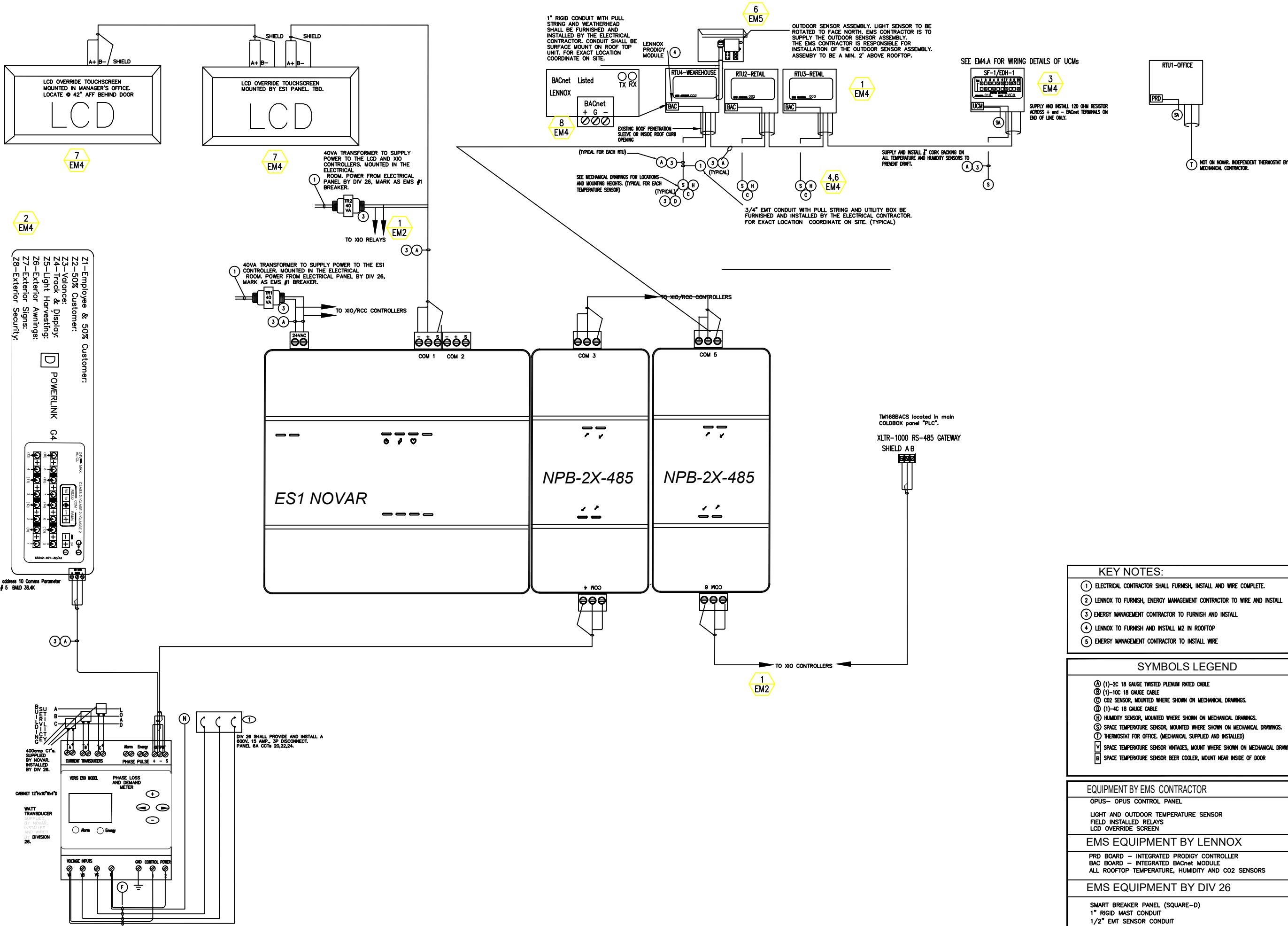




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3055 UNIVERSAL DR., MISSISSAUGA,
ONTARIO L4X 2E2 TEL: 905-625-9605

Context Plan

General Notes

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KEY NOTES:

- 1 ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND WIRE COMPLETE.
- 2 LENNOX TO FURNISH, ENERGY MANAGEMENT CONTRACTOR TO WIRE AND INSTALL
- 3 ENERGY MANAGEMENT CONTRACTOR TO FURNISH AND INSTALL
- 4 LENNOX TO FURNISH AND INSTALL M2 IN ROOFTOP
- 5 ENERGY MANAGEMENT CONTRACTOR TO INSTALL WIRE

SYMBOLS LEGEND

- Ⓐ (1)-2C 18 GAUGE TWISTED PLENUM RATED CABLE
- Ⓑ (1)-10C 18 GAUGE CABLE
- Ⓒ CO2 SENSOR, MOUNTED WHERE SHOWN ON MECHANICAL DRAWINGS.
- Ⓓ (1)-4C 18 GAUGE CABLE
- Ⓔ HUMIDITY SENSOR, MOUNTED WHERE SHOWN ON MECHANICAL DRAWINGS.
- Ⓕ SPACE TEMPERATURE SENSOR, MOUNTED WHERE SHOWN ON MECHANICAL DRAWINGS.
- Ⓖ THERMOSTAT FOR OFFICE. (MECHANICAL SUPPLIED AND INSTALLED)
- Ⓜ SPACE TEMPERATURE SENSOR VINTAGES, MOUNT WHERE SHOWN ON MECHANICAL DRAWINGS.
- Ⓢ SPACE TEMPERATURE SENSOR BEER COOLER, MOUNT NEAR INSIDE OF DOOR

EQUIPMENT BY EMS CONTRACTOR

OPUS- OPUS CONTROL PANEL
LIGHT AND OUTDOOR TEMPERATURE SENSOR
FIELD INSTALLED RELAYS
LCD OVERRIDE SCREEN

EMS EQUIPMENT BY LENNOX

PRD BOARD - INTEGRATED PRODIGY CONTROLLER
BAC BOARD - INTEGRATED BACnet MODULE
ALL ROOFTOP TEMPERATURE, HUMIDITY AND CO2 SENSORS

EMS EQUIPMENT BY DIV 26

SMART BREAKER PANEL (SQUARE-D)
1" RIGID MAST CONDUIT
1/2" EMT SENSOR CONDUIT

Issued for	Revised	Date	Description	Initial
3				
2				
1				

Revised	Date	Description	Initial

Issued for	Revised	Date	Description	Initial
July 8, 2020				

Project No.	Scale	Drawn by	Checked by
LCBO Store No. 312			

Project	Drawn by
NOVAR BAS SYSTEM	

Project	Drawn by
WIRING DIAGRAM	

Project	Drawn by
EM-01	

Project	Drawn by
5	

SCOPE OF WORK

GENERAL CONTRACTOR INFORMATION:

The Purchase Order will be issued to SMC 6 weeks prior to the fixture date. The Novar equipment will arrive two weeks prior to the construction date as indicated by LCBO. SMC will be on site a total of 5 times to complete the project.

JOB SITE ELECTRICAL CONTRACTORS SCOPE (DIV 26):

The electrical contractor is to install in conduit all line voltage wiring (120v to 600v)

BAS CONTRACTORS SCOPE (DIV 25):

The BAS contractor will be responsible for installation and termination of the Novar equipment as stated in this document and indicated on drawings #EM1-6 for the LCBO equipment. The BAS contractor also provides and installs conduit, boxes, straps and fittings which pertain to the low voltage (24v). All cable shall be enclosed in conduit below the ceiling level if not concealed within the building structure. The goal is to have the Novar system installed 100% At substantial completion.

INSTALLING THE NOVAR OPUS PANEL:

Mount the NOVAR panel in the Elect. room, on the wall as indicated on the electrical drawings. Review and coordinate with the electrical contractor the installation of conduit and 2 circuitS for BAS #1 & 2. It is the 120VAC circuits which provide power to the transformers and receptacle located inside the panel. The installation by BAS of a 1" dia. EMT sleeve which is used to bring the Novar cables into the panel. Provide a connector and bushing at the top of the conduit sleeve to protect the cables from abrasion. NOTE: Do not terminate the low voltage cables in the panel until after the field termination have been made at the other ends of the cables. Before the terminations are made, it is important to test the cables for shorts to ground. Once you have verified the integrity of the cables, and made all field termination, you can proceed with all terminating inside the prefab panel.

OUTDOOR LIGHT (ALS), TEMPERATURE (OTS), HUMIDITY(OAS) SENSORS:

Requires 2, 18/4 w/shield cables from the OSA to the prefab panel.The OSA will be mounted on the Roof Top Unit which is closest to the electrical room. Mount the OSA on the 1/2" rigid conduit mast installed on the rooftop. Terminate the cables at the ALS and OTS at the OSA before making the termination at the panel.

VESTIBULE HEATER(S):

The vestibule heater requires 1, 18/2w/shield conductor cable from the Lennox rooftop network. Contractor to keep a continuous network loop. EMS contractor will wire and install a UCM module to control the heater and fan SF-1.The vestibule heater sensor requires 1, 18/2w/shield conductor cable from the Novar UCM to the sensor location. The vestibule heater duct sensor requires 1, 18/2w/shield conductor cable from the Novar UCM to the sensor location. mount duct sensor downstream of the heater

WALK-IN COOLER:

The walk-in cooler sensor requires 1, 18/2w/shield conductor cable from the Novar panel to the sensor location. The "PLC" "M172_BACnet" controller in the PLC requires 1, 18/4 w/shield conductor cable from the XCM comm port for BACnet communications.

WALK IN COOLER SENSOR:

The walk in cooler requires 1, 18/2w/shield conductor cable from the cooler sensor location by the loading door to the XCM panel.

WATTS TRANSDUCER:

The watts transducer requires 1, 18/2 w/shield conductor cable from the transducer to the Novar panel. The transducer monitors power consumption and phase conditions through Modbus protocol. 3 current transducers are to be mounted in a 16x16x6 box installed by the electrician.

LIGHTING CONTROL:

Lighting will be split into 8 Zones. 1-Employee & 50% Customer, 2-50% Customer, 3-Valance, 4-Track & Displays, 5-Daylight Harvesting, 6-Exterior Awnings & Vestibule, 7-Exterior Signs, 8-Exterior Security A complete smart breaker panel (Square D) POWERLINK G3 NF21SBRG3 - will be supplied and installed by the electrical contractor. BAS contractor will install an indoor light sensor for daylight harvesting located in the ceiling by the windows at the cash desks. Maximun 6' from the window wall.

ZONE HUMIDITY SENSORS:

Each humidity sensor requires 2, 18/2w/shield conductor cable from the rooftop to the sensor location. Mount the IHS on the box provided by the electrical contractor on the column or wall. Install cork to the complete back of the sensor to prevent drafts. Make all termination at the IHS prior to terminating in the RTU. Remember to keep the polarity the same throughout the system.

ZONE CO2 SENSORS:

Each Co2 sensor requires 2, 18/2w/shield conductor cable from the rooftop to the sensor location. Mount the CO2 on the box provided by the electrical contractor on the column or wall. Install cork to the complete back of the sensor to prevent drafts. Make all termination at theCO2 prior to terminating in the RTU. Remember to keep the polarity the same throughout the system.

NEW LENNOX ROOF TOP UNITS:

Lennox BACnet controllers and associated devices will be factory installed.as shown on drawing #EM3. Zone sensors will be supplied by EMS and installed by the Novar contractor. The communications line requires a 1, 18/2 w/shield conductor cable from the prefab panel to the first RTU and then 1, 18/2 w/shield conductor cable loop to each of the remaining RTU's. Prior to making the termination in the RTU's, you must first locate the com line home run in the prefab panel, strip the wires and heat shrink them off to prevent shorting to ground during the terminations. Turn off disconnects at each RTU.Then make all termination in the RTU's. Remember to maintain the polarity throughout the entire system. Address the Lennox Prodigy as BACnet and per the RTU identification numbers.

ZONE TEMPERATURE SENSOR (ZTS):

Each ZTS requires 1, 18/2 w/shield conductor cable from the RTU serving the space the ZTS is located in.Mount the ZTS on the box provided by the electrical contractor on the column or wall. Install cork to the complete back of the sensor to prevent drafts. Make all termination at the ZTS prior to terminating in the RTU. Remember to keep the polarity the same throughout the system.

RECEIVING HEATER(S):

The receiving heater requires 1, 18/4w/shield conductor cable from the XCM to the Heater. EMS contractor will wire and install low voltage pilot relays to control the heaters.The receiving heater sensor requires 1, 18/2w/shield conductor cable from the18/4w/shield to the sensor location.

REMOTE COMMUNICATION CHECKOUT:

Once you have completed this scope of work and the EMSsystem is installed and terminated, NOVAR will get on-line with the system and verify all points of control are operational

EMS LAN CONNECTION:

Verify the RJ-45 LAN connection has been installed adjacent to the panel. Plug the CAT5 ethernet cable into the XCM.Obtain the IP address and submit to Novar for programming.

WIRE LABELING:

All wire labeling must use printed wrap around wire labels. Hand written labels or writing on the wire is not acceptable.

SENSOR LABELING:

All sensors must have lamacoids installed on the sensor indicating the approved LCBO identification. Hand written labels, printed or writing on the sensor is not acceptable.

SEQUENCE OF OPERATIONS

ROOFTOP UNITS

-Occupied/Unoccupied shall be activated by a daily schedule. HVAC are on 1 hour before store opening and off at store closing. -Optimum start/stop shall be utilized to bring the space temperature up to setpoint for the scheduled start time. -In occupied mode the fan will run continuously. -In unoccupied mode the fan will run only on a call for heating or cooling. -Occupied heating setpoint shall maintain a space temp of 20 "Deg C". Unoccupied heating setpoint shall maintain a space temperature >15 "Deg C". -Gas burners shall be energized to maintain setpoints. -Occupied cooling setpoint shall maintain a space temperature of 21.5 "Deg C". -Unoccupied cooling setpoint shall maintain a space temperature <23.5 "Deg C". -The economizer shall be utilized for free cooling when the outdoor temperature <16 "Deg C" to maintain a space temperature of the cooling setpoint.

-The Co2 setpoint shall be 800ppm. When the Co2 > 800ppm the rooftop fan shall energize and the economizer shall modulate open. At 1000ppm the economizer shall be 100% open. when the Co2 < 700ppm the fan shall de-energize and the economizer will revert back to rooftop control parameters.

-The dehumidification setpoint shall be 50%rh. When the humidity > 53%rh the rooftop shall energize the dehumidification cycle built into the rooftop. When the humidity < 47% the unit will revert back to rooftop control parameters. Alarms -Space temperature exceeds setpoints for over 1 hour during occupied and unoccupied hours. -Supply air temperature is less than 8 "Deg C". -Co2 sensor exceeds setpoints for over 1 hour during occupied and unoccupied hours. -Humidity sensor exceeds setpoints for over 1 hour during occupied and unoccupied hours.

FRIDGES

-Occupied/Unoccupied shall be activated by a daily schedule. -The evaporator fans run continuously during occupied hours. during unoccupied hours they cycle for 15 minutes every hour unless there is a call for cooling by the condensor then they will stay on until the cooling call is satisfied. -the condensor will cycle to maintain desired setpoint in the fridges. If the temperature reaches 1.5 "Deg C" > setpoint the condensor will energize. when the temperature is 1.5 "Deg C" below setpoint the condensor will de-energize. -Beer fridge occupied setpoint 9 "Deg C", unoccupied setpoint 13 "Deg C". -Cold room occupied setpoint 10 "Deg C", unoccupied setpoint 14 "Deg C". -Wine fridges occupied setpoint 11 "Deg C", unoccupied setpoint 15 "Deg C".

Alarms

-Space temperature exceeds setpoints for over 1 hour during occupied and unoccupied hours.

WASHROOM EXHAUST FAN

-Shall be commanded on/off via employee lighting schedule.

VESTIBULE HEATER

-Occupied/Unoccupied shall be activated by a daily schedule. -Optimum start/stop shall be utilized to bring the space temperature up to setpoint for the scheduled start time. -The fan will run only on a call for heating. -Occupied heating setpoint shall maintain a space temp of 17 "Deg C" (adjustable). Unoccupied heating setpoint shall maintain a space temperature >15 "Deg C". -Electric duct heater shall be ramped 0 to 100% via 0-10VDC signal to maintain setpoints using a proportional gain value of 1. Maximum supply air temperature is 125F. Heat signal command from BAS will automatically ramp down if necessary to not increase 125F supply air while in heat mode.

Alarms

-Space temperature is below setpoints for over 1 hour during occupied and unoccupied hours. - SF-1 command failure alarm - EDH1 supply air temp is greater than 80C - EDH1 is commanded to be on but is not running

WALK-IN COLD ROOMS

-Temperature monitoring only.

Alarms

-Space temperature exceeds setpoints for over 1 hour during occupied and unoccupied hours.

VINTAGE (THC) COOLER

-Temperature monitoring only.

Alarms

-Cooler temperature exceeds setpoint for over 1 hour during occupied and unoccupied hours.

KWH DEMAND METER

-Monitoring only in 15 minute increments.

Alarms

-Pulse input failure.

LIGHTING

-All lighting will be operated by time of day schedules. -Override to last a pre-determined time (adjustable). -Exterior lights will be interlocked with an outdoor light sensor. -Daylight harvesting lights to be interlocked with an indoor light sensor.

-Zone 1-Employee lights are on when staff arrives and off when staff leaves. -Zone 2-Customer Lights are on 15 minutes before store opening and off 15 minutes after store closing. -Zone 3-Valance Lights are on 5 minutes before and off 5 minutes after store closing. -Zone 4-Track Lights are on at store opening and off at store closing. -Zone 5-Daylight Harvesting Lights are on @ store opening and off 15 minutes after store closing when indoor light sensor is below 75 Lumens. (Adjustable). -Zone 6-Exterior Awnings and Vestibule lights are on at store opening and off a 1/2 hour after store closing if light sensor permits. -Zone 7-Exterior Signs are on at store opening and off a 1/2 hour after store closing if light sensor permits. -Zone 8-Security Lighting are on at dusk and off at dawn if light sensor permits.

-There are override buttons on the LCD. During occupied hours they are inactive. During unoccupied hours if pushed once they will energize the lights and will stay on for 1 hour. If they are pushed again the lights will go off.

Alarms

-Indoor light sensor failure. -Outdoor light sensor failure. -LCD touchscreen communication failure.

PHASE LOSS METER

-On a phase failure of the incoming power a signal will be sent to the rooftops to shut down immediadely. -On a restore of phase loss condition the rooftops will sequencially start up for normal operation.

Alarms

-Pulse input failure.

RECEIVING HEATER

-Occupied/Unoccupied shall be activated by a daily schedule. -Optimum start/stop shall be utilized to bring the space temperature up to setpoint for the scheduled start time. -The fan will run only on a call for heating. -Occupied heating setpoint shall maintain a space temp of 17 "Deg C" (adjustable). Unoccupied heating setpoint shall maintain a space temperature >15 "Deg C". -Gas burners shall be energized to maintain setpoints. -Setpoint differential shall be 2 "Deg C". -When space temperature < "setpoint differential" heating shall energize. When the space temperature > "setpoint differential" heating shall de-energize.

Alarms

-Space temperature exceeds setpoints for over 1 hour during unoccupied hours.



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3				
2				
1				

Rev.	Date	Description	Initial
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Issued for

July 8, 2020

Issue date

	NTS	JR	JR
Project No.	Scale	Drawn by	Checked by

LCBO Store No. 312
Welland, ON

Project

SCOPE OF WORK
SEQUENCE OF
OPERATIONS

Drawing title

Filename

EM-02

or 5

LIGHTING & OTHER EQUIPMENRT									
ID#	EQUIP	POINT DESCRIPTION	TYPE	CONTROL	ADD	POINT#	INTERFACE	TREND LOG	LCD
1	METER	KWH DEMAND	DI	VERIS	01	01	BACNET	YES	YES
2	PHASE	PHASE LOSS PROTECTION	DI	VERIS	01	01	BACNET	YES	
3	MISC	OUTDOOR HUMIDITY SENSOR	AI	XIO-8HDO	-	05	SENSOR	YES	YES
4	SEC	SECURITY GENERAL ALARM	DI	RCC-1081	-	01	RELAY	YES	
5	MISC	OUTDOOR LIGHT SENSOR	AI	XIO-8HDO	-	02	SENSOR	YES	YES
6	REC	RECEIVING HEATER SENSOR	AI	RCC-1081	-	02	SENSOR	YES	YES
7	REC	RECEIVING HEATER ON/OFF	DO	XIO-8HDO	-	01	RELAY	YES	YES
8	VEST	VESTIBULE SENSOR	AI	UCM B	1	06	SENSOR	YES	YES
9	VEST	VESTIBULE FAN ON/OFF	DO	UCM B	1	FAN	RELAY	YES	YES
10	VEST	VESTIBULE HEATER ON/OFF	AO	UCM B	1	HEAT	ANALOG	YES	YES
11	EF	EXHAUST FAN 01 ON/OFF	DO	XIO-8HDO	-	02	RELAY	YES	YES
12	VEST	VESTIBULE EDH1 SUPPLY TEMP	AI	UCM B	1	ST	SENSOR	YES	YES
13									
14									
15	MISC	OUTDOOR TEMPERATURE SENSOR	AI	XIO-8HDO	-	01	SENSOR	YES	YES
16	MISC	INDOOR LIGHT SENSOR	AI	XIO-8HDO	-	06	SENSOR	YES	YES
17	LIGHT	EMPLOYEE LIGHTS ON/OFF	DO	SQUARE D	10	1	BACNET	YES	
18	LIGHT	CUSTOMER LIGHTS ON/OFF	DO	SQUARE D	10	2	BACNET	YES	
19	LIGHT	VALANCE LIGHTS ON/OFF	DO	SQUARE D	10	3	BACNET	YES	
20	LIGHT	TRACK & DISPLAY LIGHTS ON/OFF	DO	SQUARE D	10	4	BACNET	YES	
21	LIGHT	DAYLIGHT HARVESTING ON/OFF	DO	SQUARE D	10	5	BACNET	YES	
22	LIGHT	EXTERIOR AWNINGS ON/OFF	DO	SQUARE D	10	6	BACNET	YES	
23	LIGHT	EXTERIOR SIGNS ON/OFF	DO	SQUARE D	10	7	BACNET	YES	
24	LIGHT	EXTERIOR SECURITY ON/OFF	DO	SQUARE D	10	8	BACNET	YES	
25	LIGHT	EMPLOYEE LIGHTS STATUS	VI	SQUARE D	-	1		YES	
26	LIGHT	CUSTOMER LIGHTS STATUS	VI	SQUARE D	-	2		YES	
27	LIGHT	VALANCE LIGHTS STATUS	VI	SQUARE D	-	3		YES	
28	LIGHT	TRACK & DISPLAY LIGHTS STATUS	VI	SQUARE D	-	4		YES	
29	LIGHT	DAYLIGHT HARVESTING STATUS	VI	SQUARE D	-	5		YES	
30	LIGHT	EXTERIOR AWNINGS STATUS	VI	SQUARE D	-	6		YES	
31	LIGHT	EXTERIOR SIGNS STATUS	VI	SQUARE D	-	7		YES	
32	LIGHT	EXTERIOR SECURITY STATUS	VI	SQUARE D	-	8		YES	
33	LIGHT	EMPLOYEE LIGHTS OVERRIDE	VI	LCD	1,2	1		YES	YES
34	LIGHT	CUSTOMER LIGHTS OVERRIDE	VI	LCD	1,2	2		YES	YES
35	LIGHT	VALANCE LIGHTS OVERRIDE	VI	LCD	1,2	3		YES	YES
36	LIGHT	TRACK & DISPLAY LIGHTS OVERRIDE	VI	LCD	1,2	4		YES	YES
37	LIGHT	DAYLIGHT HARVESTING OVERRIDE	VI	LCD	1,2	5		YES	YES
38	LIGHT	EXTERIOR AWNINGS OVERRIDE	VI	LCD	1,2	6		YES	YES
39	LIGHT	EXTERIOR SIGNS OVERRIDE	VI	LCD	1,2	7		YES	YES
40	LIGHT	EXTERIOR SECURITY OVERRIDE	VI	LCD	1,2	8		YES	YES
41	FRDGS	TEMPERATURE SENSOR	AI	RCC1081	46,47	06	BACNET	YES	YES
42									
43	FRDGS	ON/OFF	AI	RCC1081	1,2	06	BACNET	YES	YES
44									

ROOFTOPS, VAV'S AND FAN COILS									
ID#	EQUIP	POINT DESCRIPTION	TYPE	CONTROL	ADD	POINT#	INTERFACE	TREND LOG	LCD
45	RTU'S	ZONE TEMPERATURE	AI	LENNOX	2-4	239	BACNET	YES	YES
46	RTU'S	ZONE HUMIDITY	AI	LENNOX	2-4	276	BACNET	YES	YES
47	RTU'S	ZONE CO2	AI	LENNOX	2-4	274	BACNET	YES	YES
48	RTU'S	SUPPLY AIR TEMP	AI	LENNOX	2-4	240	BACNET	YES	YES
49	RTU'S	RETURN AIR TEMP	AI	LENNOX	2-4	281	BACNET	YES	YES
50	RTU'S	UNIT STATUS	AI	LENNOX	2-4	232	BACNET	-	-
51	RTU'S	SUPPLY FAN ON/OFF	DO	LENNOX	2-4	104	BACNET	-	YES
52	RTU'S	SUPPLY FAN STATUS	AI	LENNOX	2-4	250	BACNET	YES	-
53	RTU'S	COOLING % ON	AI	LENNOX	2-4	115	BACNET	YES	YES
54	RTU'S	COOLING % STATUS	AI	LENNOX	2-4	247	BACNET	-	-
55	RTU'S	HEATING % ON	AI	LENNOX	2-4	117	BACNET	YES	YES
56	RTU'S	HEATING % STATUS	AI	LENNOX	2-4	245	BACNET	-	-
57	RTU'S	ECONOMIZER ENABLE	DO	LENNOX	2-4	248	BACNET	-	-
58	RTU'S	ECONOMIZER MIN POSITION	AO	LENNOX	2-4	102	BACNET	-	-
59	RTU'S	ECONOMIZER STATUS	AI	LENNOX	2-4	244	BACNET	YES	YES
60	RTU'S	SCHEDULE STATUS	DO	LENNOX	2-4	104	BACNET	-	YES
61	RTU'S	RTU STATUS	AI	LENNOX	2-4	242	BACNET	-	-
62	RTU'S	COOLING OCC SETPOINT	AO	LENNOX	2-4	31	BACNET	-	YES
63	RTU'S	COOLING UNOCC SETPOINT	AO	LENNOX	2-4	133	BACNET	-	-
64	RTU'S	HEATING OCC SETPOINT	AO	LENNOX	2-4	130	BACNET	-	YES
65	RTU'S	HEATING UNOCC SETPOINT	AO	LENNOX	2-4	132	BACNET	-	-
66	RTU'S	OUTDOOR TEMPERATURE	AO	LENNOX	2-4	242	BACNET	-	-
67	RTU'S	ACTIVE SETPOINT('C)	VI	LENNOX	2-4		OPUS	YES	YES
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88									

LEGEND:

EQUIPMENT:
Equipment Novar is wired to.

POINT DESCRIPTION:
Point controlled or monitored by Novar

TYPE:
Analog Input (AI), Analog Output (AO)
Digital Input (DI), Digital Output (DO)
Virtual Input (VI), Virtual Output (VO)

CONTROL:
Novar Module

ADDRESS:
Novar Module Software Address

POINT#:
Novar Point Allocation Number

INTERFACE:
Interface Peripheral

TREND LOG:

IBI

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LCBO

STANDARD
MECHANICAL
CONTRACTING

ENERGY MANAGEMENT
DIVISION

3055 UNIVERSAL DR., MISSISSAUGA,
ONTARIO L4X 2E2 TEL: 905-625-9505

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3

2

1

Rev.

Date

Description

Issued for
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Issue date

Project No.

NTS

Scale

JR

Drawn by

JR

Checked by

Project:
LCBO Store No. 312
Welland, ON

Project:
NOVAR BAS
POINT LIST

Drawing title

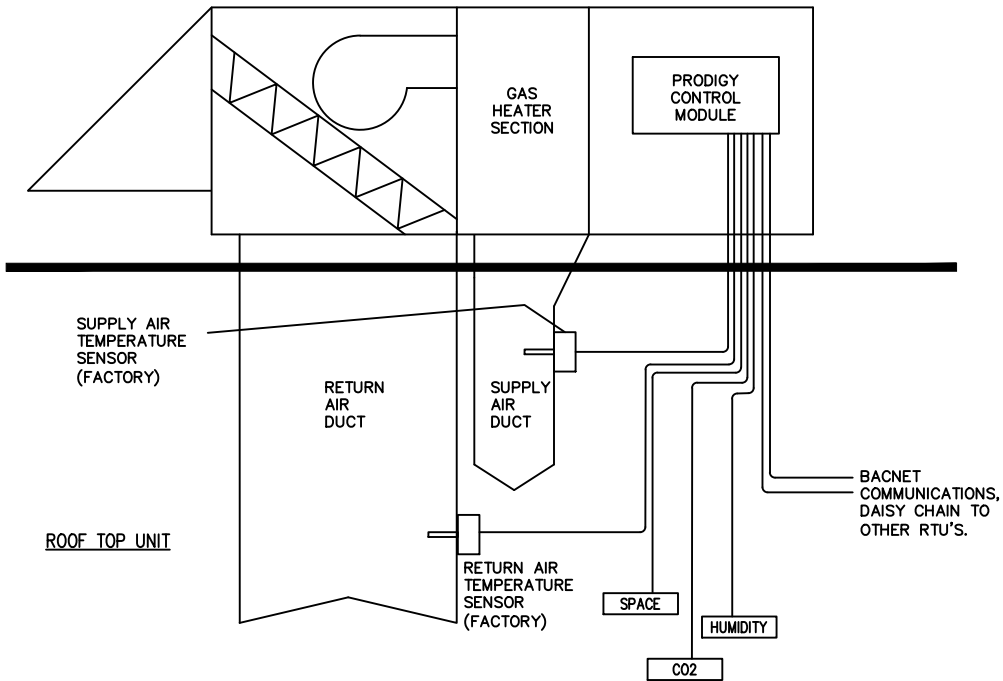
Filename

Sheet no.

EM-03

of

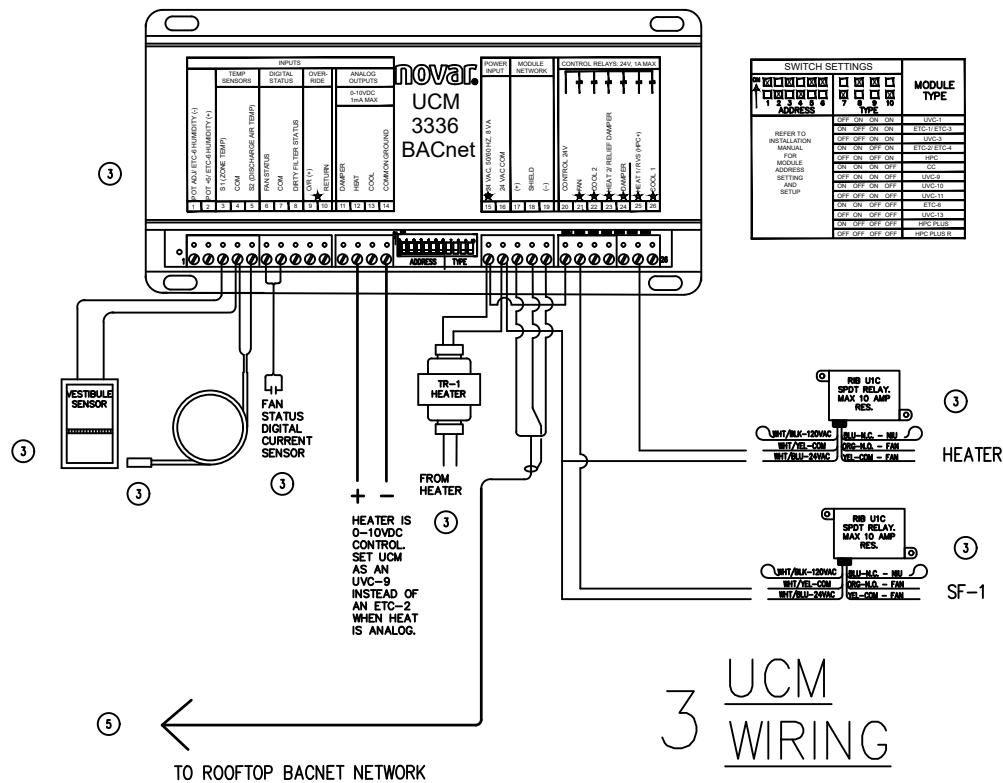
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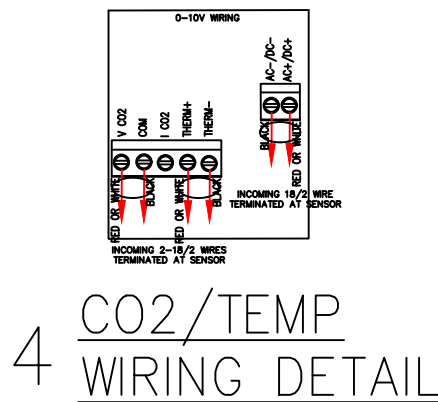
1 ROOFTOP LAYOUT

2 G4 DETAIL

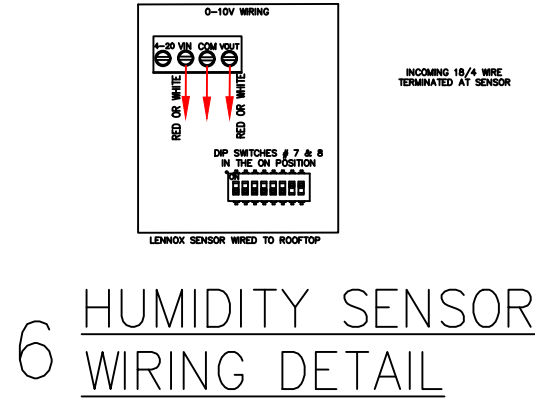
PANEL 2L – SQUARE D POWERLINK G4 NF21SBRG3 ①						
EMS	DESCRIPTION	CCT	PHASE	CCT	DESCRIPTION	EMS
–	BATTERY UNIT BU	1	A	2	VESTIBULE LIGHT	6
2	CASH DESK LIGHT	3	B	4	EXTERIOR SECURITY LIGHTS	8
1	EMPLOYEE WAREHOUSE LIGHT	5	C	6	RETAIL CUSTOMER LIGHT	1
2	CUSTOMER WAREHOUSE LIGHT	7	A	8	RETAIL CUSTOMER LIGHT	2
–	NIGHT LIGHT	9	B	10	COLD ROOM EMPLOYEE LIGHT	1
–	SPARE	11	C	12	COLD ROOM CUSTOMER LIGHT	2
–	SPARE	13	A	14	SPARE	–
–	SPARE	15	B	16	SPARE	–
1	EMPLOYEE TRACK LIGHT	17	C	18	EXTERIOR AWNING	7
1	EMPLOYEE TRACK LIGHT	19	A	20	EXTERIOR AWNING	7
4	RETAIL TRACK LIGHT	21	B	22	LCBO CHANNEL LETTERS	7
4	RETAIL TRACK LIGHT	23	C	24	LCBO CHANNEL LETTERS	7
3	RETAIL VALANCE LIGHT	25	A	26	SPARE	–
–	OFF+STAFF+W/R+JANITOR ROOM	27	B	28	SPARE	–
4	GIFT/SPIRITS LIGHT	29	C	30	SPARE	–
4	GIFT/SPIRIT FIXTURE LIGHT	31	A	32	SPARE	–
–	SPARE	33	B	34	SPARE	–
4	COOLER DAIRY DOOR LIGHT	35	C	36	SPARE	–
5	DAYLIGHT HARVESTING	37	A	38	TVSS	–
–	SPARE	39	B	40	TVSS	–
–	SPARE	41	C	42	TVSS	–



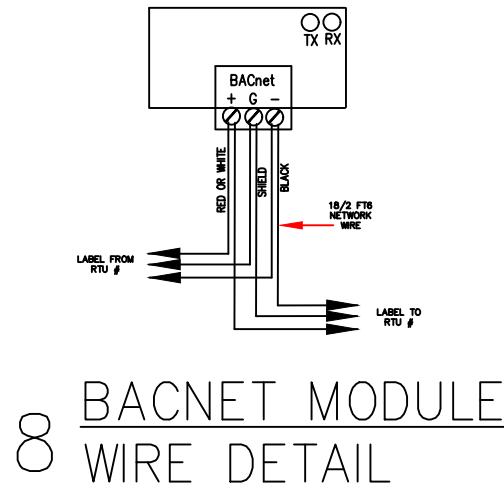
3 UCM WIRING



5 LENNOX RTU WIRING DETAIL



7 LCD WIRING DETAIL



8 BACNET MODULE WIRE DETAIL



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Context Plan

General Notes

1. ALL DIMENSIONS IN IMPERIAL.
2. VERIFY ALL DIMENSIONS.
3. DO NOT SCALE DRAWINGS.
4. CHECK DRAWINGS AGAINST SPECIFICATIONS.
5. USE THE LATEST REVISED DRAWINGS ONLY.
6. REPORT ANY DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS AND SCHEDULES, DISCOVERED ERRORS, OR OMISSIONS, TO THE ARCHITECT AND LCBO DURING TENDER PERIOD AND BEFORE PROCEEDING WITH ANY WORK.
7. DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT, AND MUST BE RETURNED UPON COMPLETION OF WORK.
8. TO VIEW A LIST OF BIDDERS FOR THIS PROJECT, PLEASE GO TO: WWW.BIDDINGO.COM/LCBO

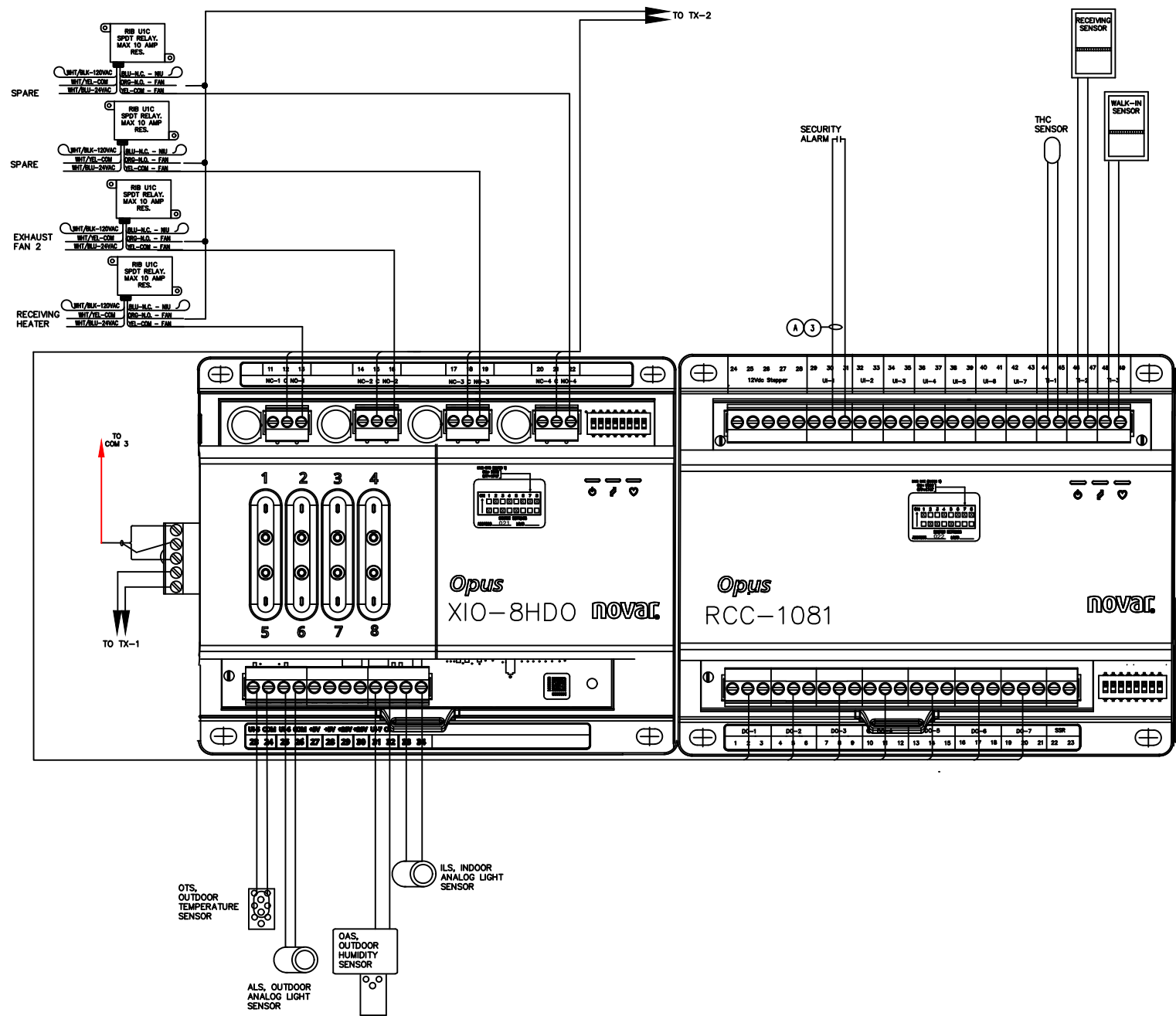
Rev.	Date	Description	Author
3			
2			
1			

Issued for	July 8, 2020
Issue date	
Project No.	NTS
Scale	JR
Drawn by	JR
Checked by	

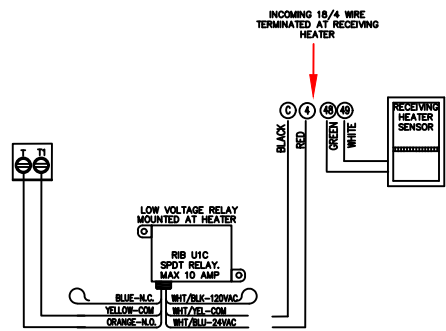
LCBO Store No. 312
Welland, ON

Project
LENNOX ROOFTOP
VESTIBULE UCM
LCD DIAGRAM

Drawing title
Revision
Sheet no. EM-04 or 5



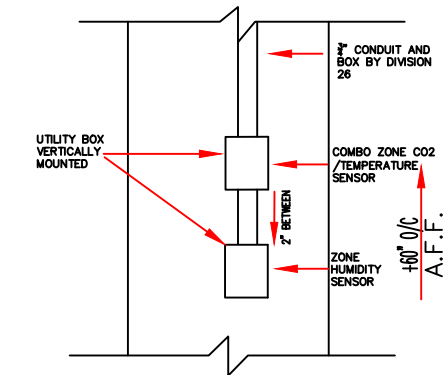
1 XIO WIRING DIAGRAM



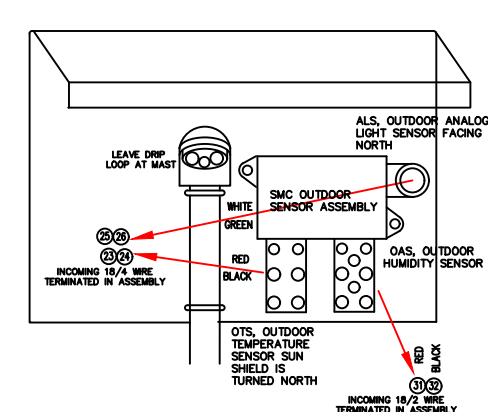
2 REC HEATER
INSTALL DETAIL

3 NIU

4 NIU



5 ZONE SENSOR
INSTALL DETAIL



6 OUTDOOR SENSOR
INSTALL DETAIL



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Context Plan

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Project
XIO POINT LIST
DETAILS

Drawing title

Revision

Sheet no. EM-05 of 5