

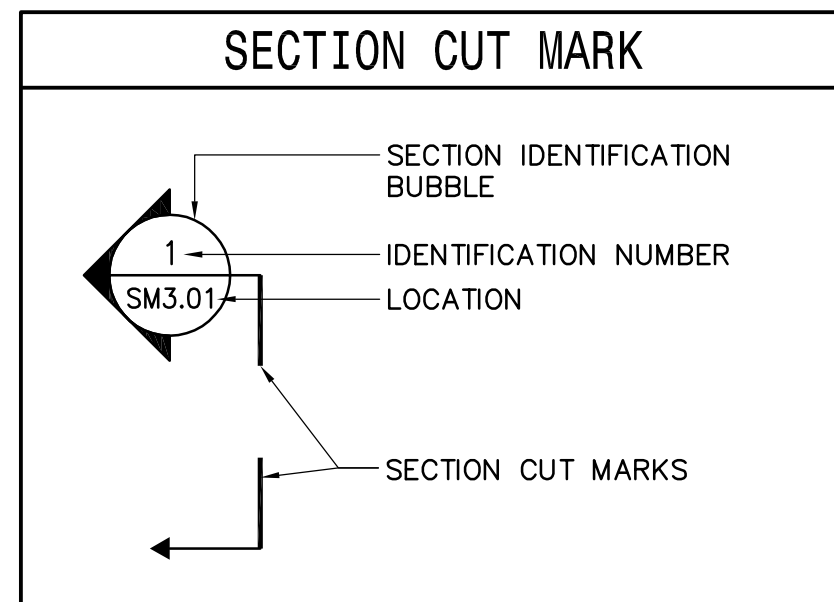
GENERAL	
SYMBOL	DESCRIPTION
	SUPPLY AIR (DOWN)
	RETURN AIR (DOWN)
	EXHAUST AIR (DOWN)
	TRANSFER AIR (DOWN)
	OUTDOOR AIR (DOWN)
	SUPPLY AIR (UP)
	RETURN AIR (UP)
	EXHAUST AIR (UP)
	TRANSFER AIR (UP)
	OUTDOOR AIR (UP)
	FIRE DAMPER
	MOTORIZED DAMPER
	BACKDRAFT DAMPER
	BALANCING DAMPER
	DUCT FLEXIBLE CONNECTION
	FIN TUBE RADIATION
	RADIATION PANEL
	DUCT c/w ACOUSTIC INSULATION
	AIR FLOW DIRECTION
	PROPELLER FAN
	CENTRIFUGAL FAN
	CENTRIFUGAL PUMP
	INLINE PUMP
	TURNING VANES
	AIR SEPARATOR (PLAN)
	AIR SEPARATOR (SECTION)

MISC. ABBREVIATIONS	
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
TYP	TYPICAL
AFF	ABOVE FINISHED FLOOR
EL	ELEVATION

MECHANICAL EQUIPMENT	
ABBREVIATIONS	DESCRIPTION
AC	AIR COMPRESSOR
ACC	AIR COOLED CHILLER
ACCU	AIR COOLED CONDENSING UNIT
ACR	AIR COMPRESSOR - RECIPROCATING
ACS	AIR COMPRESSOR - SCREW
ACU	AIR CONDITIONING UNIT
AD	AIR DRYER
AF	AIR FILTER
AHU	AIR HANDLING UNIT
AR	AIR RECEIVER
AS	AIR SEPARATOR
BF	BOILER - FLEXIBLE WATER TUBE
BFP	BACK FLOW PREVENTOR
BI	BOILER - INDUSTRIAL WATER TUBE
CC	COOLING COIL
CR	CONDENSATE RECEIVER
CT	COOLING TOWER
CU	CONDENSING UNIT
CWP	CHILLED WATER PUMP
DEA	DEAERATOR
DG	DOOR GRILLE
DWH	DOMESTIC WATER HEATER
DX	DIRECT EXPANSION COIL
EA	EXHAUST AIR
EC	EVAPORATIVE CONDENSER
EEW	EMERGENCY EYE WASH
EF	EXHAUST FAN
ETNK	EXPANSION TANK
EV	EVAPORATOR
FC	FAN COIL UNIT
FE	FIRE EXTINGUISHER
FF	FORCE FLOW UNIT HEATER
FHC	FIRE HOSE CABINET
FOA	FOAL AIR
GFT	GLYCOL FILL TANK
GH	GAS HEATER (BOILER)
GMP	GLYCOL MAKE-UP PACKAGE
GP	GLYCOL PUMP
HC	HEATING COIL
HEX	HEAT EXCHANGER
HP	HEAT PUMP
HPR	HIGH PRESSURE RECEIVER
HR	HOSE REEL STATION
HWP	HOT WATER PUMP
HWT	HOT WATER TANK
LP	LIQUID PUMP
LPR	LOW PRESSURE RECEIVER
LV	LOUVRE
MUA	MAKE-UP AIR UNIT
MV	TEMPERING VALVE
OA	OUTSIDE AIR
OS	OIL SEPARATOR
PP	FLUSHING WATER PUMP
PV	PRESSURE VESSEL
PVCD	POLYVINYL CHLORIDE DUCT
RCC	REFRIGERATION COMPRESSOR CENTRIFUGAL
ROR	REFRIGERATION COMPRESSOR RECIPROCATING
RCS	REFRIGERATION COMPRESSOR SCREW
RP	RADIANT PANEL
SBFP	STEAM BOILER FEED PUMP
SMP	SUMP PUMP

MECHANICAL EQUIPMENT (CONT...)	
ABBREVIATIONS	DESCRIPTION
RA	RETURN AIR
RF	RETURN FAN
RHC	REHEAT COIL
SA	SUPPLY AIR
SF	SUPPLY FAN
SI	STEAM INJECTOR
SL	SILENCER
TA	TRANSFER AIR
TB	TERMINAL BOX
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE
VAP	VACUUM PUMP
VT	VENTILATION AIR
WF	WALL FIN
WS	WATER SOFTENER

PLUMBING FIXTURES	
ABBREVIATIONS	DESCRIPTION
AN	ACID NEUTRALIZATION SYSTEM
CO	CLEAN OUT
DC	DRINKING COOLER
DF	DRINKING FOUNTAIN
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
EE	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
EES	EMERGENCY EYEWASH & SHOWER
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
GI	GREASE INTERCEPTOR
GS	GANG SINK
HB	HOSE BIBB
HD	HUB DRAIN
HR	HOSE REEL
L	LAVATORY
MS	MOP SINK
OI	OIL INTERCEPTOR
PH	POST HYDRANT
RD	ROOF DRAIN
SH	SHOWER
SK	SINK
SS	SERVICE SINK
TPD	TRAP PRIMER DEVICE
UR	URINAL
WC	WATER CLOSET
WH	WALL HYDRANT

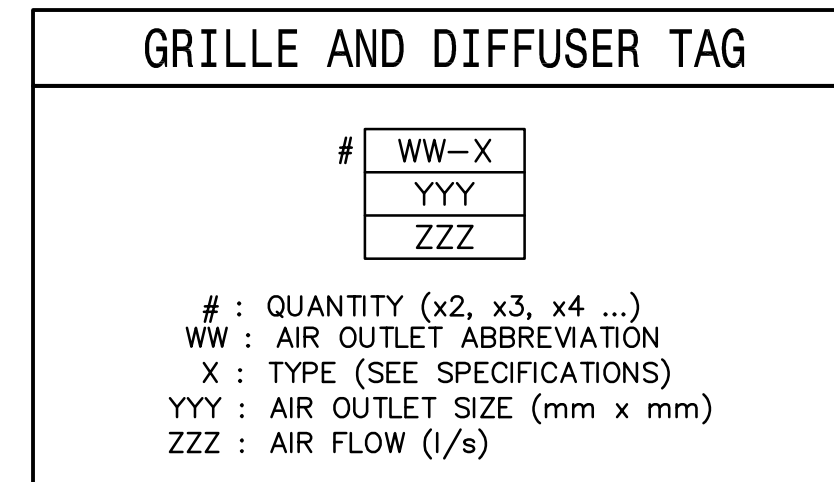


CONTROL SYMBOLS	
SYMBOL	DESCRIPTION
	THERMOSTAT
	HUMIDISTAT
	SWITCH
	TEMPERATURE SENSOR
	TEMPERATURE TRANSMITTER
	FREEZE STAT
	DISCONNECT SWITCH
	MOTOR
	ACTUATOR
	CURRENT SENSING RELAY
	PRESSURE SENSOR
	FLOW SWITCH
	LIMIT SWITCH
	SMOKE DETECTOR
	CARBON MONOXIDE SENSOR
	DIRECT INTERLOCK TO STARTER
	STARTER
	HUMIDITY SENSOR
	HUMIDITY HIGH LIMIT
	PRESSURE SWITCH
	FLOW SWITCH
	CURRENT SENSING RELAY
	BACK DRAFT DAMPER
	CARBON DIOXIDE SENSOR
	SCR ELECTRIC HEATING COIL
	INTERLOCK
	THREE PHASE WIRING
	SINGLE PHASE WIRING BY DIVISION 16
	CONTROL WIRING BY DIVISION 15
	CONTROL WIRING (LOW VOLTAGE)
	CONTROL WIRING (LINE VOLTAGE)
	LOW WATER CUT OFF DEVICE

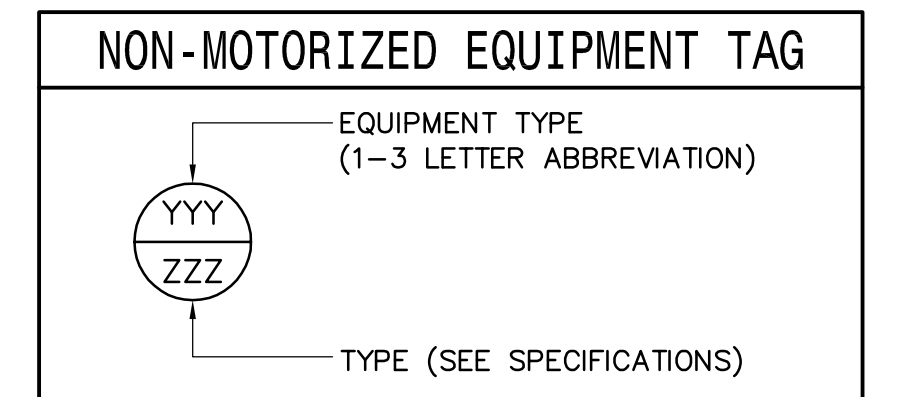
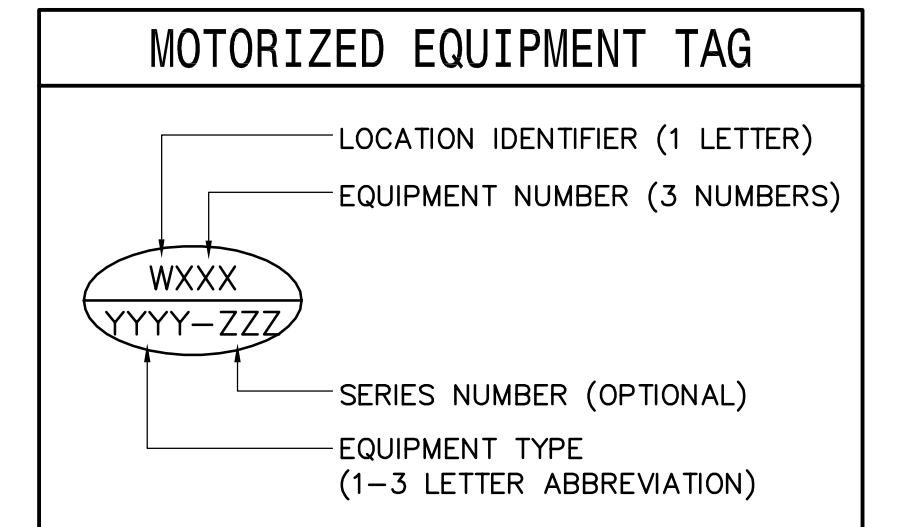
PLUMBING & DRAINAGE	
SYMBOL	DESCRIPTION
	FLOOR DRAIN (TYPE)
	TRENCH DRAIN
	ROOF DRAIN
	HOSE BIBB
	NON - FREEZE HOSE BIBB
	CLEANOUT (ABOVE GRADE)
	CLEANOUT (BELOW GRADE)
	P-TRAP
	RUNNING TRAP WITH CLEANOUT
	"T" CONNECTION
	TRAP PRIMING DEVICE
	DIRECTION OF FLUID FLOW

FIRE PROTECTION EQUIPMENT	
SYMBOL	DESCRIPTION
	UPRIGHT SPRINKLER HEAD
	PENDANT SPRINKLER HEAD
	SIDE WALL SPRINKLER HEAD
	DRY SPRINKLER HEAD
	FIRE HOSE CABINET
	FIRE DEPARTMENT CONNECTION
	FIRE EXTINGUISHER (10 kg)

VALVES AND PIPING SYMBOLS	
SYMBOL	DESCRIPTION
	THREE WAY VALVE SOLENOID VALVE
	GATE VALVE (NORMALLY OPEN)
	GATE VALVE (NORMALLY CLOSED)
	PLUG VALVE (NORMALLY OPEN)
	PLUG VALVE (NORMALLY CLOSED)
	BALL VALVE (NORMALLY OPEN)
	BALL VALVE (NORMALLY CLOSED)
	BUTTERFLY VALVE
	GLOBE VALVE
	DOUBLE LEAF CHECK VALVE
	CHECK VALVE
	BALL CHECK VALVE
	CIRCUIT BALANCING VALVE
	THERMOSTATICALLY CONTROLLED VALVE
	REDUCED PRESSURE BACKFLOW PREVENTER
	DOUBLE CHECK VALVE BACKFLOW PREVENTER
	PRESSURE REDUCING
	SUCTION DIFFUSER
	FOOT VALVE
	UNION
	FLANGE
	CENTRIC REDUCER
	ECCENTRIC REDUCER
	STRAINER
	CAP
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	PRESSURE GAUGE
	THERMOMETER W/ WELL



PIPING IDENTIFICATION	
SYMBOL	DESCRIPTION
	DOMESTIC COLD WATER SUPPLY
	DOMESTIC HOT WATER SUPPLY
	DOMESTIC HOT WATER RECIRC.
	SANITARY LINE
	SANITARY LINE (BURIED)
	SANITARY VENT
	STORM
	STORM (BURIED)
	COMPRESSED AIR
	COMPRESSED AIR (BURIED)
	GLYCOL HEATING SUPPLY
	GLYCOL HEATING RETURN
	CHILLED GLYCOL SUPPLY
	CHILLED GLYCOL RETURN
	GAS LINE
	VACUUM
	HOT WATER SUPPLY
	HOT WATER RETURN
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	REFRIGERANT SUCTION
	REFRIGERANT DISCHARGE
	PUMPED CONDENSATE
	BOILER BLOWDOWN
	MAKE-UP WATER
	FIRE PROTECTION WATER
	EXPANSION TANK EQUALIZER LINE
	RAIN WATER LEADER
	PIPE DROP
	PIPE RISE
	PIPE TEE DOWN
	PIPE TEE UP
	FLOW DIRECTION



APEGM

Certificate of Authorization

Earth Tech Canada Inc.

No. 730 Expiry: April 30, 2007

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EarthTech

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DRAWN BY	DL	APPROVED BY	JEH
SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	K. MARTENS
DATE	2006/05/15	DATE	2006/05/15

ENGINEER'S SEAL

ORIGINAL SIGNED BY

A. BURACHYNSKY

2006/05/15

CONSULTANT DRAWING NO.

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THE CITY OF WINNIPEG

WATER AND WASTE DEPARTMENT

ENGINEERING DIVISION

NEWPCC CENTRATE NUTRIENT TREATMENT NITROGEN REMOVAL FACILITY

CITY FILE NUMBER

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MECHANICAL LEGEND AND ABBREVIATIONS