TOWN OF LUNENBURG

WASTEWATER TREATMENT PLANT UPGRADES & EXPANSION

CONTRACT NO. 240800.00

ADDENDUM NO. 1

February 4, 2025

The following changes or modifications shall be made to the Tender Documents:

TO THE SPECIFICATIONS

SECTION 26 50 00 – LIGHTING EQUIPMENT

Page 4, add new subsection: 2.3.5 and Part 3 as follows:

.1 LED Luminaire Design L5:
- .1 Vapour proof, enclosed and gasketed, wide distribution, LED luminaire suitable for pendant mounting in a Zone 1 hazardous environment.
- .2 Input voltage: 120 V, 60 Hz.
- .3 Nominal dimensions: 610 mm long.
- .4 Nominal fixture lumens: 3800 lumens.
- .5 Nominal fixture wattage: 40W.
- .6 Light source: LED, 4000K, minimum 80 CRI.
- .7 LED driver: electronic, <20% THD, integral surge protection.
- .8 Housing: copper free (less than 0.4%) die cast aluminum with electrostatically applied, baked powder polyester paint, type 316 stainless steel or fibreglass reinforced resin.
- .9 Optics: prismatic impact resistant smooth glass lens.
- .10 Options: all exposed metal surfaces shall be of type 316 stainless steel or aluminum.
- .11 Include mounting brackets to allow for light to be suspended from ceiling.
- .12 Acceptable material:
  - .1 Aimlite C4LA-L.
  - .2 Dialight Safelight LED Linear.
  - .3 LDPI LEXS series.
  - .4 Approved equivalent.

Part 3 - Execution

3.1 INSTALLATION

.1 Locate and install luminaires as indicated. Provide and install all necessary hangars, supports, fittings, etc. as necessary for a complete installation.

.2 Coordinate installation with all other services.

3.2 WIRING

.1 Connect luminaires to lighting circuits as indicated.

.2 Each light fixture to have a separate "fixture drop" installed and connected to hard wired junction box or outlet box in ceiling space.

.3 Recessed and/or surface type light fixtures are not to be wired in a "daisy-chain" manner or have their power sources looped between fixtures, unless the fixtures are installed end-to-end.

3.3 LUMINAIRE SUPPORTS

.1 For suspended ceiling installations support luminaires independently of ceiling using an approved supporting method. Supporting luminaires from any part of the ceiling system is strictly prohibited.

3.4 LUMINAIRE ALIGNMENT

.1 Align luminaires mounted in continuous rows to form straight uninterrupted line.

.2 Align luminaires mounted individually parallel or perpendicular to building grid lines.

3.5 LUMINAIRE CLEANING

.1 Clean all luminaires one (1) week prior to applying for Ready for Takeover.

.2 Replace blemished, damaged or unsatisfactory luminaires as directed.

SECTION 26 52 01 – UNIT EQUIPMENT FOR EMEGENCY LIGHTING EQUIPMENT

Page 2, add new subsection 2.3 as follows:

2.3 BATTERY UNIT + EXIT COMBO – TYPE EML3

.1 Supply voltage: 120 V ac.
.2 Output voltage: 12 V dc.
.3 Operating time: 60 minutes based on actual DC load plus 25%.
.4 Battery: sealed, maintenance free, ten (10) year life expectancy.
.5 Charger: solid state, multi-rate, voltage/current regulated, inverse temperature compensated, short circuit protected with regulated output of plus or minus 0.01 V for plus or minus 10% input variations.
.6 Solid state transfer circuit.
.7 Low voltage disconnect: solid state, modular, operates at 80% battery output voltage.
.8 Lamp heads: two (2) per unit. Lamp type: LED, 6W nominal, MR-16.
.9 Enclosure: suitable for direct mounting to wall. Enclosure to be hazardous area rated for a Zone 1 rated location, gas groups IIA and IIB rating and a minimum T3 temperature code.
.10 Auxiliary equipment:
  .1 Test switch.
  .2 Self diagnostic circuitry.
.11 Acceptable material:
  .1 Lumacell RG-X LED series.
  .2 Killark EBS series.
  .3 Aimlite CHXZ-CSHZ series.

SECTION 40 90 00 – PRIMARY PROCESS INSTRUMENTATION DEVICES

Page 13, add new subsection 2.7 as follows:

2.7 TEMPERATURE INSTRUMENTS

.1 Temperature measuring instruments to generally be ranged so that full scale reading will equal 200% of maximum operating temperature, or 120% of system design temperature, whichever is greater.
.2 2-wire, "smart" microprocessor-based electronics with HART, loop powered (24 VDC), with a 4-20mA output signal.
.3 Capable of local and remote calibration, with continuous self-diagnostics.
.4 Enclosure to be NEMA 4X, cast aluminum complete with terminal blocks and 19mm conduit entry.
.5 Temperature elements must be Resistance Temperature Detectors (RTDs) and integral to the Temperature Transmitter. Accuracy to be minimum 0.01% at 0°C. Temperature elements to be 3-wire construction, 6.35mm O.D. sensor, of 316SS construction.
  .1 Acceptable manufacturers: ABB, Rosemount, Siemens, Foxboro, Endress and Hauser or approved equivalent. Inclusion on the list does

not exempt the requirement that any proposed model must be compliant with the above equipment specifications.

WASTEWATER TREATMENT PLANT UPGRADES AND EXPANSION INSTRUMENTATION AND CONTROL EQUIPMENT LIST (AT THE END OF SECTION 41 91 00)

Delete 240800.00-J05 and replace with new 240800.00-J05, attached.

SECTION 44 41 13 – FINE SCREENING EQUIPMENT

Page 2, delete subsections 1.4.3 and 1.4.4.

SECTION 44 46 16 – SLUDGE DEWATERING EQUIPMENT

Page 4, delete subsection 2.3.1 and replace as follows:

.1 General: shaftless screw conveyor is existing and designed to transfer dewatered municipal sludge as shown on the drawings.

TO THE DRAWINGS

DRAWING C02 – PROPOSED SITE GRADING
On PLAN – FOUNDATION DRAIN OUTFALL, delete note that reads "±50m 150ø PVC @1.00% TO OUTFALL" and replace with "±50m 150ø PVC @0.50% TO OUTFALL"

SKETCH ESK-01

Add new Sketch ESK-01 – Junction Box Post Detail dated January 7, 2024, attached.

DRAWING E02 – UNIT EQUIPMENT FOR EMEGENCY LIGHTING EQUIPMENT

Delete instrumentation tags 'LIT-311' and 'LSH-311' from plan. These are shown on new drawing sheet E16 now.

Change "JUNCTION BOX" SYMBOL SHOWN ON DUCTBANK 'J' to "PULL BOX" LOCATED BY THE EXISTING BIOFILTER PAD. Add the following note to Detail 1 "REFER TO SKETCH ESK-01 FOR MOUNTING REQUIREMENTS".

DRAWING E05 – SINGLE LINE DIAGRAM PROPOSED MODIFICATIONS SHEET 3 OF 3

Replace utility transformer description "600/347V SERVICE PAD MOUNT TRANSFORMER BY UTILITY" with "600/347V 750KVA (MAX) SERVICE PAD MOUNT TRANSFORMER BY UTILITY".

DRAWING E07 – HEADWORKS AREA AND ELECTRICAL ROOMS

Add new heat trace power JB (NEMA 4X, ZONE 1, GAS GROUP IIA & IIB RATED) in Headworks room for connection to Screening equipment Heat trace (Escalator chute, drain pan and discharge tube of the Rotopac Type RPW).

Add new heat trace power cable 2x1C #10 AWG RW90 + #12 AWG bond in 21mm conduit from VCC-01 to new Heat trace power JB in headworks room (mentioned above).

DRAWING E11 – SCHEMATICS 2 OF 2, LIGHTING SCHEDULE AND TABLES

Delete Note 1 and replace with "REFER TO SECTION 26 52 01 FOR ADDITIONAL REQUIREMENTS."

Under lighting schedule general description, L4 TYPE, delete "600MM LONG" and replace with "1219MM LONG".

DRAWING E12 – ELECTRICAL DETAILS SHEET 1 OF 4

Detail 4, Detail Note # 2, Replace "26 91 00" with "40 91 00".

DRAWING E13 – ELECTRICAL DETAILS SHEET 2 OF 4

Add new Note 3 as follows: "UTILITY TRANSFORMER KVA SIZE TO BE CONFIRMED WITH UTILITY PRIOR TO INSTALLATION OF CONCRETE PAD, BOLLARDS AND GROUNDING. SEE DETAILS 1, 2, 3 AND 4 FOR ADDITIONAL INFORMATION"

DRAWING E14 – ELECTRICAL DETAILS SHEET 3 OF 4

Add a third conduit to the control/communication portion of the SECTION D. CHANGE "1 x CONTROL" TO "2 X CONTROL".

DRAWING E16 – BIOREACTOR TANK PLAN

Add new Drawing E16 - Bioreactor Tank Plan Dated December 18, 2024, attached.

DRAWING J01 – CONTROL AND BUILDING NETWORK BLOCK DIAGRAM AND I/O LIST

Add to IO LIST – PLC CONTROL PANEL THE FOLLOWING UNDER "ERV/HRV-1":
1 DO (RELAY – DRY CONTACT) FOR ERV MODULATING DAMPER FACE
1 DO (RELAY – DRY CONTACT) FOR ERV MODULATING DAMPER BYPASS

DRAWING J02 – CABLING DIAGRAM SHEET 1 OF 3

Add cable VCC03B-2 (8 X 1C#14 AWG RW90 +#14 AWG BOND IN CONDUIT) FROM VCC-03B TO VCC-03A, CABLE TYPE TO BE (CONTROL – ESD). Include in "ROUTE IN UNDERGROUND CONDUITS" REFERENCE.

DRAWING J03 – CABLING DIAGRAM SHEET 2 OF 3

Delete Cable TIT400-1 from PLC-01 TO TIT-400 and delete INSTRUMENT TIT-400.
Delete CABLE JB05-1 from VCC-01 TO JB-05.
Add DCN-110 AND CABLE (2 X 1C#14 AWG RW90 +#14 AWG BOND IN CONDUIT) WITH TAG DCN110-1 FROM DCN-110 TO JB-05.
Add DCN-112 AND CABLE (2 X 1C#14 AWG RW90 +#14 AWG BOND IN CONDUIT) WITH TAG DCN112-1 FROM DCN-112 TO JB-05.
Add DCN-111 AND CABLE (2 X 1C#14 AWG RW90 +#14 AWG BOND IN CONDUIT) WITH TAG DCN111-1 FROM DCN-111 TO JB-05.
Revise "CABLE JB05-2 FROM "30X1C #14 AWG RW90 + #14 AWG BOND IN CONDUIT" to "40X1C #14 AWG RW90 + #14 AWG BOND IN CONDUIT"

DRAWING J04 – CABLING DIAGRAM SHEET 3 OF 3

Add new INSTRUMENT TIT-400 in the existing process room area with the description "ROOM TEMPERATURE"
Add CABLE TIT400-1 as follows:1 PR #16 AWG TW. SH. CIC CABLE + #14 AWG BOND IN CONDUIT FROM JB-06 TO TIT-400. CONNECT SIGNAL BACK TO PLC-01 ON HOMERUN ANALOG SIGNALS."
Delete Cable Tag "JB09-1" and replace with cable tag "JB06-1"
Delete cable tag "JB09-2" and replace with cable tag "JB06-2". Change cable type from "16 PR #16 AWG TW. SH. CIC CABLE +#14 AWG BOND IN CONDUIT" to "8 PR #16 AWG TW. SH. CIC CABLE +#14 AWG BOND IN CONDUIT"
Add existing enclosure ERV/HRV-1 in the existing process room area.
Add cable ERV/HRV1-01 "10 X 1C #14 AWG RW90 + #14 AWG BOND IN CONDUIT" from JB-06 TO ERV/HRV-1

DRAWING M04 - MECHANICAL HVAC - NEW

Revise Note 1 to read:

1. EXISTING ENGINEERED AIR ERV IS COMPLETE WITH INTEGRAL CONTROLLER. COORDINATE WITH ENGINEERED AIR SUCH THAT THE ENGINEERED AIR FACTORY PROVIDE A WIRING DIAGRAM TO ALLOW 'FREE COOLING' WHEN REQRUIED IN THE ROOM. CONTACT ENGINEERED AIR IN DARTMOUTH, NS FOR THIS WORK. PROVIDE

A COOLING THERMOSTAT MOUNTED ON THE SIDE OF THE ERV AND SET COOLING AT 25C. WHEN THE COOLING IS REQUIRED, THE THERMOSTAT WILL CLOSE A CIRCUIT TO ALLOW THE POWER TO THE FACE AND BYPASS DAMPERS TO BE DISRUPTED. PROVIDE LABEL ABOVE COOLING THERMOSTAT INDICATING THAT SET POINT IS TO BE MAINTAINED AT 25C.

CBCL Limited
February 04, 2025

Tag No.	Description	Spec. Section	P&ID Dwg. #	Cabling Dwg. #	Layout Dwg. #	Mntg	Location Conditions	Instrument Specific Specs
UL-603B	Red Alarm Beacons	40 90 00	-	J03	E08	Wall Mntd	Zone 2, IIA & IIB,Indoors	NEMA 4X, STEADY RED WARNING LIGHTS, LED, 120VAC, c/w WIRE GUARDS, SUITABLE FOR HAZARDOUS AREA
UL-603A	Green Alarm Beacons	40 90 00	-	J03	E08	Wall Mntd	Zone 2, IIA & IIB,Indoors	NEMA 4X, STEADY GREEN WARNING LIGHTS, LED, 120VAC, c/w WIRE GUARDS, SUITABLE FOR HAZARDOUS AREA
UL-601B	Red Alarm Beacons	40 90 00	-	J03	E08	Wall Mntd	Unclassified, Indoors	NEMA 12, STEADY RED WARNING LIGHTS, LED, 120VAC, c/w WIRE GUARDS
UL-601A	Green Alarm Beacons	40 90 00	-	J03	E08	Wall Mntd	Unclassified, Indoors	NEMA 12, STEADY GREEN WARNING LIGHTS, LED, 120VAC, c/w WIRE GUARDS
SD-01	Smoke Detector - New Electrical Room	40 90 00	-	J03	E07	Ceiling Mntd	Unclassified, Indoors	SMOKE DETECTOR C/W RELAY BASE (120VAC RATED NC CONTACT)
PLC-01	PLC Control Panel (PLC-01)	40 91 00	P03-P05	J01-J04	E07	Stand Mntd	Unclassified, Indoors	NEMA 12, TOP ENTRY, PLC I/O CONTROL PANEL, SIZED TO SUIT
PIT-431	Pressure Transmitter - Blower Header	40 90 00	P04	J04	E08	Inline	Unclassified, Indoors	NEMA 4X, 4-20mA OUTPUT SIGNAL, CALIBRATED RANGE OF 0 TO 20 PSI
PIT-411	Pressure Transmitter - Blower Header	40 90 00	P04	J04	E08	Inline	Unclassified, Indoors	NEMA 4X, 4-20mA OUTPUT SIGNAL, CALIBRATED RANGE OF 0 TO 20 PSI
LSH-512	Float Switch - UV-510 Channel	46 66 00	P05	J04	E08	Suspended	Unclassified, Indoors	SUSPENDED FLOAT TYPE, INTEGRAL CABLE (LENGTH TO SUIT)
LSH-311	Float Switch - High Inlet Level Alarm	40 90 00	P04	J03	E02	Suspended	Zone 2, IIA & IIB, Outdoors	SUSPENDED FLOAT TYPE, INTEGRAL CABLE (LENGTH TO SUIT) C/W MANUFACTURER REQUIRED INTRINSIC BARRIER, SUITABLE FOR HAZARDOUS AREA
LSH-223	Float Switch - SBR Tank No. 2 TK-220	46 53 53	P04	J02	E09	Suspended	Zone 2, IIA & IIB, Outdoors	SUSPENDED FLOAT TYPE, INTEGRAL CABLE (LENGTH TO SUIT) C/W MANUFACTURER REQUIRED INTRINSIC BARRIER, SUITABLE FOR HAZARDOUS AREA
LSH-213	Float Switch - SBR Tank No. 1 TK-210	46 53 53	P04	J02	E09	Suspended	Zone 2, IIA & IIB, Outdoors	SUSPENDED FLOAT TYPE, INTEGRAL CABLE (LENGTH TO SUIT) C/W MANUFACTURER REQUIRED INTRINSIC BARRIER, SUITABLE FOR HAZARDOUS AREA
LSH-113	Float Switch - Fine Screen	44 41 13	P03	J03	E07	Suspended	Zone 1, IIA & IIB, Indoors	SUSPENDED FLOAT TYPE, INTEGRAL CABLE (LENGTH TO SUIT) C/W MANUFACTURER REQUIRED INTRINSIC BARRIER, SUITABLE FOR HAZARDOUS AREA
LIT-311	Level Transmitter - Upstream Level	40 90 00	P04	J03	E02	Stand Mntd	Zone 2, IIA & IIB, Outdoors	NEMA 4X, LEVEL TRANSMITTER CALIBRATED ON-SITE TO MATCH "INSTALLED" CONDITIONS, SUITABLE FOR HAZARDOUS AREA
LIT-115	Level Transmitter - Fine Screen	44 41 13	P03	J03	E07	Wall Mntd	unclassified Indoors	NEMA 4X, LEVEL TRANSMITTER CALIBRATED ON-SITE TO MATCH "INSTALLED" CONDITIONS, SUITABLE FOR HAZARDOUS AREA
LE-222	Pressure Transducer (Level) - SBR Tank No. 2 TK-220	46 53 53	P04	J02	E09	Suspended	Zone 1, IIA & IIB, Outdoors	PRESSURE TRANSDUCER SENSOR c/w 10m OF INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
LE-222	Level Transmitter - SBR Tank No. 1 TK-210	46 53 53	P04	J02	E09	Suspended	Zone 2, IIA & IIB, Outdoors	SUSPENDED LEVEL ELEMENT, INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
LE-212	Pressure Transducer (Level) - SBR Tank No. 1 TK-210	46 53 53	P04	J02	E09	Suspended	Zone 1, IIA & IIB, Outdoors	PRESSURE TRANSDUCER SENSOR c/w 10m OF INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
LE-212	Level Transmitter - SBR Tank No. 1 TK-210	46 53 53	P04	J02	E09	Suspended	Zone 2, IIA & IIB, Outdoors	SUSPENDED LEVEL ELEMENT, INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
LE-115B	Level Element - Fine Screen	44 41 13	P03	J03	E07	Suspended	Zone 1, IIA & IIB, Indoors	SUSPENDED LEVEL ELEMENT, INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
LE-115A	Level Element - Fine Screen	44 41 13	P03	J03	E07	Suspended	Zone 1, IIA & IIB, Indoors	SUSPENDED LEVEL ELEMENT, INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
LCP-601	Ventilation Control Panel (EF-1)	26 29 03	0	J04	E06	Wall Mntd	Unclassified, Indoors	NEMA 12, BOTTOM & TOP ENTRY CABLES, MOTOR STARTER CONTROL PANEL, SIZED TO SUIT
LCP-600	Relay Control Panel - Gas Detection & Alarms	40 91 00	-	J03	E08	Wall Mntd	Unclassified, Indoors	NEMA 12, BOTTOM & TOP ENTRY CABLES,GAS DETECTION RELAY CONTROL PANEL, SIZED TO SUIT
JB-06	Termination Junction Box	40 91 00	-	J04	E08	Wall Mntd	Unclassified, Indoors	NEMA 4X, BOTTOM ENTRY CABLES, TERMINATION JUNCTION BOX
JB-05	Termination Junction Box	40 91 00	-	J03	E07	Wall Mntd	Zone 1, IIA & IIB, Indoors	NEMA 4X, BOTTOM ENTRY CABLES, TERMINATION JUNCTION BOX, SUITABLE FOR HAZARDOUS AREA
JB-04	Termination Junction Box	40 91 00	-	J03	E08	Stand Mntd	Unclassified, Indoors	NEMA 4X, BOTTOM ENTRY CABLES, TERMINATION JUNCTION BOX
JB-03	Termination Junction Box	40 91 00	-	J04	E08	Stand Mntd	Unclassified, Indoors	NEMA 4X, BOTTOM ENTRY CABLES, TERMINATION JUNCTION BOX
JB-02	Termination Junction Box	40 91 00	-	J02	E09	Stand Mntd	Zone 2, IIA & IIB, Outdoors	NEMA 4X, BOTTOM ENTRY CABLES, TERMINATION JUNCTION BOX, SUITABLE FOR HAZARDOUS AREA
JB-01	Termination Junction Box	40 91 00	-	J02	E09	Stand Mntd	Zone 2, IIA & IIB, Outdoors	NEMA 4X, BOTTOM ENTRY CABLES, TERMINATION JUNCTION BOX, SUITABLE FOR HAZARDOUS AREA
HS-430A/HS-430B/XI-430	Local Station - H/O/A with Speed Pot with Indicator Lights	26 29 03	P04	J03	E08	Stand Mntd	Unclassified, Indoors	NEMA 4X, LOCAL CONTROL STATION, c/w MAINTAINED 3-POSITION "H/O/A" SELECTOR SWITCH, 0-100% SPEED POTENTIOMETER (MUST BE COMPATIBLE WITH VFD), GREEN PILOT LIGHTS (LED), 120VAC
HS-420A/HS-420B/XI-420	Local Station - H/O/A with Speed Pot with Indicator Lights	26 29 03	P04	J03	E08	Stand Mntd	Unclassified, Indoors	NEMA 4X, LOCAL CONTROL STATION, c/w MAINTAINED 3-POSITION "H/O/A" SELECTOR SWITCH, 0-100% SPEED POTENTIOMETER (MUST BE COMPATIBLE WITH VFD), GREEN PILOT LIGHTS (LED), 120VAC
HS-410A/HS-410B/XI-410	Local Station - H/O/A with Speed Pot with Indicator Lights	26 29 03	P04	J03	E08	Stand Mntd	Unclassified, Indoors	NEMA 4X, LOCAL CONTROL STATION, c/w MAINTAINED 3-POSITION "H/O/A" SELECTOR SWITCH, 0-100% SPEED POTENTIOMETER (MUST BE COMPATIBLE WITH VFD), GREEN PILOT LIGHTS (LED), 120VAC
HS-226A/XI-226	Local Station - H/O/A with Indicator Lights	26 29 03	P04	J02	E09	Stand Mntd	Unclassified, Outdoors	NEMA 4X, LOCAL CONTROL STATION, c/w MAINTAINED 3-POSITION "H/O/A" SELECTOR SWITCH C/W GREEN PILOT LIGHTS (LED), 120VAC
HS-216A/XI-216	Local Station - H/O/A with Indicator Lights	26 29 03	P04	J02	E09	Stand Mntd	Unclassified, Outdoors	NEMA 4X, LOCAL CONTROL STATION, c/w MAINTAINED 3-POSITION "H/O/A" SELECTOR SWITCH C/W GREEN PILOT LIGHTS (LED), 120VAC
HRN-602	Alarm Horn - Dewatering Room	40 90 00	-	J03	E08	Wall Mntd	Zone 2, IIA & IIB, Indoors	NEMA 4X, ALARM HORM, 120VAC, SUITABLE FOR HAZARDOUS AREA
FY-114	Solenoid - Fine Screen	44 41 13	P03	J03	E07	Inline	Zone 1, IIA & IIB, Indoors	SOLENOID VALVE, SUITABLE FOR HAZARDOUS AREA
FY-113	Solenoid - Fine Screen	44 41 13	P03	J03	E07	Inline	Zone 1, IIA & IIB, Indoors	SOLENOID VALVE, SUITABLE FOR HAZARDOUS AREA
FSL-604	Air Flow Switch	Div 23	0	J03	E08	Inline	Zone 2, IIA & IIB,Indoors	NEMA 4X, AIR SWITCH SET TO TRIP BELOW 6 AIR CHANGERS PER HOUR, SUITABLE FOR HAZARDOUS AREA
FMV-423	Motor Operated Valve - Blower	46 53 53	P04	J04	E08	Inline	Unclassified, Indoors	NEMA 12, "OPEN" AND "CLOSE" COMMANDS, "OPENED", "CLOSED" AND "IN AUTO" STATUS BACK
FMV-413	Motor Operated Valve - Blower	46 53 53	P04	J04	E08	Inline	Unclassified, Indoors	NEMA 12, "OPEN" AND "CLOSE" COMMANDS, "OPENED", "CLOSED" AND "IN AUTO" STATUS BACK
DCN-430	Local Disconnect for Blower M-430	26 28 26	-	J04	E08	Wall Mntd	Unclassified, Indoors	NEMA 12, LOCAL DISCONNECT C/W AUX. CONTACT

Rev	Date	Description
1	Feb-24	Issued for Addendum 1
0	Nov-24	Issued for Tender

By JRK Ckd LTH Appr. SHE

Date: Nov-24	Office: HFX
Designed: JRK	
Project No. : 240800	
Specification No.: 40 91 01	

Title: WASTEWATER TREAMENT PLANT UPGRADES & EXPANSION
INSTRUMENTATION & CONTROLS EQUIPMENT LIST

Client: TOWN OF LUNENBURG

Project: WWTP UPGRADE & EXPANSION

Drawing No. 240800.00-J05

Rev. 1

Tag No.	Description	Spec. Section	P&ID Dwg. #	Cabling Dwg. #	Layout Dwg. #	Mntg	Location Conditions	Instrument Specific Specs
DCN-423	Local Disconnect for FMV-423	26 28 26	-	-	E08	Wall Mntd	Unclassified, Indoors	NEMA 12, LOCAL DISCONNECT
DCN-420	Local Disconnect for Blower M-420	26 28 26	-	J04	E08	Wall Mntd	Unclassified, Indoors	NEMA 12, LOCAL DISCONNECT C/W AUX. CONTACT
DCN-413	Local Disconnect for FMV-413	26 28 26	-	-	E08	Wall Mntd	Unclassified, Indoors	NEMA 12, LOCAL DISCONNECT
DCN-410	Local Disconnect for Blower M-410	26 28 26	-	J04	E08	Wall Mntd	Unclassified, Indoors	NEMA 12, LOCAL DISCONNECT C/W AUX. CONTACT
DCN-221	Local Disconnect for M-221 Decanter	26 28 26	-	-	E09	Stand Mntd	Unclassified, Outdoors	NEMA 4X, LOCAL DISCONNECT
DCN-220	Local Disconnect for M-220 WAS Pump No. 2	26 28 26	-	-	E09	Stand Mntd	Unclassified, Outdoors	NEMA 4X, LOCAL DISCONNECT
DCN-211	Local Disconnect for M-211 Decanter	26 28 26	-	-	E09	Stand Mntd	Unclassified, Outdoors	NEMA 4X, LOCAL DISCONNECT
DCN-210	Local Disconnect for M-210 WAS Pump No. 1	26 28 26	-	-	E09	Stand Mntd	Unclassified, Outdoors	NEMA 4X, LOCAL DISCONNECT
AIT-600B	H2S Analyzer Transmitter - Dewatering Room	40 90 00	-	J03	E08	Wall Mntd	Zone 2, IIA & IIB, Indoors	NEMA 4X , H2S ANALYZER, 0-50 ppm, SINGLE CHANNEL, FAULT AND ALARM DRY CONTACTS, COMPATIBLE WITH SELECTED SENSOR, SUITABLE FOR HAZARDOUS AREA
AIT-600A	LEL Analyzer Transmitter - Dewatering Rom	40 90 00	-	J03	E08	Wall Mntd	Zone 2, IIA & IIB, Indoors	NEMA 4X, METHANE ANALYZER, 0-100% LEL, SINGLE CHANNEL, FAULT AND ALARM DRY CONTATS, COMPATIBLE WITH SELECTED SENSOR, SUITABLE FOR HAZARDOUS AREA
AIT-516	TSS/pH/Temperature Analyzer Transmitter	40 90 00	P05	J04	E08	Wall Mntd	Unclassified, Indoors	NEMA 4X, ANALYZER, 4-20mA OUTPUT SIGNAL, CALIBRATED RANGE OF -2 TO 14 pH
AIT-224	TSS/DO/Temp Analyzer Transmitter - SBR Tank No. 2 TK	46 53 53	P04	J02	E09	Stand Mntd	Zone 2, IIA & IIB, Outdoors	NEMA 4X, ANALYZER, 4-20mA OUTPUT SIGNAL, CALIBRATED RANGE TSS: 0-10,000 mg/L, 0-20mg/L, COMPATIBLE WITH SELECTED SENSOR, SUITABLE FOR HAZARDOUS AREA
AIT-214	TSS/DO/Temp Analyzer Transmitter - SBR Tank No. 1 TK	46 53 53	P04	J02	E09	Stand Mntd	Zone 2, IIA & IIB, Outdoors	NEMA 4X, ANALYZER, 4-20mA OUTPUT SIGNAL, CALIBRATED RANGE TSS: 0-10,000 mg/L, 0-20mg/L, COMPATIBLE WITH SELECTED SENSOR, SUITABLE FOR HAZARDOUS AREA
AE-600B	H2S Analyzer Element - Dewatering Room	40 90 00	0	J03	E08	Wall Mntd	Zone 2, IIA & IIB, Indoors	NEMA 4X, H2S SENSOR, 0-50 ppm, SUITABLE FOR HAZARDOUS AREA
AE-600A	LEL Analyzer Element - Dewatering Room	40 90 00	0	J03	E08	Wall Mntd	Zone 2, IIA & IIB, Indoors	NEMA 4X, LEL SENSOR, 0-100 %, SUITABLE FOR HAZARDOUS AREA
AE-515	TSS Analyzer Element - UV-510 Channel	40 90 00	P05	J04	E08	Suspended	Unclassified, Indoors	TOTAL SUSPENDED SOLIDS SENSOR c/w 10m OF INTEGRAL CABLE,
AE-514	pH Analyzer Element - UV-510 Channel	40 90 00	P05	J04	E08	Suspended	Unclassified, Indoors	pH SENSOR c/w 10m OF INTEGRAL CABLE
AE-513	UVI Analyzer Element - UV-510 Channel	46 66 00	P05	J04	E08	Inline	Unclassified, Indoors	ULTRAVIOLET INTENSITY SENSOR
AE-512	UVI Analyzer Element - UV-510 Channel	46 66 00	P05	J04	E08	Inline	Unclassified, Indoors	ULTRAVIOLET INTENSITY SENSOR
AE-224B	TSS Analyzer Element - SBR Tank No. 2 TK-220	46 53 53	P04	J02	E09	Suspended	Zone 2, IIA & IIB, Outdoors	TOTAL SUSPENDED SOLIDS SENSOR c/w 10m OF INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
AE-224A	DO & Temp Analyzer Element - SBR Tank No. 2 TK-220	46 53 53	P04	J02	E09	Suspended	Zone 2, IIA & IIB, Outdoors	DISSOLVED OXYGEN SENSOR c/w 10m OF INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
AE-214B	TSS Analyzer Element - SBR Tank No. 1 TK-210	46 53 53	P04	J02	E09	Suspended	Zone 2, IIA & IIB, Outdoors	TOTAL SUSPENDED SOLIDS SENSOR c/w 10m OF INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
AE-214A	DO & Temp Analyzer Element - SBR Tank No. 1 TK-220	46 53 53	P04	J02	E09	Suspended	Zone 2, IIA & IIB, Outdoors	DISSOLVED OXYGEN SENSOR c/w 10m OF INTEGRAL CABLE, SUITABLE FOR HAZARDOUS AREA
TIT-400	Temperature Transmitter (Process Room - Ambient)	40 90 00	-	J03	E08	Wall Mntd	Unclassified, Indoors	NEMA 4X, TEMPERATURE TRANSMITTER, CALIBRATION RANGE OF -20 TO +40 DEG C, TEMPERATURE ELEMENT TO BE INTEGRAL, 4-20mA SIGNAL, LOOP POWERED
DCN-110	Local Disconnect for M-110	26 28 26	-	J03	E07	Wall Mntd	Zone 1 IIA & IIB Indoors	NEMA 4X, LOCAL DISCONNECT C/W AUC CONTACT, SUITABLE FOR THE HAZARDOUS AREA
DCN-111	Local Disconnect for M-111	26 28 26	-	J03	E07	Wall Mntd	Zone 1 IIA & IIB Indoors	NEMA 4X, LOCAL DISCONNECT C/W AUC CONTACT, SUITABLE FOR THE HAZARDOUS AREA
DCN-112	Local Disconnect for M-112	26 28 26	-	J03	E07	Wall Mntd	Zone 1 IIA & IIB Indoors	NEMA 4X, LOCAL DISCONNECT C/W AUC CONTACT, SUITABLE FOR THE HAZARDOUS AREA
-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-

Rev	Date	Description
1	Feb-24	Issued for Addendum 1
0	Nov-24	Issued for Tender

By JRK Ckd LTH Appr. SHE

Date	Office
Nov-24	HFX
Designed JRK	

Project No. : 240800

Specification No.: 40 91 01

Title: WASTEWATER TREAMENT PLANT UPGRADES & EXPANSION
INSTRUMENTATION & CONTROLS EQUIPMENT LIST

Client: TOWN OF LUNENBURG

Project: WWTP UPGRADE & EXPANSION

Drawing No. 240800.00-J05

Rev. 1

NOTES:

1. Refer to referenced specification sections for general instrument specifications common to each instrument type.
2. Consult with Owner for final equipment locations.
3. Fabricate freestanding unistrut frame/ support to suit equipment size.
4. Contractor to confirm all instrument process connection sizes / materials against the mechanical/process drawings before shop drawing submission. Any discrepencies to be clarified with the engineer.
5. Refer to the electrical control schematics for the number of contacts required for each pushbutton/switch/etc., identifed for each local control station.

Rev	Date	Description
1	Feb-24	Issued for Addendum 1
0	Nov-24	Issued for Tender

By JRK | Ckd LTH | Appr. SHE

Date	Nov-24
Office	HFX
Designed	JRK
Project No. :	240800
Specification No.:	40 91 01

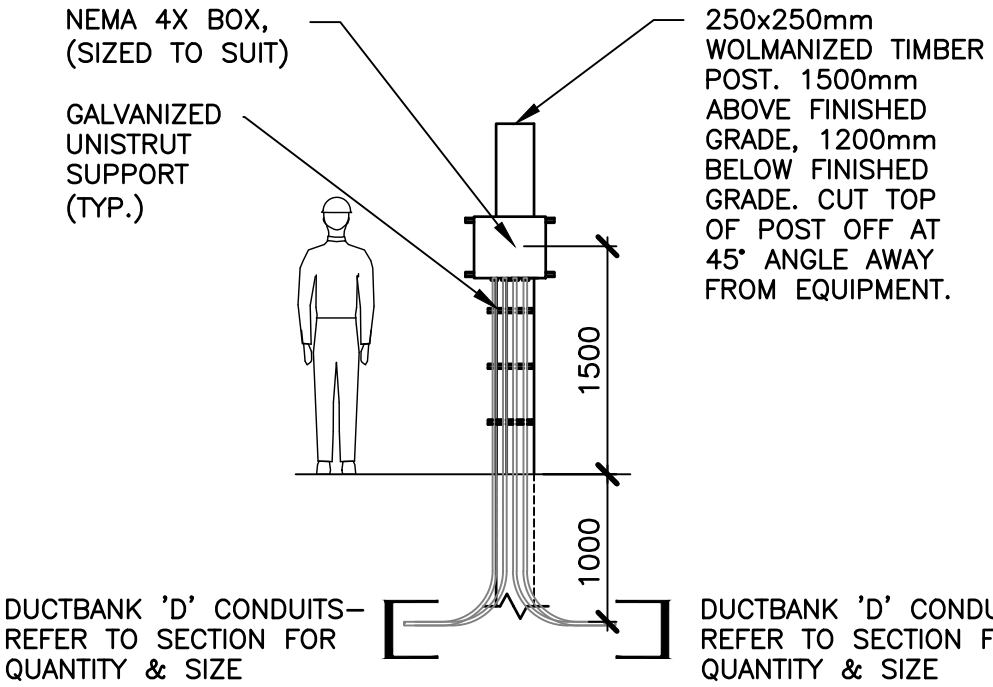
Title: WASTEWATER TREAMENT PLANT UPGRADES & EXPANSION
INSTRUMENTATION & CONTROLS EQUIPMENT LIST

Client: TOWN OF LUNENBURG

Project: WWTP UPGRADE & EXPANSION

Drawing No. 240800.00-J05

Rev. 1



1 / – DETAIL–JUNCTION BOX POST

N.T.S.

TYPICAL FOR:
1 FOR DUCTBANK D POWER CONDUITS
1 FOR DUCTBANK D CONTROL/COMMUNICATIONS CONDUITS

Date	Scale	Designed	Drawn	Checked	Approved	CBCL No.	Contract
JAN 07/25	N.T.S.	JRK	IGG	LH	SHE	240800.00	-

No.	Description
1	ISSUED FOR ADDENDUM NO. 1

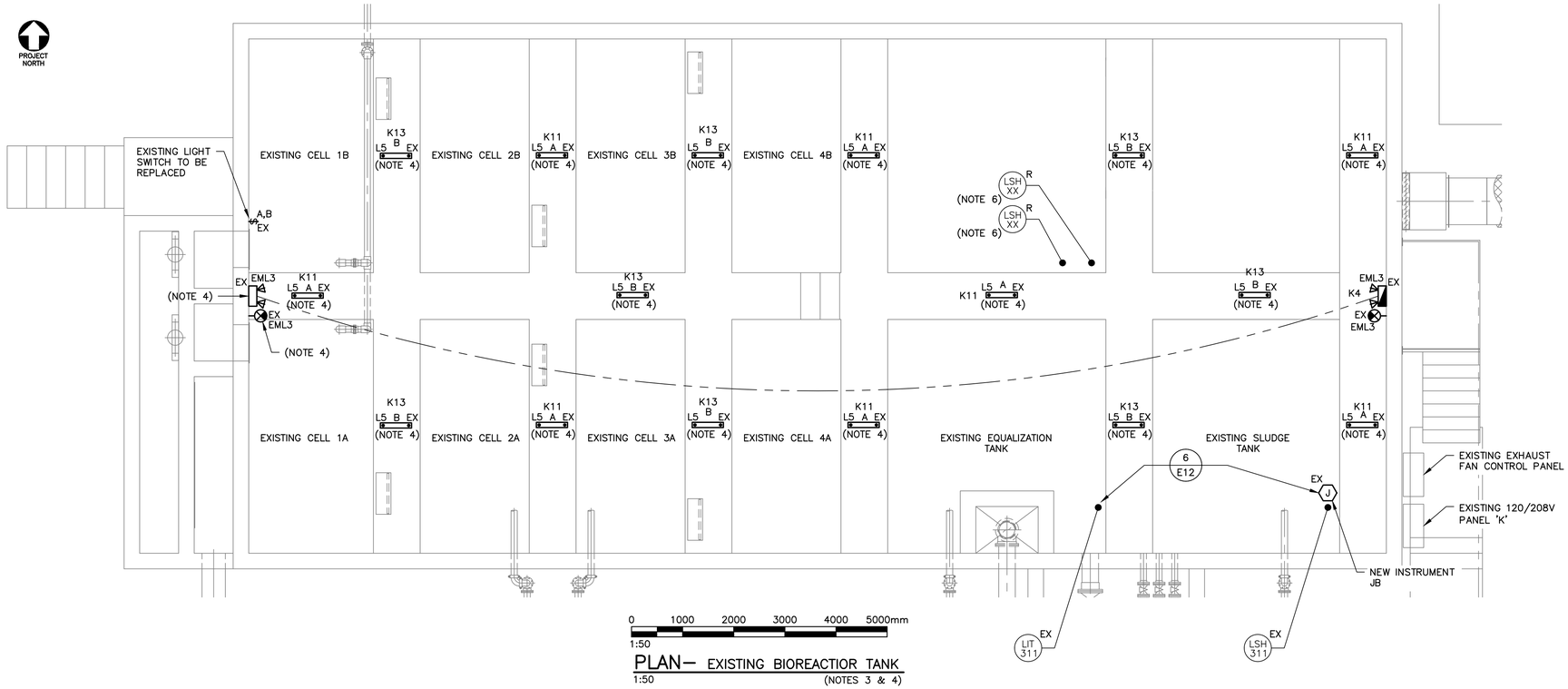
CBCL

TOWN OF LUNENBURG
WASTEWATER TREATMENT PLANT
UPGRADES & EXPANSION

JUNCTION BOX POST DETAIL

Drawing

ESK-01



EMERGENCY LIGHTING FIXTURE SCHEDULE (SEE NOTE 1)

LUMINAIRE TYPE	SUPPLY VOLTAGE	LAMP SOURCE	FIXTURE WATTAGE	GENERAL DESCRIPTION
EML3	12VDC	LED	6W x2 HEADS = 12W, 100W BATTERY	LED, BATTERY, EXIT, AND EMERGENCY LIGHTING COMBO FOR HARSH ENVIRONMENTS, EXPLOSION PROOF (ZONE 1), NEMA 4X

LIGHTING SCHEDULE (SEE NOTE 2 & 3)

LUMINAIRE TYPE	SUPPLY VOLTAGE	LAMP SOURCE	FIXTURE WATTAGE	FIXTURE LUMENS	GENERAL DESCRIPTION
L5	120VAC	LED	40	3800	LED ZONE 2 RATED, SUSPENDED, 600mm LONG, GASKETED, TEMP CODE T6, IP66, 4000K

Power: 120/208 V 3 ø 4 W — PANEL **K (EXISTING)** — SYM. IC.: 10000 A
OF CKTS.: 30 — LOCATION BIOREACTOR TANK EXTERIOR — MAINS: 100 A
INCOMING: — MAIN BKR: - A

Remarks	Designation	CKT #	Watts	BKR	PHASE a	PHASE b	PHASE c	BKR	Watts	CKT#	Designation	Remarks
1	EXH FAN #1	1		15A 3P	X			15A 3P		2	EXH FAN #2	1
		3				X				4		
		5					X			6		
1	HEAT TRACE	7		20A	X			15A		8	EMG/EXT LIGHTS	4
		9		2P		X		15A		10	EXTERNAL LIGHTS	1
3	INDOOR LIGHTS (A)	11		15A			X	15A		12	SPARE	1
3	INDOOR LIGHTS (B)	13		15A	X			15A		14	SPARE	1
1	CONTROLS-PHOTO CELL	15		15A		X		15A		16	SPARE	1
1	SPARE	17		15A			X	15A		18	SPARE	1
1	SPARE	19		15A	X			15A		20	SPARE	1
1	SPARE	21		15A		X		15A		22	SPARE	1
1	SPARE	23		15A			X	15A		24	SPARE	1
	SPACE	25		-	X			-		26	SPACE	
	SPACE	27		-		X		-		28	SPACE	
	SPACE	29		-			X	-		30	SPACE	

FEEDER: — SOURCE: PANEL A - CCT 37,39,41 (60A)

Remarks:
1. EXISTING CIRCUIT
2. EXISTING PANELBOARD IS SQUARE D MODEL NQ 12314795880010001
3. EXISTING CABLES AND CONDUIT FOR LIGHTING TO BE REPLACED.
4. EXISTING CIRCUIT TO BE MADE SPARE

Phase A Total	0	W	0.0 A
Phase B Total	0	W	0.0 A
Phase C Total	0	W	0.0 A
TOTAL	0	W	0.0 A

NOTES:

1. REFER TO SPEC SECTIONS 26 52 01 FOR ADDITIONAL REQUIREMENT.
2. REFER TO SPEC SECTION 26 50 00 FOR ADDITIONAL REQUIREMENTS.
3. LIGHT ELEVATION SHALL BE: BIOREACTOR ROOM – 3048mm
4. EXISTING BIOREACTOR INDOOR, EMERGENCY AND EXIT LIGHTS TO BE REMOVED AND REPLACED WITH NEW LIGHTING. CONTRACTOR TO INSTALL NEW LIGHT SUPPORT STRUCTURE, POWER CABLES, CONDUITS AND PULL BOXES FROM EXISTING PANEL K BREAKERS TO NEW LIGHTING.
5. ALL EQUIPMENT IS NEW UNLESS OTHERWISE NOTED.
6. EXISTING INSTRUMENTATION TO BE DISCONNECTED AND REMOVED. ASSOCIATED CABLING AND CONDUITS TO BE REMOVED BY CONTRACTOR.
7. REFER TO DRAWING E01 FOR LEGEND.

NOT FOR CONSTRUCTION

No.	Description	Date	By
0	ISSUED FOR ADDENDUM NO. 1	DEC 18/24	SHE

Revision or Issue

TOWN OF LUNENBURG

WASTEWATER TREATMENT PLANT UPGRADES & EXPANSION

ELECTRICAL

BIOREACTOR TANK PLAN

CBCL

REGISTERED PROFESSIONAL ENGINEER — 2024-DEC-18 — J. R. W. Kerr — 12009 — PROVINCE OF NOVA SCOTIA

CBCL No	Contract No
240800.00	-
Date	Scale
MAY 2024	AS NOTED
Designed	Drawn
JRK	IGG
Checked	Approved
LTH	SHE
Sheet No	
16 of 16	
Drawing No	
E16	