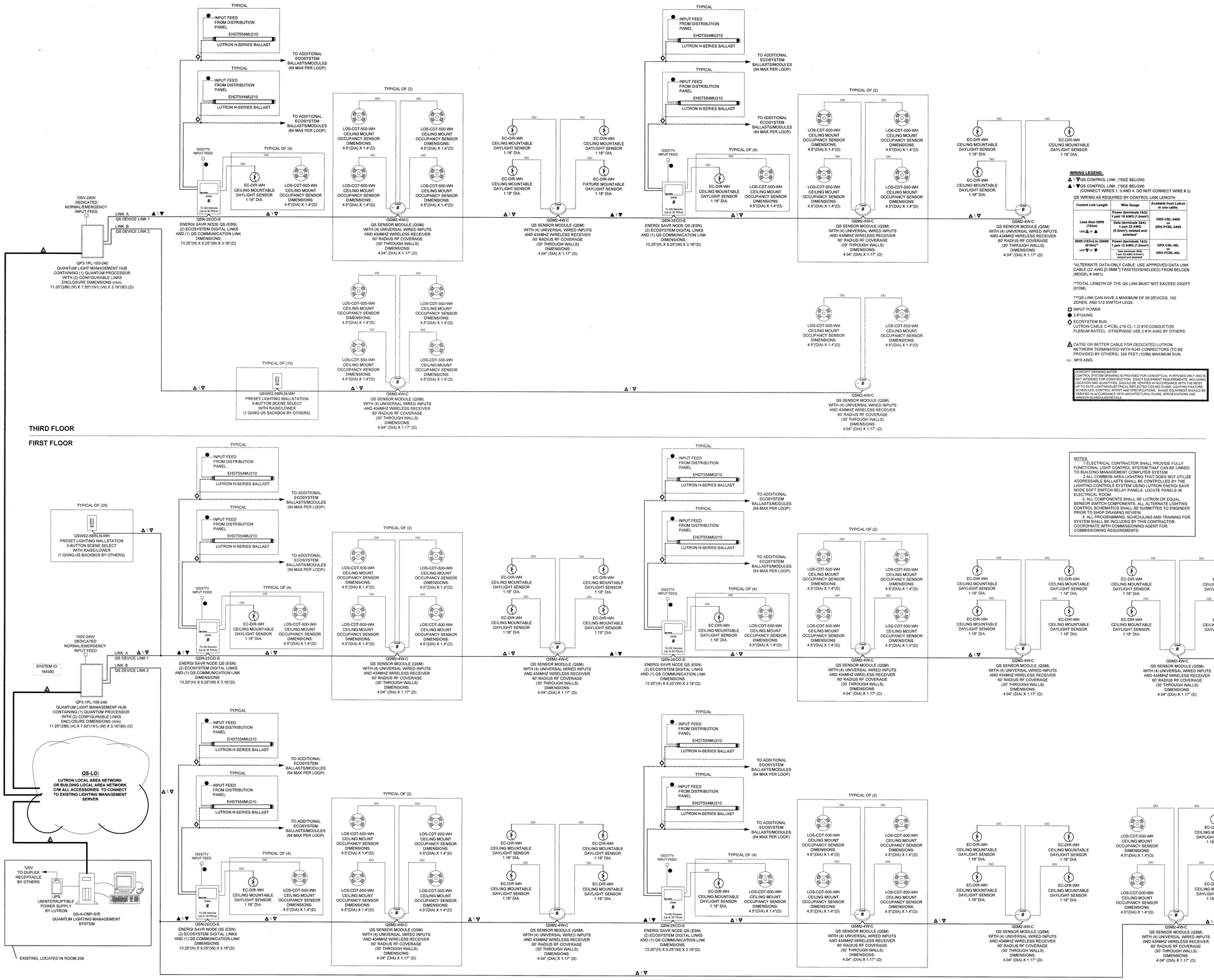

NOTES:
1. ELECTRICAL CONTRACTOR SHALL PROVIDE FULLY FUNCTIONAL LIGHT CONTROL SYSTEM THAT CAN BE LINKED TO BUILDING MANAGEMENT COMPUTER SYSTEM
2. ALL COMMON AREA LIGHTING THAT DOES NOT UTILIZE ADDRESSABLE BALLASTS SHALL BE CONTROLLED BY THE LIGHTING CONTROLS SYSTEM USING LUTRON ENERGI SAVR NODE SOFT SWITCH RELAY PANELS. LOCATE PANELS IN ELECTRICAL ROOM.
3. ALL COMPONENTS SHALL BE LUTRON OR EQUAL SENSOR SWITCH COMPONENTS. ALL ALTERNATE LIGHTING CONTROL SCHEMATICS SHALL BE SUBMITTED TO ENGINEER PRIOR TO SHOP DRAWING REVIEW.
4. ALL PROGRAMMING, SCHEDULING AND TRAINING FOR SYSTEM SHALL BE INCLUDED BY THIS CONTRACTOR. COORDINATE WITH COMMISSIONING AGENT FOR COMMISSIONING REQUIREMENTS

WIRING LEGEND:

▲ \ ▼ QS CONTROL LINK (*SEE BELOW)
▲ \ ▼ QS CONTROL LINK (*SEE BELOW)
(CONNECT WIRES 1, 3 AND 4. DO NOT CONNECT WIRE # 2)

QS WIRING AS REQUIRED BY CONTROL LINK LENGTH:

Control Link Length	Wire Gauge	Available from Lutron in one cable:
Less than 500ft (152m) use ▲ or ▲	Power (terminals 1&3): 1 pair 18 AWG (1.0mm²) Data (terminals 3&4): 1 pair 22 AWG (0.5mm²), twisted and shielded*	GRX-CBL-346S or GRX-PCBL-346S
500ft (152m) to 2000ft (610m)** use ▼ or ▼	Power (terminals 1&3): 1 pair 12 AWG (1.0mm²) Data (terminals 3&4): 1 pair 22 AWG (0.5mm²), twisted and shielded*	GRX-CBL-46L or GRX-PCBL-46L

*ALTERNATE DATA-ONLY CABLE: USE APPROVED DATA LINK CABLE (22 AWG [0.5MM²] TWISTED/SHIELDED) FROM BELDEN (MODEL # 9461).

**TOTAL LENGTH OF THE QS LINK MUST NOT EXCEED 2000FT (610M).

***QS LINK CAN HAVE A MAXIMUM OF 99 DEVICES, 100 ZONES, AND 512 SWITCH LEGS.

☐ INPUT POWER
● 2 #12AWG
◇ ECOSYSTEM BUS:
LUTRON CABLE C-PCBL-216-CL-1 (2 #16 CONDUCTOR PLENUM RATED). OTHERWISE USE 2 #16 AWG BY OTHERS.

△ CAT5E OR BETTER CABLE FOR DEDICATED LUTRON NETWORK TERMINATED WITH RJ45 CONNECTORS (TO BE PROVIDED BY OTHERS): 328 FEET (100M) MAX/MUM RUN.

○○ 3#18 AWG

CONCEPT DRAWING NOTES
CONTROL SYSTEM DRAWING IS PROVIDED FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION. ALL DEVICE QUANTITIES, WIRING LOCATION AND QUANTITIES, SHOULD BE VERIFIED IN ACCORDANCE WITH THE MOST UP-TO-DATE LIGHTING/ELECTRICAL REFLECTED CEILING PLANS, LIGHTING FIXTURE SCHEDULES, CONTROL INTENT AND SPECIFICATIONS. SHADE EQUIPMENT SHOULD BE VERIFIED IN ACCORDANCE WITH ARCHITECTURAL PLANS, SPECIFICATIONS AND WINDOW SCHEDULES/DETAILS.

WIRING NOTES:

QS CONTROL LINK

THE QS CONTROL LINK HAS A FREE WIRING TOPOLOGY (DAISY CHAIN, T-TAP, ETC.) FOR ILLUSTRATION PURPOSES THE QS CONTROL LINK IS SHOWN WIRED IN THE DAISY CHAIN FASHION. ADDITIONALLY, CONTROLS HAVE BEEN LAID OUT TO ENSURE APPROPRIATE POWER TO EACH DEVICE. CHECK POWER REQUIREMENTS BEFORE MODIFYING DEVICE WIRING ORDER. USE LUTRON CABLE GRX-CBL-346S (4 CONDUCTOR NON-PLENUM) OR GRX-PCBL-346S (4 CONDUCTOR PLENUM). OTHERWISE USE 2 #18 AWG (1.0 MM SQ) AND 1 BELDEN #9461. USE GRX-CBL-46L, OR GRX-PCBL-46L (4 CONDUCTOR PLENUM) FOR LINKS RUNNING LONGER THAN 500 FT.

ECOSYSTEM BUS

THE ECOSYSTEM BUS HAS A FREE WIRING TOPOLOGY (DAISY CHAIN, T-TAP, HOME-RUN ETC.) FOR ILLUSTRATION PURPOSES THE ECOSYSTEM BUS IS SHOWN WIRED IN DAISY CHAIN FASHION. ECOSYSTEM BUS REQUIRES LUTRON CABLE C-CBL-216-GR-1 (2 #16 CONDUCTOR NON-PLENUM) OR C-PCBL-216-CL-1 (2 #16 CONDUCTOR PLENUM RATED). OTHERWISE USE 2 #16 AWG BY OTHERS. ECOSYSTEM BUS (E1 AND E2) ARE POLARITY INSENSITIVE.

BUS LENGTH IS LIMITED BY THE WIRE GAUGE USED FOR E1 AND E2 AS FOLLOWS:

WIRE GAUGE	MAX LOOP LENGTH
#18 AWG (1.02MM):	55'(16TM)
#16 AWG (1.29MM)	90'(27MM)
#14 AWG (1.63MM):	1,40'(42BM)
#12 AWG (2.05MM):	2,20'(67OM)

QUANTUM NETWORK NOTES:

WHEN A LIGHTING MANAGEMENT NETWORK (LMN) IS REQUIRED TO ENABLE COMMUNICATIONS BETWEEN INDIVIDUAL LIGHT MANAGEMENT HUBS (LMH) AND BETWEEN LMH AND THE SYSTEM SERVER/DESKTOP/LAPTOP (Q-MANAGER). THE LMN REQUIRES A DEDICATED LAN OR VLAN. IT IS THE RESPONSIBILITY OF THE NETWORK PROVIDER TO ENSURE THE RELIABILITY AND SECURITY OF THE LMN.

CAT5E OR BETTER ETHERNET CABLE TO BE RUN FOR DEDICATED LMN TERMINATED WITH RJ45 CONNECTORS (PROVIDED BY OTHERS). THE NUMBER OF ETHERNET HOPS/SEGMENTS BETWEEN THE SERVER/DESKTOP/LAPTOP (Q-MANAGER) AND ANY LMN NODE SHALL NOT EXCEED 6. TOTAL LENGTH OF ETHERNET CABLE SHALL NOT EXCEED 328 FT (100M) POINT-TO-POINT.

IF LONGER RUNS ARE REQUIRED, MULTI-MODE FIBER OPTIC CABLE CAN BE USED INSTEAD WITH APPROPRIATE FIBER OPTIC CONNECTORS (PROVIDED BY OTHERS). CONSULT WITH NETWORK PROVIDER FOR STANDARD ETHERNET AND FIBER OPTIC WIRING RULES FOR DISTANCE AND SEPARATION AS WELL AS FOR PLACEMENT OF SWITCHES, ROUTERS, HUBS, ETC.

FOR MORE INFORMATION REGARDING NETWORK EQUIPMENT REQUIREMENTS AND NETWORK CONFIGURATION, PLEASE REFER TO THE QUANTUM LIGHTING MANAGEMENT NETWORK SPECIFICATION SHEET OR CONTACT LUTRON.

PWGSC AO (2004)

Public Works and Government Services Canada / Travaux Publics et Services gouvernementaux Canada

Architects / Architectes

architecture 2000 inc.

PROJECT NO. 3134

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Key plan / Plan de localisation

Seal / Sceau

Note / Note

revisions		date
00	ISSUED FOR TENDER	07-17 2013

project / projet

BUILDING MODERNIZATION
PHASE II
10 Weldon Street
Shediac, NB

drawing / dessin

ELECTRICAL
LIGHTING
CONTROLS

designed / conçu: KMR
date: JULY 2013
drawn / dessiné: MML
date: JULY 2013
approved / approuvé: MAL
date: JULY 2013
Tender / Soumission
PWGSC Project Manager / Administrateur de projets TPSGC
project number / no. du projet: R.039554.001
drawing no. / no. du dessin: E-111

E-DRW/GDD-E: 384039 Version 1