOURED SIDE AND BACK SPLASH SHIELDS, SUPPLIED WITH MOUNTING KIT.

- FAUCET: "AMERICAN STANDARD" MONTERREY MODEL #6531-170 WITH WRIST BLADE HANDLES @ 200mm CENTRES AND POP-UP DRAIN.

- ROOF DRAIN (RD): SHALL BE "MIFAB" MODEL NO. R1200- EU LACQUERED CAST IRON DEEP SUMP ROOF DRAIN WITH ANCHOR FLANGE, CAST IRON WATER PROOFING MEMBRANE CLAMP RING WITH INTEGRAL GRAVEL STOP, ADJUSTABLE CAST IRON EXTENSION FLANGE, UNDERDECK CLAMP, AND STANDARD SELF-LOCKING POLYDOME STRAINER. RD SUITABLE FOR BUILT-UP FLAT ROOF. INSULATE ALL HORIZONTAL RAINWATER LEADERS.

- FLOOR DRAINS (FD-1) AND (FD-2): SHALL BE EQUAL TO "MIFAB" F1000 WITH EITHER A SQUARE OR ROUND STRAINER TO SUIT FLOOR. FLOOR DRAINS MUST BE PRIMED.

- DOMESTIC WATER HEATER (DWH- 1): PROVIDE HOT WATER HEATER AS SHOWN ON THE DRAWINGS. PROVIDE DRAIN CONNECTIONS AND THE REQUIRED PIPING FOR THE PRESSURE/TEMPERATURE RELIEF VALVES. WATER HEATER SHALL BE A STATE MODEL PV-40-10RS-FCSA, CAPACITY: 40 USGAL STORAGE, 18 USGPH RECOVERY AT 100 DEG.T.R., 4.5 KW, 240 VOLT ELEMENT.

- SUMP PUMPS (SP-1) AND (SP-2): SHALL BE EQUAL TO "MYERS" MODEL SSM33-P-1 SUBMERSIBLE PUMP, C/W FLOAT SWITCH. RATED CAPACITY: 25 US GPM @ 15 FT HEAD, 0.25kw MOTOR, 115V/1PH. INTERLOCK (SP-1) AND (SP-2) TO ALTERNATE THE OPERATION. PROVIDE MINIMUM 15' LONG CORDS.

- SUMP PUMP (SP- 3): SHALL BE EQUAL TO "MYERS" MODEL SSM33-P-1 SUBMERSIBLE PUMP, C/W FLOAT SWITCH. RATED CAPACITY: 95 LIT. @ 4.5M HEAD, 1/3 HP MOTOR, 115V/1PH. PROVIDE MINIMUM 4.6M LONG CORD. ENSURE PUMP TO OPERATE IN EVENT OF POWER FAILURE.

- OIL INTERCEPTOR (IT- 1): "MIFAB" MODEL NO. M10HUC. SANITARY POWDER EPOXY COATED INSIDE AND OUTSIDE FABRICATED TO GAUGE STEEL OIL INTERCEPTOR. UNIT TO INCLUDE: SEDIMENT BUCKET WITH PERFORATED BAFFLE NEAR INLET, DEEP SEAL TRAP COVERED BY LID, SEWER GAS STOPPER, SECURING BOLT(S), REMOVABLE BAFFLE ASSEMBLY AND CROSS BAR. STAINLESS STEEL CALIBRATED ORIFICE PLATE, INTERNAL AIR RELIEF BY-PASS, ADJUSTABLE AUTOMATIC DRAW-OFF ASSEMBLY, DOUBLE VENT CONNECTION ON EACH SIDE, AND TANK POWDER EPOXY COATED, NON-SKID RECTANGULAR LID(S). UNIT COMES COMPLETE WITH INTEGRAL HOLDING TANK FOR ADDITIONAL WASTE OIL STORAGE.

11. ROUGH-IN SCEDULE FOR PLUMBING FIXTURES

TYPE	HOT WATER	COLD WATER	WASTE	VENT
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WC	-	12mm	100mm	40mm
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LAV	12mm	12mm	40mm	30mm
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SK	12mm	12mm	40mm	30mm
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FD	-	-	100mm	40mm
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CODES, STANDARDS AND REGULATIONS

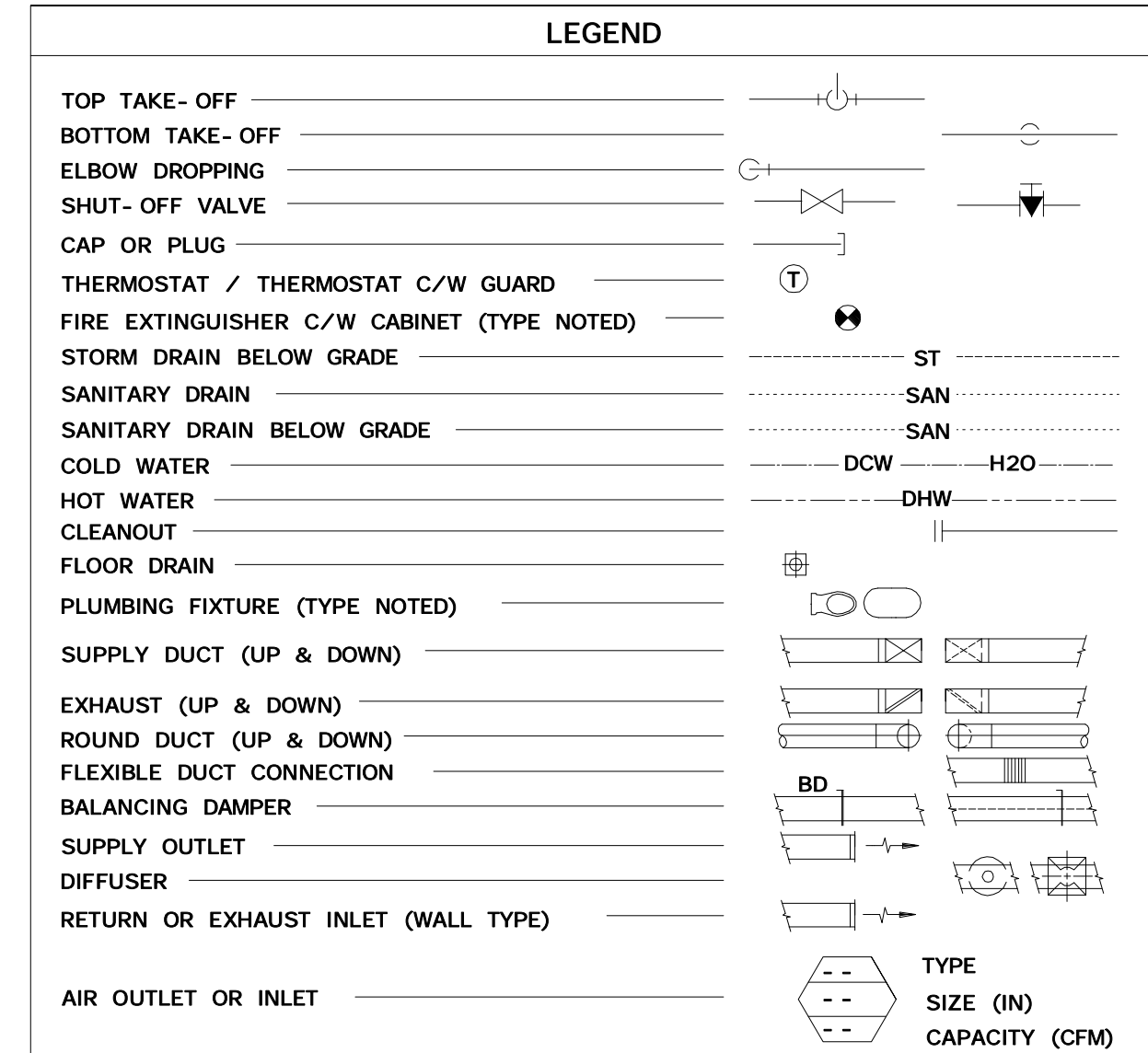
PROCUREMENT AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH GOOD PRACTICE, CODES, STANDARDS AND REGULATIONS (WITH THE LATEST SUPPLEMENTS AND ADDENDA) INCLUDING THE FOLLOWING:

- LATEST ALBERTA BUILDING CODE (ABC)
- AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)
- AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING INC. (ASHRAE)
- ALBERTA FIRE CODE
- AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)
- ASSOCIATED AIR BALANCE COUNCIL (AABC)
- NATIONAL BUILDING CODE (NBC)
- NATIONAL PLUMBING CODE (NPC)
- CANADIAN STANDARDS ASSOCIATION (CSA)
- NATIONAL FIRE CODE (NFC)
- INSTRUMENT SOCIETY OF AMERICAN STANDARDS (ISA)
- SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION (SMACNA)
- ALBERTA WORKERS' HEALTH AND COMPENSATION ACT
- UNDERWRITER LABORATORIES CANADA (ULC)
- ALBERTA ENVIRONMENT STANDARDS AND APPROVAL DIVISION

1. BUILDING IS DESIGNED AS NON-CLASSIFIED BUILDING.

2. CONFIRM EXACT LOCATIONS AND ELEVATIONS OF UTILITY MAINS ON SITE, PRIOR TO INSTALLING NEW WATER, N.GAS, STORM & SANITARY SEWER PIPING.

ALBERTA ENVIRONMENTAL PROTECTION AND ENHANCEMENT ACT



SCHEDULE FOR NATURAL GAS UTILITY

EQUIPMENT	INPUT (MBH)	- MINIMUM DISTANCE BETWEEN GAS LINE AND UNDERGROUND SERVICES - 6'- 6"
FURNACE F- 1	120	
CEILING HUNG MAKE-UP AIR UNIT MAU- 1	100	
TOTAL	220	

PRIOR TO COMMENCING INSTALLATION WITHIN THE BUILDING, VERIFY THE LOCATION AND INVERT ELEVATIONS OF SERVICE LINES INCLUDING SANITARY SEWER, STORM SEWER, WATER MAINS AND GAS MAINS WITH AUTHORITIES HAVING JURISDICTION TO ENSURE SERVICES CAN BE INSTALLED AS SHOWN.

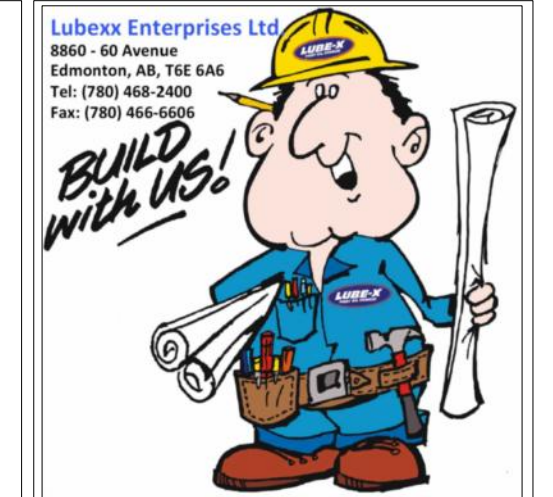
FIRE EXTINGUISHERS

1. FIRE EXTINGUISHERS SHALL BE 10 LBS DRY CHEMICAL, MULTI-PURPOSE TYPE (FLAG ABC-10), MOUNTED IN CABINET (KERN CE-950-1) ON MAIN FLOOR AND ON WALL HANGERS IN THE BASEMENT.

PIPING

1. THE FOLLOWING SPECIFICATIONS INDICATE QUALITY OF PIPING AND FITTINGS, CONFIRM WITH LOCAL AUTHORITIES THEIR ACCEPTANCE IN WRITING OF PLASTIC PIPIT IN THE BUILDING. WITH A COPY TO OWNER, AND THE DEVIATION OF SPECIFIED PIPE MATERIAL WILL NOT BE THE RESPONSIBILITY OF THE MECHANICAL ENGINEER.

SYSTEM	PIPE	FITTINGS	JOINTS
Storm and Sanitary Pipe and Vent	Cast Iron ABS PVC DMV (above grade only)	Hubless ABS PVC Cast Bronze	Clamped Solvent Weld Solvent Weld 50/50 Solder Tin- Lead
Domestic Hot and Cold Water	Type M Drawn Temper	Wrought or Cast Copper	95/5 Solder Tin- Antimony
Gas Pipe (under 50mm)	Threaded	Threaded	Schedule 40 Black Steel, Screwed



REVISIONS:	DATE:

ISSUED FOR DEVELOPMENT PERMIT	12.06.07
ISSUED FOR DESIGN REVIEW	11.08.14

SYMBOL LEGEND:

DEVELOPER:

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SEAL:

DURING TENDERING AND CONSTRUCTION, ANY AND ALL QUESTIONS ARE TO BE REFERRED TO TIM STADNYK OF LUBEXX ENTERPRISES LTD. AT 780-232-0425 (NOT THE CONSULTANTS) FOR CORRECT INTERPRETATION BEFORE PROCEEDING WITH THE WORK.

LUBEX
KINGSVIEW
MARKET SQUARE
3- BAY (RIGHT)
RAPID DRIVE- THRU
OIL CHANGE FACILITY

CITY: AIRDIRE PROVINCE: ALBERTA

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DRAWING TITLE:
SPECIFICATIONS
GENERAL NOTES
AND LEGENDS

SCALE: N.T.S.

DRAWN BY: Jlc

CHECKED: TRS

FILE NO.: 1108- 65

DRAWING ISSUE DATE:
August 27, 2012

DATE OF PLOT:
August 27, 2012

SHEET NO.:

M- 2