

SINGLE LINE SYMBOLS AND CONTROL DIAGRAMS	
SYMBOL	DESCRIPTION
	CIRCUIT BREAKER, MOULDED CASE WITH THERMAL & MAGNETIC TRIPS
	MOTOR CIRCUIT PROTECTOR (MCP) STYLE BREAKER, WITH MAGNETIC TRIPS ONLY
	NEMA SIZE 1 STARTER WITH THERMAL OVERLOAD TRIP
	VARIABLE FREQUENCY DRIVE, C/W BYPASS MOTOR STARTER/CONTACTOR AND CONTROL TRANSFORMER
	SOFT STARTER, C/W BYPASS CONTACTOR AND CONTROL TRANSFORMER
	REDUCE VOLTAGE AUTOTRANSFORMER STARTER
	CURRENT TRANSFORMER
	CAPACITOR
	CONTROL POWER TRANSFORMER (CPT)
	FUSE
	FUSIBLE DISCONNECT SWITCH
	NON-FUSIBLE DISCONNECT SWITCH
	DRY-TYPE POWER TRANSFORMER (INDOOR)
	OIL-FILLED POWER TRANSFORMER (OUTDOOR)
	SEAL (EYS) FITTING C/W CHICO POWDER
	MOTOR STARTER (MS) COIL, WITH COIL SUPPRESSOR
	PILOT LIGHT, WHERE "X" INDICATES LENS COLOR: R=RED, W=WHITE, G=GREEN
	PUSH TO TEST STYLE PILOT LIGHT
	ELAPSE TIME METER, IN HOURS
	CONTROL RELAY (# DENOTES RELAY NUMBER)
	TERMINAL BLOCK
	SOLENOID VALVE
	CONTACT, N.O. AND N.C.
	LIMIT OR POSITION SWITCH, N.O AND N.C.
	PRESSURE SWITCH, N.O AND N.C.
	LEVEL OR FLOAT SWITCH, N.O AND N.C.
	TORQUE SWITCH, N.O AND N.C.
	PUSHBUTTON DEVICE, N.O AND N.C.
	SELECTOR SWITCH, 2-POSITION & 3-POSITION

LIGHTING AND POWER ELECTRICAL SYMBOLS	
SYMBOL	DESCRIPTION
	1'x4' FLUORESCENT LUMINAIRE. "X" DENOTES LUMINAIRE TYPE (REFER TO LUMINAIRE SCHEDULE).
	2'x4' FLUORESCENT LUMINAIRE. "X" DENOTES LUMINAIRE TYPE (REFER TO LUMINAIRE SCHEDULE).
	CEILING MOUNTED LUMINAIRE - "X" DENOTES TYPE
	WALL MOUNTED LUMINAIRE - "X" DENOTES TYPE
	EXIT LIGHT - "X" DENOTES TYPE
	LIGHT SWITCH C/W BACK BOX: - "S" INDICATES 2-WIRE SWITCH - "S3" INDICATES 3-WIRE SWITCH - "S4" INDICATES 4-WIRE SWITCH - "D" INDICATES DIMMER (SIZE TO SUIT) - "T" INDICATES MANUAL TIMER
	EMERGENCY REMOTE HEADS
	EMERGENCY BATTERY UNIT WITH REMOTE HEADS AND CHARGER (BU#)
	ELECTRICAL PANEL/ENCLOSURE
	DUPLEX RECEPTACLE
	SINGLE RECEPTACLE
	GFI TYPE DUPLEX RECEPTACLE
	SPLIT DUPLEX RECEPTACLE
	DRYER RECEPTACLE
	WELDING RECEPTACLE
	SINGLE PHASE MOTOR
	THREE PHASE MOTOR
	SINGLE PHASE MANUAL STARTER SWITCH WITH LOCK-OFF AND PILOT LIGHT
	MANUAL STARTER SWITCH C/W PILOT LIGHT AND HAND/OFF/AUTO SELECTOR SWITCH
	SINGLE PHASE MANUAL STARTER SWITCH WITH LOCK-OFF
	UNAUTHORIZED ENTRY KEYPAD UNIT
	MAGNETIC REED DOOR SWITCH
	MOTION SENSOR
	SMOKE DETECTOR
	TELEPHONE OUTLET
	JUNCTION BOX
	THERMOSTAT (VENTILATION)
	THERMOSTAT

GENERAL SYMBOLS	
	DETAIL SYMBOL: X = DETAIL NUMBER YZ = DRAWING NUMBER
	EQUIPMENT SUPPLIED BY ANOTHER DIVISION, INSTALLATION, WIRING AND CONDUIT BY DIVISION 16
	EXISTING OR RELOCATED EQUIPMENT, NEW WIRING AND CONDUIT BY DIVISION 16
	SYMBOL INDICATES A DEVICE LOCATION, SEE BELOW (# DENOTES LOCATION NUMBER)
	SYMBOL INDICATES MODIFICATION OR NEW WORK NOTE (# DENOTES NOTE NUMBER)
	MECHANICAL EQUIPMENT TAG

DEVICE LOCATIONS	
	DEVICE LOCATED IN MAIN PLC PANEL IN 2nd FLOOR ELECTRICAL ROOM
	DEVICE LOCATED IN THE FIELD
	DEVICE LOCATED IN MECHANICAL ROOM
	DEVICE LOCATED IN ELECTRICAL ROOM MAIN FLOOR
	DEVICE LOCATED IN ELECTRICAL ROOM 2nd FLOOR

STANDARD ABBREVIATIONS - ELECTRICAL	
ABBREVIATION	DESCRIPTION
A	AMPERES (CONTINUOUS)
AC	ALTERNATING CURRENT
ASYM	ASYMMETRICAL
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BU	BATTERY UNIT (EMERGENCY)
°C	DEGREE CELSIUS
C	CONDUCTOR
CCT	CIRCUIT
CH	COUNTER TOP HEIGHT
CH ₄	METHANE
CL ₂	CHLORINE RESIDUAL
CL	CENTERLINE
C/W	COMPLETE WITH
CO ₂	CARBON DIOXIDE
CPT	CONTROL POWER TRANSFORMER
CSA	CANADIAN STANDARDS ASSOCIATION
CT	CURRENT TRANSFORMER
Cu	COPPER
DC	DIRECT CURRENT
DISC	DISCONNECT
DO ₂	DISSOLVED OXYGEN
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EEMAC	ELECTRICAL AND ELECTRONIC MANUFACTURERS ASSOCIATION OF CANADA
EP	EXPLOSION PROOF (SUITABLE FOR CLASS I, ZONE 1)
ETM	ELAPSED TIME METER
ESA	ELECTRICAL SAFETY AUTHORITY
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
Hz	HERTZ
IEEE	INSTITUTE OF ELECTRICAL & ELECTRONIC ENGINEERS
INST	INSTANTANEOUS
I/O	INPUT/OUTPUT
ISB	INTRINSIC SAFETY BARRIER
JB	JUNCTION BOX
KAIC	KILO-AMP INTERRUPTING CAPACITY
kVA	KILOVOLTAMPERE
kW	KILOWATT
kWh	KILOWATT HOUR
LA	LIGHTNING ARRESTOR
LEL	LOWER EXPLOSIVE LIMIT
LOR	LOCAL-OFF-REMOTE
LUC	LOCAL UTILITY COMPANY
MAN	MANUAL
MCC	MOTOR CONTROL CENTRE
MH	MANHOLE
mm	MILLIMETER
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
MOT	MOTOR
N	NEUTRAL
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N/A	NON AUTOMATIC
N.O.	NORMALLY OPEN
N.C.	NORMALLY CLOSED
NP	NAMEPLATE
NTS	NOT TO SCALE
O ₂	OXYGEN (PURITY)
OESC	ONTARIO ELECTRICAL SAFETY CODE
O/H	OVERHEAD
O/L	OVERLOAD
OO	ON-OFF
PB	PUSHBUTTON
PDC	POWER DISTRIBUTION CENTRE
pH	pH CELL
PH OR Ø	PHASE OR DIAMETER
PLC	PROGRAMMABLE LOGIC CONTROLLER
REM	REMOTE
RGS	RIGID GALVANIZED STEEL
SV	SOLENOID VALVE
SN	SOLID NEUTRAL
SPDT	SINGLE POLE DOUBLE THROW
SPMDD	STANDARD PROCTOR MAXIMUM DRY DENSITY
SPST	SINGLE POLE SINGLE THROW
SW	SWITCH
SYM	SYMMETRICAL
TC	THERMOCOUPLE
TDC	TIME DELAY ON CLOSING
TDDO	TIME DELAY ON DROP-OUT
TDO	TIME DELAY ON OPENING
TDFU	TIME DELAY ON PICK-UP
TURB	TURBIDITY
TYP.	TYPICAL
U/G	UNDERGROUND
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
VT	VOLTAGE TRANSFORMER (FORMER PT)
WP	WEATHERPROOF

INSTRUMENTATION IDENTIFICATION LETTERS (ISA)			
FIRST LETTER		SUCCEEDING LETTERS	
MEASURED VARIABLE	MODIFIER	READOUT FUNCTION	OUTPUT/MODIFIER
A ANALYSIS	-	ALARM	-
B BURNER	-	-	-
C CONDUCTIVITY	-	CONTROLLER	CONTROL
D DENSITY	DIFFERENTIAL	DIFFERENTIAL	-
E VOLTAGE - EMF	-	PRIMARY ELEMENT	-
F FLOW RATE	RATIO	RATIO	-
G STATUS	-	GLASS	-
H HAND - MANUAL	HAND	-	HIGH
I CURRENT	I	INDICATE	-
J POWER	SON	-	-
K TIME OR TIME SCL	-	-	CONTROL SIN
L LEVEL	-	LIGHT - PILOT	LOW
M MOISTURE	MOMENTARY	MOMENTARY	MODE OR INTERM
N -	ANNUNCIATION	-	ANNUNCIATION
O -	-	-	-
P PRESSURE OR VAC	-	POINT - TEST CONNECTION	-
Q QUANTITY	INTEGRATE	INTEGRATE OR TOTALIZE	-
R RADIATION	-	RECORD OR PRINT	-
S SPEED OR FREQ	SAFETY	-	SWITCH
T TEMPERATURE	-	-	TRANSMIT
U MULTIFUNCTION	-	MULTIFUNCTION	MULTIFUNCTION
V VIBRATION	-	-	VALVE, DAMPER
W WEIGHT OR FORCE	-	WELL	-
X STATUS	-	-	-
Y EVENT, STATE	-	-	RELAY, COMPUTE
Z POSITION	-	-	DRIVE, ACTUATOR

DRAWING LIST - ELECTRICAL	
E1	ELECTRICAL LEGEND AND DRAWING LIST
E2	PANEL AND LUMINAIRE SCHEDULES
E3	ELECTRICAL SINGLE LINE DIAGRAM
E4	ELEMENTARY CONTROL WIRING DIAGRAMS - SHEET 1
E5	ELEMENTARY CONTROL WIRING DIAGRAMS - SHEET 2
E6	INSTRUMENTATION LOOP WIRING DIAGRAM & ELEMENTARY CONTROL WIRING DIAGRAMS
E7	PLC CONFIGURATION & PANEL LAYOUTS
E8	BUILDING ELECTRICAL EQUIPMENT LAYOUT - REMOVAL
E9	BUILDING ELECTRICAL EQUIPMENT LAYOUT - PROPOSED LIGHTING AND HVAC
E10	BUILDING ELECTRICAL EQUIPMENT LAYOUT - PROPOSED POWER
E11	BUILDING ELECTRICAL EQUIPMENT LAYOUT - PROPOSED INSTRUMENTATION
E12	BUILDING ELECTRICAL EQUIPMENT LAYOUT - PROPOSED MECHANICAL ROOM HVAC LAYOUT

MASTER ELECTRICAL LEGEND
ALL SYMBOLS/DEVICES/ABBREVIATIONS LISTED MAY NOT APPLY

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3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project.
4. Drawing revision must be noted "Issued For Construction" before any work commences

Issue / Revision	Date dd/mm/yyyy
1 ISSUED FOR 66% SUBMISSION	06/09/2012
2 ISSUED FOR 99% SUBMISSION	JANUARY 2013
3 ISSUED FOR TENDER	FEBRUARY 2013
4 REVISED AS PER ADDENDUM 1 TO 4 AND ISSUED FOR CONSTRUCTION	APRIL 2013

PERMIT TO PRACTICE
Runge & Associates Inc.
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PERMIT NUMBER: P617
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COMMUNITY & GOVERNMENT SERVICES
RANKIN INLET
SEWAGE TREATMENT PLANT

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ELECTRICAL LEGEND AND DRAWING LIST
Drawn By: T.I.
Scale: AS SHOWN
Checked By: S.R.T.
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