

NOTES ON WIRING

QS CONTROL LINK

THE QS CONTROL LINK HAS A FREE WIRING TOPOLOGY (DAISY CHAIN, T-TAP, ETC). THE SYSTEM WIRING ILLUSTRATED BY THIS DRAWING HAS BEEN LAID OUT TO ENSURE APPROPRIATE POWER TO EACH DEVICE. IF FOR ANY REASON THE SYSTEM IS TO BE WIRED DIFFERENTLY THAN WHAT IS SHOWN, PLEASE CONFIRM ALL DEVICE POWER REQUIREMENTS ARE MET (PLEASE REFER TO "QS LINK POWER REQUIREMENTS" FOR INDIVIDUAL DEVICE POWER REQUIREMENTS).

FOR QS CONTROL WIRE LENGTHS TOTALING LESS THAN 500 FT (153 M), USE LUTRON CABLE GRX-CBL-346S (4 CONDUCTOR NON-PLENUM), OR GRX-PCBL-346S (4 CONDUCTOR PLENUM). OTHERWISE USE 2 #18 AWG (1.0 SQ MM) + 2 #22 AWG (0.5 SQ MM) TWISTED AND SHIELDED OR EQUIVALENT (BELDEN #9461). FOR QS CONTROL WIRE LENGTHS TOTALING UP TO 2,000 FT, USE GRX-CBL-46L (4 CONDUCTOR NON-PLENUM) OR GRX-PCBL-46L (4 CONDUCTOR PLENUM). TOTAL QS CONTROL WIRE LENGTH MUST NOT EXCEED 2,000 FT (600 M).

PANEL LINK RULES

PANELS ARE DAISY CHAINED ON ONE OF THE CONFIGURABLE LINKS PER LUTRON'S DRAWING, HOWEVER THEY DO NOT HAVE TO BE IN THE ORDER SHOWN. DO NOT HOME-RUN OR T-TAP THIS WIRING LINK. ALL CIRCUITS NEED TO BE LANDED IN THESE PANELS PER LUTRON'S PANEL SCHEDULES. THE MAXIMUM WIRE LENGTH OF A PANEL LINK IS 2,000FT (600M). AN MX-RPTR IS USED TO EXTEND THE LENGTH OF A LINK BY ANOTHER 2,000FT (600M). A MAXIMUM OF 3 MX-RPTRS MAY BE USED PER LINK FOR A MAXIMUM LENGTH OF 8,000FT (2,430 M) PER LINK. IF A PANEL IS MOVED TO ANOTHER LINK, OR THE LOADS ARE NOT WIRED AS SHOWN IN LUTRON'S PANEL SCHEDULES, LUTRON MUST BE NOTIFIED AS THIS INFORMATION IS IMPORTANT FOR PROGRAMMING THE SYSTEM. LT-1 LINK TERMINATORS ARE NEEDED ON EACH END OF THE LINK.

USE LUTRON CABLE GRX-CBL-46L (5 CONDUCTOR NON-PLENUM) OR GRX-PCBL-46L (5 CONDUCTOR PLENUM RATED). OTHERWISE, USE 2 #12 AWG (4 SQ MM)+ 2 #22 AWG (0.5 SQ MM) TWISTED AND SHIELDED AND BETWEEN THE PANELS ADD 1 #18 AWG (1.0 SQ MM) FOR EMERGENCY SENSING CABLE BY OTHERS.

| QS LINK POWER REQUIREMENTS  |                                      |
|---|--------------------------------------|
| DEVICE  | PDUS                                 |
| QS DEVICES THAT SUPPLY PDU  |                                      |
| DIN RAIL POWER SUPPLY   | +75                                  |
| MYROOM DIN RAIL POWER SUPPLY  | +30                                  |
| QS PLUG-IN POWER SUPPLY, QS J-BOX POWER SUPPLY  | +8                                   |
| ENERGI SAVR NODE WITH ECOSYSTEM, ENERGI SAVR NODE WITH DALI, ENERGI SAVR NODE WITH T-SERIES TUNABLE-WHITE   | +30                                  |
| ENERGI SAVR NODE FOR 0-10 V, ENERGI SAVR NODE WITH SOFTSWITCH, ENERGI SAVR NODE FOR 0-10 V (DIN RAIL), ENERGI SAVR NODE WITH SOFTSWITCH (DIN RAIL)                                      | +14                                  |
| ENERGI SAVR NODE PHASE ADAPTIVE (DIN RAIL), 1 A MYROOM DIN RAIL POWER MODULE SWITCHING, 1 A MYROOM DIN RAIL POWER MODULE PHASE ADAPTIVE   | +4                                   |
| ENERGI SAVR NODE WITH DALI (DIN RAIL), ENERGI SAVR NODE WITH ECOSYSTEM (DIN RAIL)   | +3                                   |
| QS MOTOR GROUP CONTROLLER (DIN RAIL), HOMEWORKS QS DIN RAIL POWER MODULES   | 0                                    |
| GRAFIK EYE QS (ALL MODELS EXCEPT GRAFIK EYE QS DALI WITH KNX), QS TIMECLOCK   | +3                                   |
| QP2 QUANTUM LIGHTING HUB  | LINK A : 0<br>LINKS B,C,D : +33 EACH |
| QP3 QUANTUM LIGHTING HUB  | LINKS A,B : +33 EACH                 |
| QS DEVICES THAT CONSUME PDU   |                                      |
| QS WALLSTATION (SEETOUGH, ARCHITRAVE, SIGNATURE SERIES, QS PICO, KEYSWITCH, SINGLE COLUMN PALLADIOM), QS SLIDER, GRAFIK T SLIDER, QS INFRARED (IR) EYE, WALLBOX INPUT CLOSURE INTERFACE | -1                                   |
| QS NETWORK INTERFACE, QS DMX INTERFACE, ENERGI SAVR NODE PROGRAMMING INTERFACE, QS WALLSTATION (DOUBLE COLUMN PALLADIOM)  | -2                                   |
| QS SENSOR MODULE (QSM), NOT INCLUDING ATTACHED WIRED SENSORS (SEE SECTION BELOW FOR MORE INFORMATION), QS CONTACT CLOSURE INTERFACE, PALLADIOM ROOM THERMOSTAT                          | -3                                   |
| GUESTROOM CONTROL UNIT  | -8                                   |
| SENSORS & DEVICES THAT CONSUME PDUS WHEN WIRED TO A QSM   |                                      |
| LUTRON DAYLIGHT SENSOR, LUTRON INFRARED (IR) RECEIVER, PICO WIRED CONTROLLER  | -0.5                                 |
| ECOSYSTEM WALLSTATION   | -1                                   |
| LOS C SERIES OCCUPANCY SENSOR, HIGH BAY OCCUPANCY SENSOR  | -2                                   |

| LUTRON SERVICES   |  |   |
|---|--|---|
| QTY   | SERVICE TITLE (MODEL NUMBER)                                 | SERVICE DESCRIPTION   |
| THE QUANTITY OF SERVICES BELOW ARE TO BE INCLUDED AS PART OF THIS PROJECT'S SCOPE OF WORK AND SPECIFIED INTO THE WRITTEN SPEC DOCUMENTS |  |   |
| PRE-STARTUP SERVICES  |  |   |
|   | ONSITE PRE-WIRE VISIT (LSC-PREWIRE)                          | AN ONSITE VISIT WITH THE ELECTRICAL CONTRACTOR TO DISCUSS LOGISTICAL CONSTRUCTION CONSIDERATIONS INCLUDING THE WIRING AND MOUNTING OF SYSTEM DEVICES, THE CONSTRUCTION SCHEDULE, AND LUTRON DOCUMENTATION. QUANTITY DICTATES THE NUMBER OF VISITS PURCHASED.  |
|   | SYSTEM & NETWORK INTEGRATION CONSULTATION (LSC-INT-VISIT)    | A CONSULTATIVE VISIT WITH THIRD PARTY INTEGRATORS TO CONFIRM THE SPECIFIED SEQUENCE OF OPERATION AND DISCUSS INTEGRATION PROCEDURES NEEDED IN ORDER TO INTEGRATE WITH THE LUTRON EQUIPMENT. THIS MAY INCLUDE ANY OF THE FOLLOWING THIRD PARTY SYSTEMS: BMS, BAS, IT, NON-LUTRON SHADES, BACNET, AV, OR ENERGY DASHBOARDS. |
|   | SENSOR LAYOUT & TUNING (LSC-SENS-LT)                         | LUTRON WILL TAKE RESPONSIBILITY FOR LUTRON-PROVIDED SENSOR PLACEMENT AND PERFORMANCE BY CREATING SENSOR LAYOUTS AND COORDINATING SENSOR PLACEMENT BEFORE AND AFTER INSTALLATION. ONCE THE BUILDING IS OCCUPIED, LUTRON WILL RETURN UP TO TWO TIMES TO PERFORM SENSOR FINE-TUNING.   |
| STARTUP SUPPORT SERVICES<br>(THESE SERVICES ARE ADDITIONAL TO YOUR SPECIFIED STARTUP BASED ON YOUR REQUIREMENTS)                        |  |   |
|   | AFTER HOURS STARTUP (LSC-AH-SU)                              | STARTUP PROVIDED BETWEEN THE HOURS OF 5:00PM - 7:00AM, MONDAY - FRIDAY. THIS SCOPE OF WORK DOES NOT INCLUDE HOLIDAY OR WEEKEND WORK. ADDITIONAL FEES MAY APPLY FOR WORK TO BE COMPLETED ON WEEKENDS (FRIDAY 5:00PM - MONDAY 7:00AM).  |
|   | ONSITE SCENE & LEVEL TUNING (LSC-AF-VISIT)                   | AN ONSITE VISIT WITH THE SPECIFIER OR CUSTOMER REPRESENTATIVE TO REVIEW THE DESIGN INTENT, FINE-TUNE THE SCENE LEVEL PROGRAMMING, AND MAKE ADJUSTMENTS TO TIMECLOCKS.   |
|   | ONSITE PERFORMANCE-VERIFIC ATION WALKTHROUGH (LSC-WALK)      | AN ONSITE WALKTHROUGH WITH FACILITY REPRESENTATIVES OR PROJECT COMMISSIONING AGENTS TO DEMONSTRATE THAT THE SYSTEM FUNCTIONALITY MEETS THE DESIGN INTENT. THIS MAY INCLUDE ANY OF THE FOLLOWING ONSITE ACTIVITIES - CONSULTATION/TRAINING DEMOS, FUNCTIONAL TESTING ASSISTANCE, OR INVENTORY OF LUTRON EQUIPMENT.         |
|   | SYSTEM PERFORMANCE-VERIFIC ATION DOCUMENTATION (LSC-SPV-DOC) | COMPLETION OF DOCUMENTATION WHICH PROVIDES PERFORMANCE VERIFICATION CERTIFYING THE LUTRON EQUIPMENT HAS BEEN THOROUGHLY TESTED. IT SUPPORTS THE DOCUMENTATION REQUIREMENTS OF MANY BUILDING STANDARDS.  |
|   | TITLE 24 ACCEPTANCE TEST VISIT (LSC-SPV-DOC-T24)             | ACCEPTANCE TESTING BY A LUTRON CERTIFIED LIGHTING CONTROL ACCEPTANCE TEST TECHNICIAN (CLCATT) TO FULFILL THE REQUIRED TITLE 24 INTERIOR LIGHTING CONTROL TESTS.   |
| POST-STARTUP SERVICES   |  |   |
|   | CUSTOMER-SITE SOLUTION TRAINING (LSC-TRAINING-SP)            | A VISIT TO TEACH SYSTEM USERS HOW TO OPERATE AND MAINTAIN THE LIGHTING CONTROL SYSTEM.  |
|   | SYSTEM OPTIMIZATION (LSC-SYSOPT-SP)                          | AN ONSITE CONSULTATIVE VISIT TO IDENTIFY AND IMPLEMENT LIGHTING CONTROL ADJUSTMENTS TO SAVE ADDITIONAL ENERGY AND CREATE A MORE PRODUCTIVE WORK ENVIRONMENT.  |
| MAINTENANCE & SUPPORT SERVICES  |  |   |
|   | SOFTWARE MAINTENANCE AGREEMENT (LSC-SMA-SP)                  | PROVIDES COMPATIBILITY TESTING RESULTS OF QUANTUM WITH OPERATING SYSTEM PATCHES AND WEB BROWSER UPDATES. INCLUDES AN ELECTIVE FREE SOFTWARE UPGRADE LICENSE.  |
| 1   | COMMERCIAL SYSTEMS 2-YEAR LIMITED WARRANTY (LSC-B2)          | A 2-YEAR SYSTEM WARRANTY PROVIDING 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR COVERAGE WITH A FIRST-AVAILABLE RESPONSE TIME.   |
|   | ENHANCED SILVER (LSC-EBS)                                    | YEARS 1-2 - 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR COVERAGE WITH A FIRST-AVAILABLE RESPONSE TIME. YEARS 3-5 - 50% PARTS ONLY COVERAGE; YEARS 6-8 - 25% PARTS ONLY COVERAGE.  |
|   | ENHANCED GOLD (LSC-EBG)                                      | YEARS 1-2 - 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR COVERAGE WITH A 72-HOUR RESPONSE TIME AND AN ANNUAL (1-DAY) SCHEDULED PREVENTIVE MAINTENANCE VISIT; YEARS 3-5 - 50% PARTS ONLY COVERAGE; YEARS 6-8 - 25% PARTS ONLY COVERAGE.   |
|   | ENHANCED PLATINUM (LSC-EBP)                                  | YEARS 1-2 - 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR COVERAGE WITH A 24-HOUR RESPONSE TIME AND AN ANNUAL (1-DAY) SCHEDULED PREVENTIVE MAINTENANCE VISIT; YEARS 3-5 - 50% PARTS ONLY COVERAGE; YEARS 6-8 - 25% PARTS ONLY COVERAGE.   |
|   | SILVER TECHNOLOGY SUPPORT PLAN (LSC-SILV-IP)                 | AN ANNUAL SERVICE PLAN THAT COVERS 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR WITH A FIRST-AVAILABLE ONSITE OR REMOTE RESPONSE TIME.   |
|   | GOLD TECHNOLOGY SUPPORT PLAN (LSC-GOLD-IP)                   | AN ANNUAL SERVICE PLAN THAT COVERS 100% REPLACEMENT PARTS AND 100% LUTRON LABOR WITH A 72-HOUR ONSITE OR REMOTE RESPONSE TIME. ALSO INCLUDES AN ANNUAL (1-DAY) SCHEDULED PREVENTIVE MAINTENANCE VISIT EACH YEAR.  |
|   | PLATINUM TECHNOLOGY SUPPORT PLAN (LSC-PLAT-IP)               | AN ANNUAL SERVICE PLAN THAT COVERS 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR WITH A 24-HOUR ONSITE OR REMOTE RESPONSE TIME. ALSO INCLUDES AN ANNUAL (1-DAY) SCHEDULED PREVENTIVE MAINTENANCE VISIT EACH YEAR.   |
|   | PREVENTIVE MAINTENANCE VISIT(S) (LSC-SCH-MAINT)              | SCHEDULED MAINTENANCE VISIT TO PERFORM PREVENTIVE MAINTENANCE, MINOR PROGRAMMING, AND CONDUCT SYSTEM TRAININGS. QUANTITY IS IN ADDITION TO ANY YEARLY VISITS SPECIFIED WITH AN ENHANCED WARRANTY OR TECHNOLOGY SUPPORT PLAN.  |
| PLEASE GO TO WWW.LUTRON.COM/SERVICES FOR FURTHER INFORMATION.   |  |   |

One-Line

Wire Legend

- ▲ QS Control Link (Connect wires 1, 2, 3 and 4)\*
- ▲ QS Control Link (Connect wires 1, 2, 3 and 4. Do not connect wire 2)\*
- ▼ Panel Control Link (Connect wires 1, 2, 3, 4 and 5)\*
- Panel Control Link (Connect wires 1, 3, 4 and 5. Do not connect wire #2)\*
- ◄ QS Sivoia Shade Control Link\*
- ▲ Belden Cable 1387LA(Or Equivalent)
- Normal Input Power 2 #12 AWG (4 sq mm) + ground
- Normal-Emergency Input Power 2 #12 AWG (4 sq mm) + ground
- ③ 3 Phase 4 wire Input Power, 4 #12 AWG (4 sq mm) + ground
- 2 #12 AWG (4 sq mm) + ground
- 3 #12 AWG (4 sq mm) + ground
- ◆ 0-10 V Signal: 2#18AWG (1.0 sq mm)
- 2#18 AWG (1.0 sq mm)
- ∞ 3#18 AWG (1.0 sq mm)
- ◇ EcoSystem Bus/Loop\*
- ◇ DALI Loop
- ◇ T-Series Tunable-White Loop
- ✂ Lutron Sensor Cable C-CBL-522S or use 4#22 AWG (1.0 sq mm)
- ✂ Lutron Sensor Cable C-CBL-522S or use 3#22 AWG (1.0 sq mm)
- Ⓜ DMX Cable, Use Lutron GRX-CBL-DMX-250/GRX-CBL-DMX-500 or Belden #9729 (Non-plenum) or Belden #99729 (Plenum) or Data Flex 224 W4 Cable.
- Ethernet cable, CAT5E or better cable for Lutron Network terminated with RJ45 connectors (not provided by Lutron). 328 ft (100 m) maximum run.
- Fiber optic cable for Lutron Network terminated with appropriate fiber optic connectors (not provided by Lutron). Requires dedicated fiber optic link (single-mode or multi-mode)
- RF Connection
- Wired Connection
- \*Please refer to Notes on Wiring for more wiring guidelines.  
\*Refer to Load Schedule for feed and load information

Project Name:  
Odettes Riverhouse

Location:  
New Hope, Pennsylvania

Project Number:

Created by:  
Paul Rudalavage

File Name:  
odettes riverhouse recovered.lutd

Document Revision:

July 24, 2018 | Sheet 1 of 3

For detailed definition of product capabilities refer to product specification submittal sheets.

▲ NOT FOR CONSTRUCTION

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New Hope, PA 18838

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SEAL

|      |                        |            |
|------|------------------------|------------|
|      |                        |            |
|      |                        |            |
|      |                        |            |
|      | ISSUE FOR CONSTRUCTION | 02.28.2019 |
| 3    | COMMISSIONING COMMENTS | 01.23.2019 |
| 2    | PERMIT SET             | 07.25.2018 |
| 1    | 90% PRICING SET        | 06.18.2018 |
| MARK | REVISIONS              | DATE       |

ALL DIMENSIONS AND RELATIONSHIPS MUST BE VERIFIED BY CONTRACTOR. THE ARCHITECT IS TO BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE CONSTRUCTION. DO NOT SCALE FROM DRAWINGS.

PROJECT #:  
140145.001

FILENAME:  
DRAWN: WFW

CHECKED: WFW

DATE: 07/25/18

ISSUE FOR CONSTRUCTION  
02-28-2019

ELECTRICAL DETAILS - LUTRON  
COVER SHEET

DRAWING

E-21