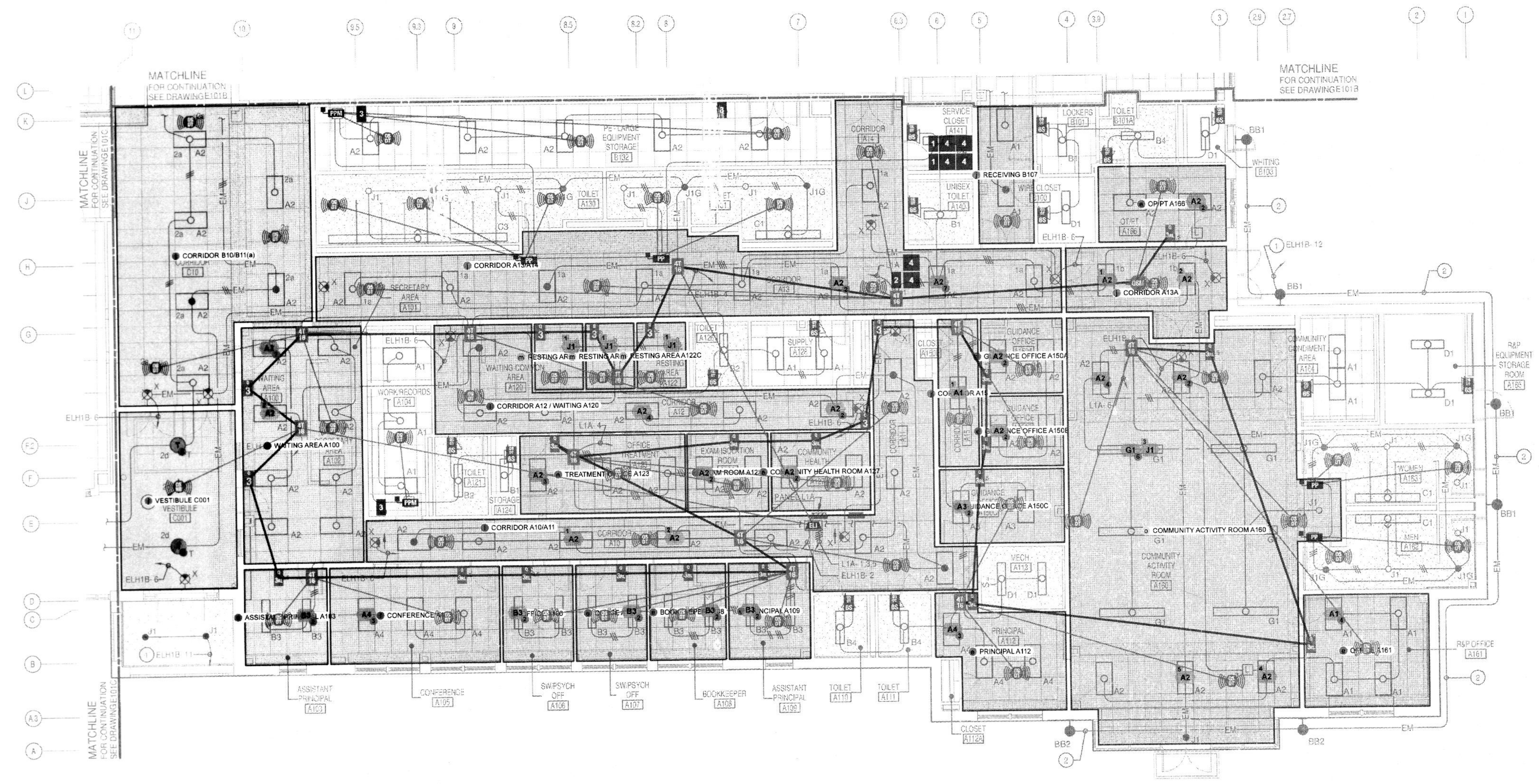
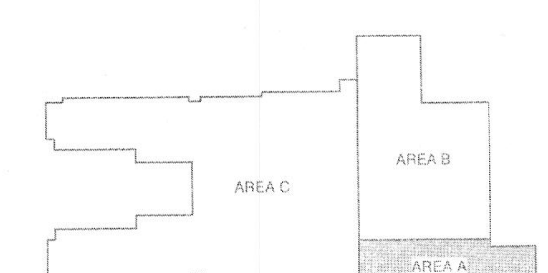
SPECIFIC NOTES:

1. CIRCUIT EXTERIOR LIGHTING THROUGH EXTERIOR PHOTOCELL MOUNTED ON ROOF. SEE DETAIL 6/705 FOR ADDITIONAL INFORMATION.
2. ROUTE CONDUIT IN CONCEALED CEILING SPACE NSIDE BUILDING.
3. SURFACE MOUNT OCCUPANCY SENSOR TO BULKHEAD.



PARTIAL FIRST FL OR PLAN - AREA A - LIGHTING

SCALE: 1/8" = 1'-0"



KEY PLAN

SCALE: 1/8" = 1'-0"

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GP #21701

PARTIAL FIRST FLOOR PLAN - AREA A - LIGHTING

REPLACEMENT OF DUNDALK ELEMENTARY SCHOOL
2717 SOUTH PLAYFIELD STREET BALTIMORE, MD

E101A

11/30/17
BID SET

System Layout

General Notes

1. This layout is for system schematic purposes only. Contractor shall locate, install, and wire equipment according to Lutron installation and specification documents.
   1a. If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
2. Verify shade design with Lutron.
3. See Cover Sheet and One-Lines for additional information.

Legend

- QSN-4T16-S (13)
- QSM2-4W-C (1)
- LVS: RRU-UNV (6)
- MS-B102-WH (14)
- P&S: RT12W-15 (2)
- P&S: RT12W-30 (1)
- P&S: TM870 (3)
- QSWS2-3BI-WH (7)
- QSWS2-3BRLI-WH (16)
- LOS-CDT-2000R-WH (39)
- LOS-CDT-2000-WH (13)
- LUT-WSPSM24V-360-CPN6111 (1)
- LUT-ELI-3PH (PP-DV) (1)
- PP-DV (4)
- PP-DV-M (2)

Project Name: Dundalk Elementary School

Location: Baltimore, Maryland

Project Number: 2094008.1.2

Created by: Devin Maurizio

File Name: Dundalk Elementary School.lutd

Document Revision: 0

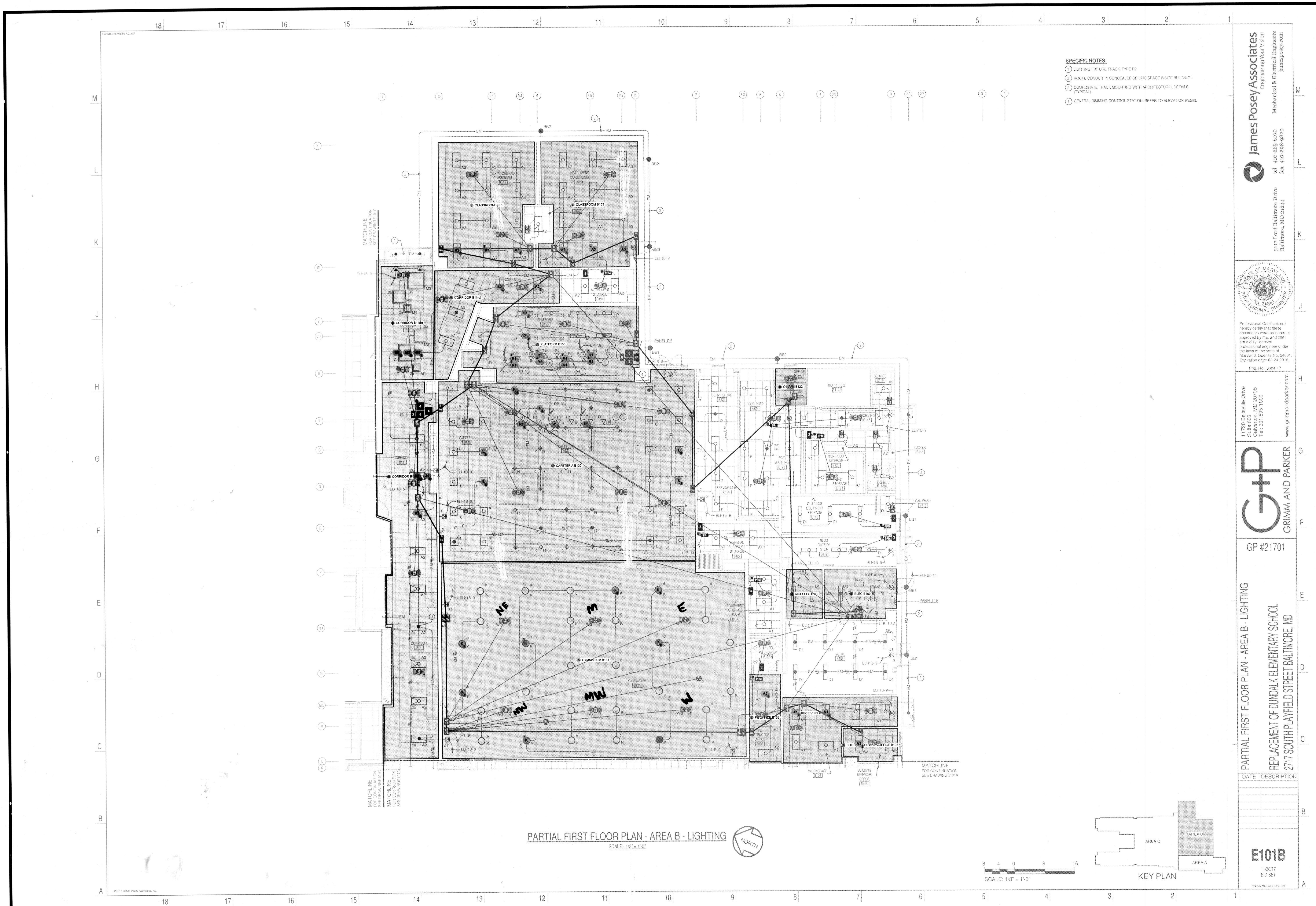
Date: May 02, 2018

Sheet: 1 of 5

FIRST FLOOR A

LUTRON
Lutron Electronics Co., Inc.
7200 Suter Road
Coopersburg, PA 18036, USA
+1.610.282.3800 | Fax: +1.610.282.1146

Lutron Designer 11.0.1



System Layout

General Notes

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   1a. If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
2. Verify shade design with Lutron.
3. See Cover Sheet and One-Lines for additional information.

Legend

- GP — CGP12-1204M100-20-CGP038 (1)
- 4T 16 — QSN-4T16-S (14)
- 5 — GRXSLD-4106-WH (2)
- 4 — LVS: RRU-UNV (3)
- MS-B102-WH (6)
- 2 — P&S: RT12W-30 (1)
- 3 — P&S: TM870 (7)
- TC — QSGR-TC-3S-WH-CPN5825 (1)
- QSWS2-3BI-WH (5)
- QSWS2-3BRLI-WH (11)
- QSWS2-5BRLI-WH (2)
- 6 — SG-4NRLI-WH-EGN (1)
- DL — EC-DIR-WH (2)
- LOS-CDT-2000R-WH (28)
- LOS-CDT-2000-WH (10)
- LUT-WSPSM24V-360-CPN6111 (6)
- ELI — LUT-ELI-3PH (PP-DV) (1)
- ESN — QSE-CI-AP-D (1)
- PP — PP-DV (2)
- PPM — PP-DV-M (6)
- KIT — C-ESN-SETUP (1)

Project Name:
Dundalk Elementary School

Location:
Baltimore, Maryland

Project Number:
2094008.1.2

Created by:
Devin Maurizio

File Name:
Dundalk Elementary School.lutd

Document Revision:
0

Date: May 02, 2018

Sheet: 2 of 5

FIRST FLOOR B

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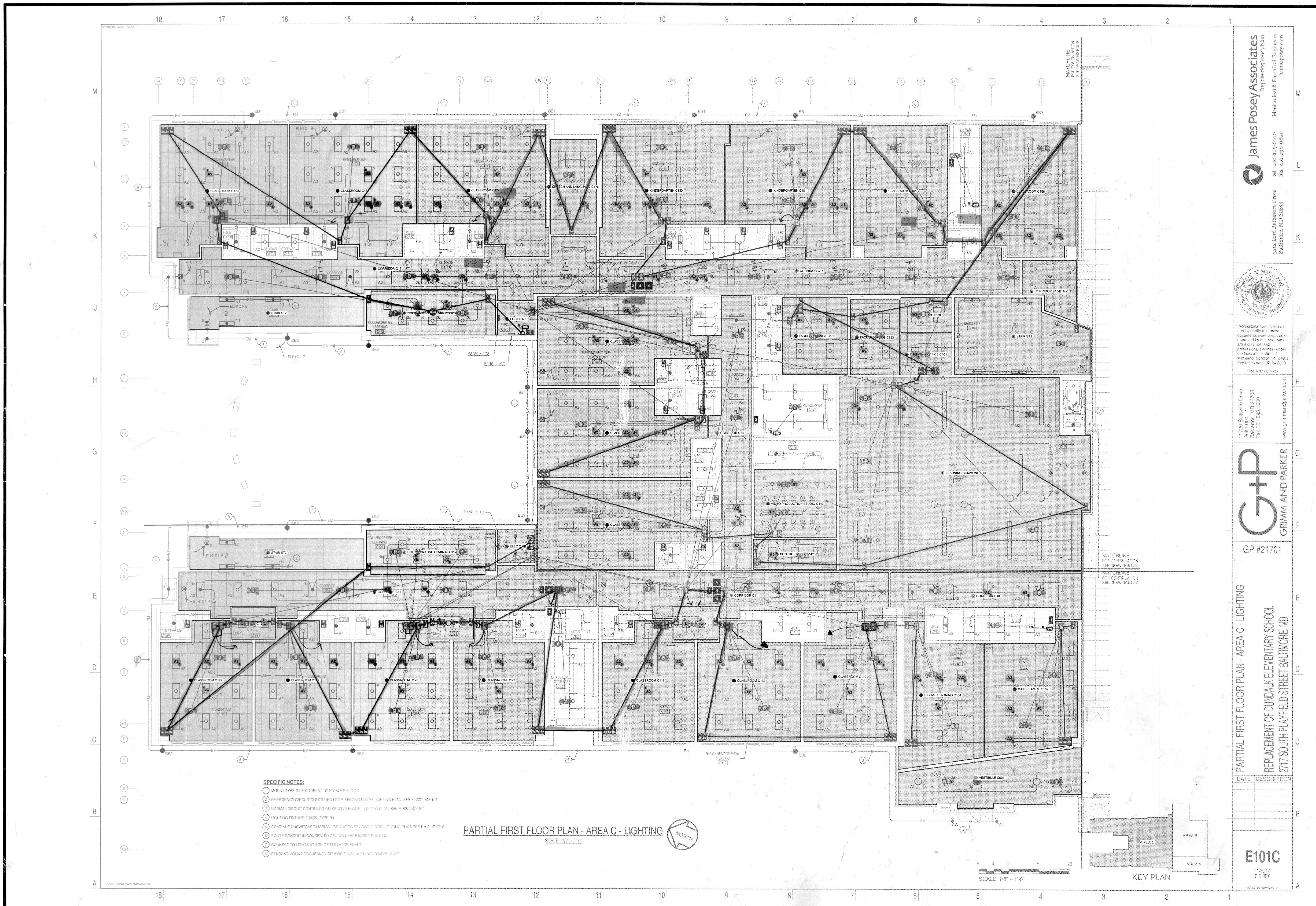

System Layout

General Notes

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   1a. If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
2. Verify shade design with Lutron.
3. See Cover Sheet and One-Lines for additional information.

Legend

- QSN-4T16-S (41)
- QSM2-4W-C (1)
- LVS: RRU-UNV (6)
- MS-B102-WH (24)
- NTSTV-DV-WH (1)
- P&S: RT12W-30 (3)
- P&S: TM870 (4)
- QSGR-TC-3S-WH-CPN5825 (2)
- QSWS2-1BI-WH (1)
- QSWS2-3BI-WH (19)
- QSWS2-3BRLI-WH (77)
- QSWS2-5BI-WH (1)
- EC-DIR-WH (2)
- LOS-CDT-2000R-WH (81)
- LOS-CDT-2000-WH (5)
- LUT-WSPSM24V-360-CPN6111 (2)
- LUT-ELI-3PH (PP-DV) (2)
- QSE-CI-AP-D (2)
- QSE-CI-DMX (1)
- PP-DV-M (4)
- QSPS-DH-1-75 (2)

Project Name:
Dundalk Elementary School

Location:
Baltimore, Maryland

Project Number:
2094008.1.2

Created by:
Devin Maurizio

File Name:
Dundalk Elementary School.lutd

Document Revision:
0

Date: May 02, 2018

Sheet: 3 of 5

FIRST FLOOR C

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Coopersburg, PA 18036, USA
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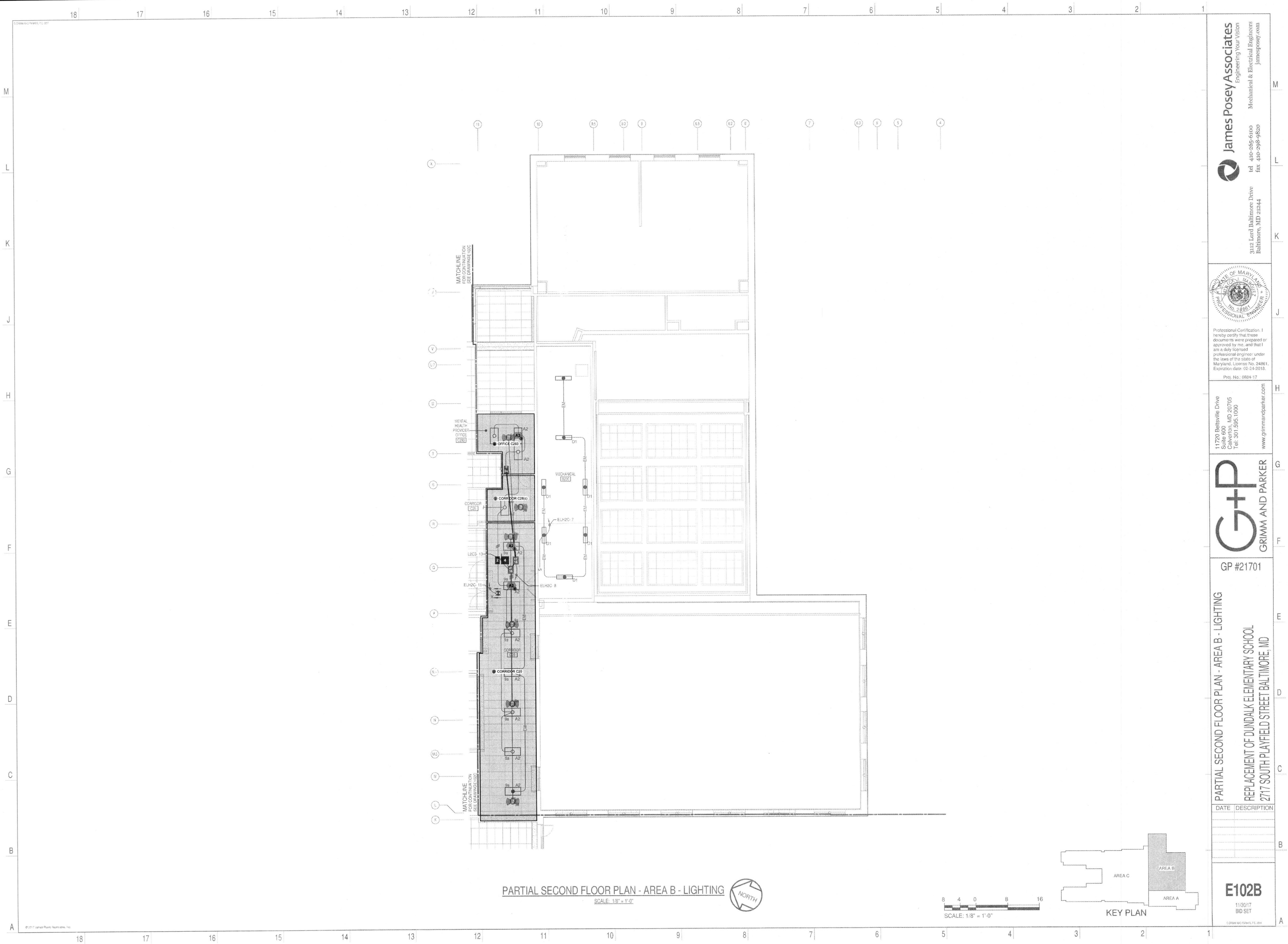

System Layout

General Notes

1. This layout is for system schematic purposes only. Contractor shall locate, install, and wire equipment according to Lutron installation and specification documents.
   1a. If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
2. Verify shade design with Lutron.
3. See Cover Sheet and One-Lines for additional information.

Legend

- 4T 16 — QSN-4T16-S (2)
- 4 — LVS: RRU-UNV (1)
- 2 — P&S: RT12W-30 (1)
- D 3RL — QSWS2-3BRLI-WH (1)
- OS DT — LOS-CDT-2000R-WH (6)

Project Name:
Dundalk Elementary School

Location:
Baltimore, Maryland

Project Number:
2094008.1.2

Created by:
Devin Maurizio

File Name:
Dundalk Elementary School.lutd

Document Revision:
0

Date: May 02, 2018

Sheet: 4 of 5

SECOND FLOOR B

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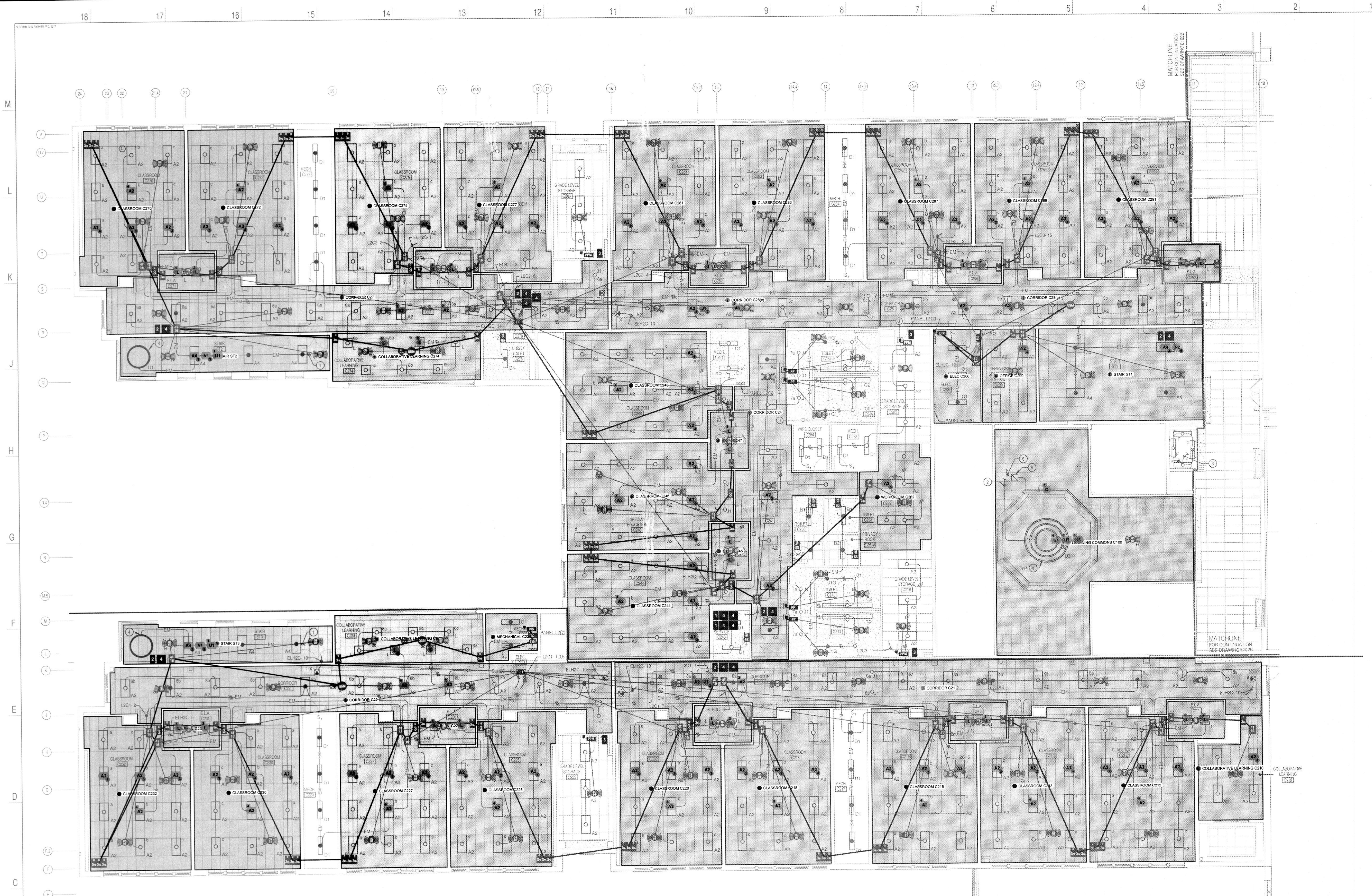
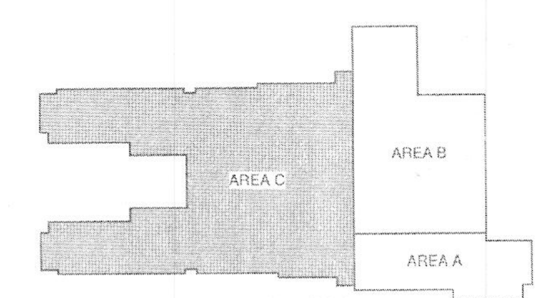


SPECIFIC NOTES:

1. EMERGENCY CIRCUIT CONTINUED ON FIRST FLOOR LIGHTING PLAN. SEE E101C, NOTE 2.
2. NORMAL CIRCUIT CONTINUED ON FIRST FLOOR LIGHTING PLAN. SEE E101C, NOTE 3.
3. CONNECT TO ELEVATOR SHAFT RECEPTACLE CIRCUIT.
4. LOCATE REMOTE DRIVER IN ACCESSIBLE CEILING ABOVE.
5. LOCATION OF REMOTE DRIVERS FOR TYPE Q LIGHTING FIXTURE. PROVIDE LOW VOLTAGE CONTROL WIRING FOR FIXTURE TYPE Q FROM DMX CONTROL INTERFACE LOCATED IN LIBRARIAN'S OFFICE C101 ON DRAWING E101C.
6. PROVIDE UNSWITCHED NORMAL CIRCUIT TO FIXTURE TYPE Q. SEE E101C, NOTE 5.

PARTIAL SECOND FLOOR PLAN - AREA C - LIGHTING

SCALE: 1/8" = 1'-0"



KEY PLAN

SCALE: 1/8" = 1'-0"

E102C

PARTIAL SECOND FLOOR PLAN - AREA C - LIGHTING

REPLACEMENT OF DUNDALK ELEMENTARY SCHOOL

2717 SOUTH PLAYFIELD STREET BALTIMORE, MD

GP #21701

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Engineering Your Vision
Mechanical & Electrical Engineers
3112 Lord Baltimore Drive
Baltimore, MD 21244
tel 410-265-6100
fax 410-298-9820
jamesposey.com

DATE DESCRIPTION

System Layout

General Notes

1. This layout is for system schematic purposes only. Contractor shall locate, install, and wire equipment according to Lutron installation and specification documents.
   1a. If the Lutron Sensor Layout and tuning service has been purchased, then daylight and occupancy sensors are placed by Lutron.
2. Verify shade design with Lutron.
3. See Cover Sheet and One-Lines for additional information.

Legend

- QSN-4T16-S (43)
- QSM2-4W-C (4)
- LVS: RRU-UNV (13)
- MS-B102-WH (6)
- P&S: RT12W-15 (2)
- P&S: RT12W-30 (6)
- P&S: TM870 (4)
- QSGR-TC-3S-WH-CPN5825 (2)
- QSWS2-3BI-WH (21)
- QSWS2-3BRLI-WH (93)
- EC-DIR-WH (3)
- LOS-CDT-2000R-WH (90)
- LOS-CDT-2000-WH (12)
- LUT-WSPSM24V-360-CPN6111 (3)
- LUT-ELI-3PH (PP-DV) (3)
- QSE-CI-AP-D (2)
- PP-DV (4)
- PP-DV-M (4)
- QSPS-DH-1-75 (2)

Project Name:
Dundalk Elementary School

Location:
Baltimore, Maryland

Project Number:
2094008.1.2

Created by:
Devin Maurizio

File Name:
Dundalk Elementary School.lutd

Document Revision:
0

Date: May 02, 2018

Sheet: 5 of 5

SECOND FLOOR C

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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 500FT (153M), 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 2,000FT, USE GRX-CBL-46L. TOTAL QS CONTROL WIRE LENGTH MUST NOT EXCEED 2,000FT (600M).

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	+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 LINKS B,C,D : +33 EACH
QP3 QUANTUM LIGHTING HUB	LINKS A,B : +33 EACH
QS DEVICES THAT CONSUME PDU	
QS WALLSTATION (SEETOUCH, 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	
1	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.
1	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 (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).
1	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.
1	ONSITE PERFORMANCE-VERIFICATION 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-VERIFICATION 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	
2	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	
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-E8S)	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-E8G)	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-E8P)	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-IW)	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-IW)	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-IW)	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

- △Q QS Control Link (Connect wires 1, 2, 3 and 4)*
- ▲Q QS Control Link (Connect wires 1, 3 and 4. Do not connect wire 2)*
- ▽P Panel Control Link (Connect wires 1, 2, 3, 4 and 5)*
- ▼P Panel Control Link (Connect wires 1, 2, 3 and 4. Do not connect wire #5)*
- ▷P Panel Control Link (Connect wires 1, 3, 4 and 5. Do not connect wire #2)*
- ◁S QS Sivoia Shade Control Link*
- ▲T 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
- ⧗ 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)
- D DMX Cable. Use Lutron GRX-CBL-DMX-250/GRX-CBL-DMX-500 or Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA Cable.
- E Ethernet cable. CAT5E or better cable for Lutron Network terminated with RJ45 connectors (not provided by Lutron). 328 ft (100 m) maximum run.
- F 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:
Dundalk Elementary School

Location:
Baltimore, Maryland

Project Number:
2094008.1.2

Created by:
Devin Maurizio

File Name:
Dundalk Elementary School.lutd

Document Revision:
0

May 02, 2018 | Sheet 1 of 20

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

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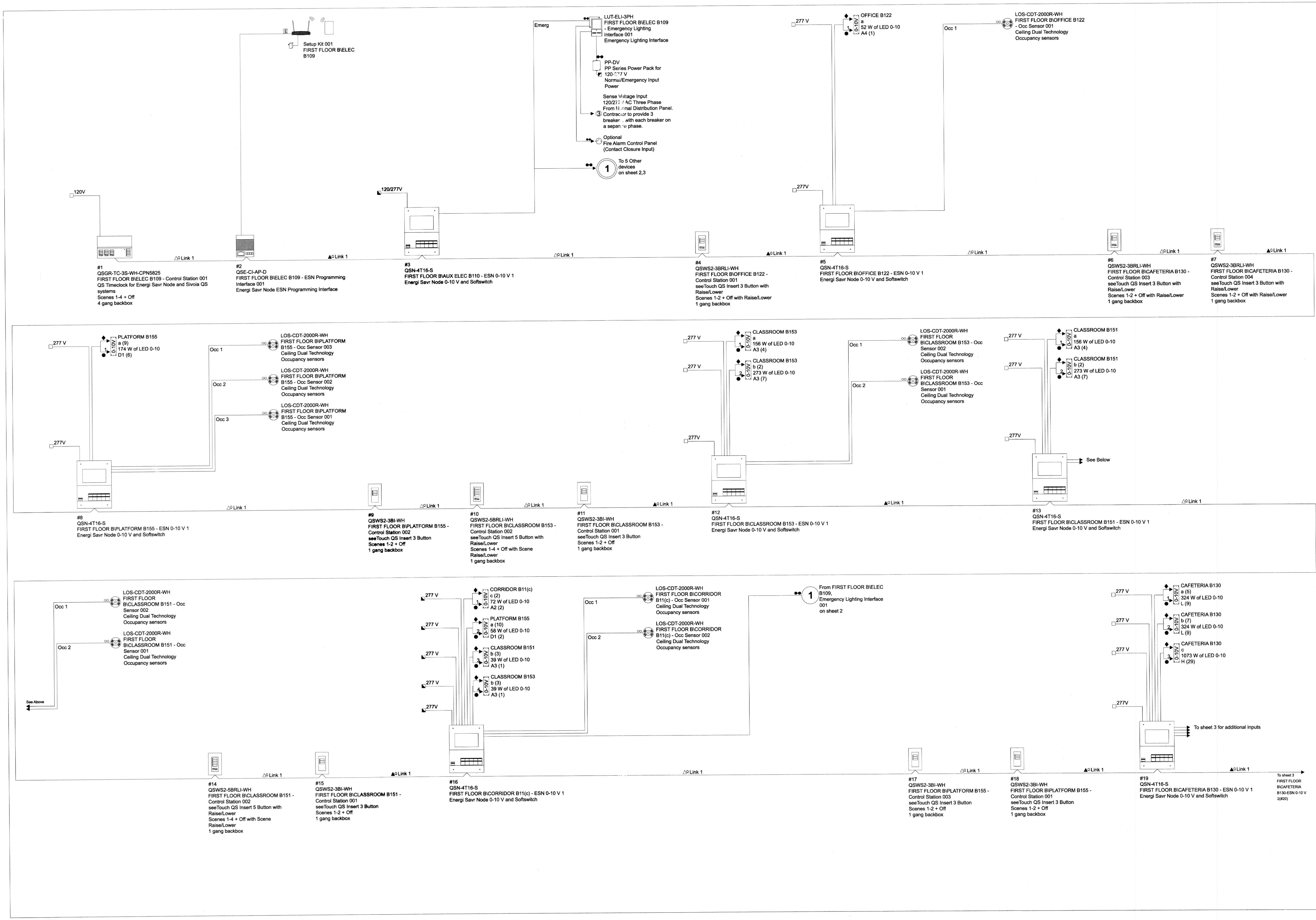

One-Line

Wire Legend

- △Q QS Control Link (Connect wires 1, 2, 3 and 4)*
- ▲Q QS Control Link (Connect wires 1, 3 and 4. Do not connect wire 2)*
- ▽P Panel Control Link (Connect wires 1, 2, 3, 4 and 5)*
- ▼P Panel Control Link (Connect wires 1, 2, 3 and 4. Do not connect wire #5)*
- ▷P Panel Control Link (Connect wires 1, 3, 4 and 5. Do not connect wire #2)*
- ◁S QS Sivoia Shade Control Link*
- ▲T 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
- 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)
- D DMX Cable. Use Lutron GRX-CBL-DMX-250/GRX-CBL-DMX-500 or Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA Cable.
- E Ethernet cable. CAT5E or better cable for Lutron Network terminated with RJ45 connectors (not provided by Lutron). 328 ft (100 m) maximum run.
- F 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:
Dundalk Elementary School

Location:
Baltimore, Maryland

Project Number:
2094008.1.2

Created by:
Devin Maurizio

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

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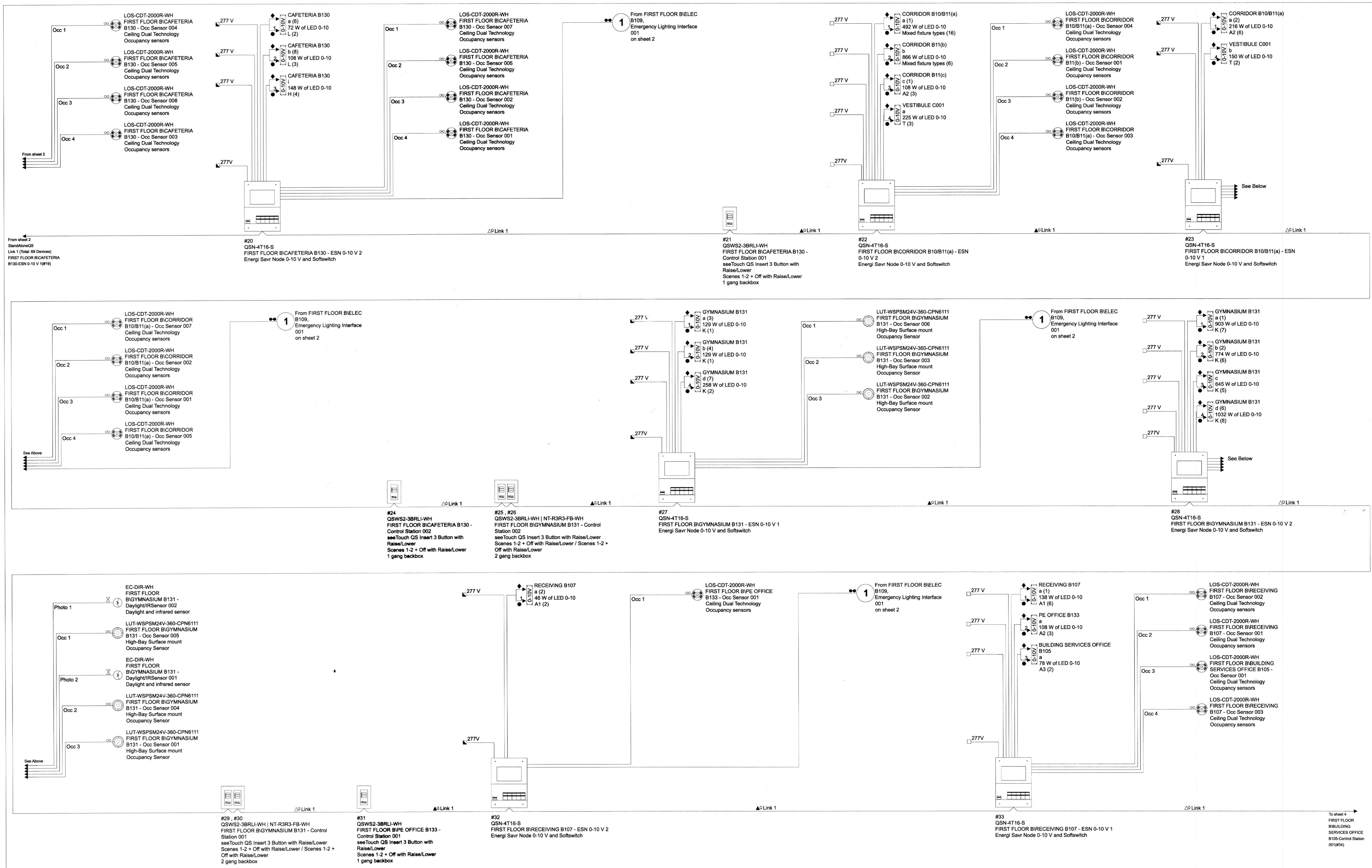

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
- 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 #89729 (Plenum) or Dura Flex 22/4 WA 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

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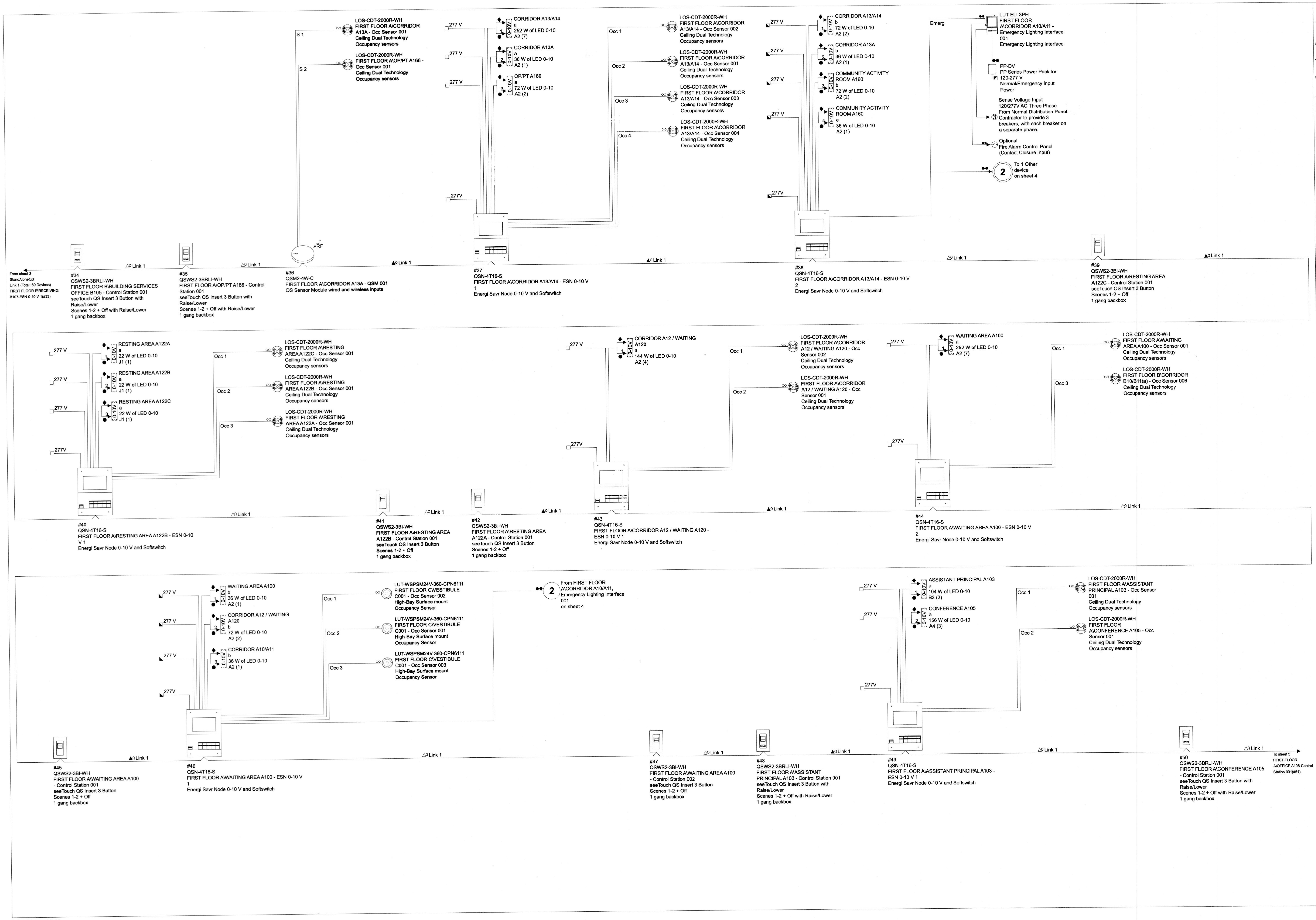

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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
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- 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
- 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 Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA Cable.
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- Wired Connection

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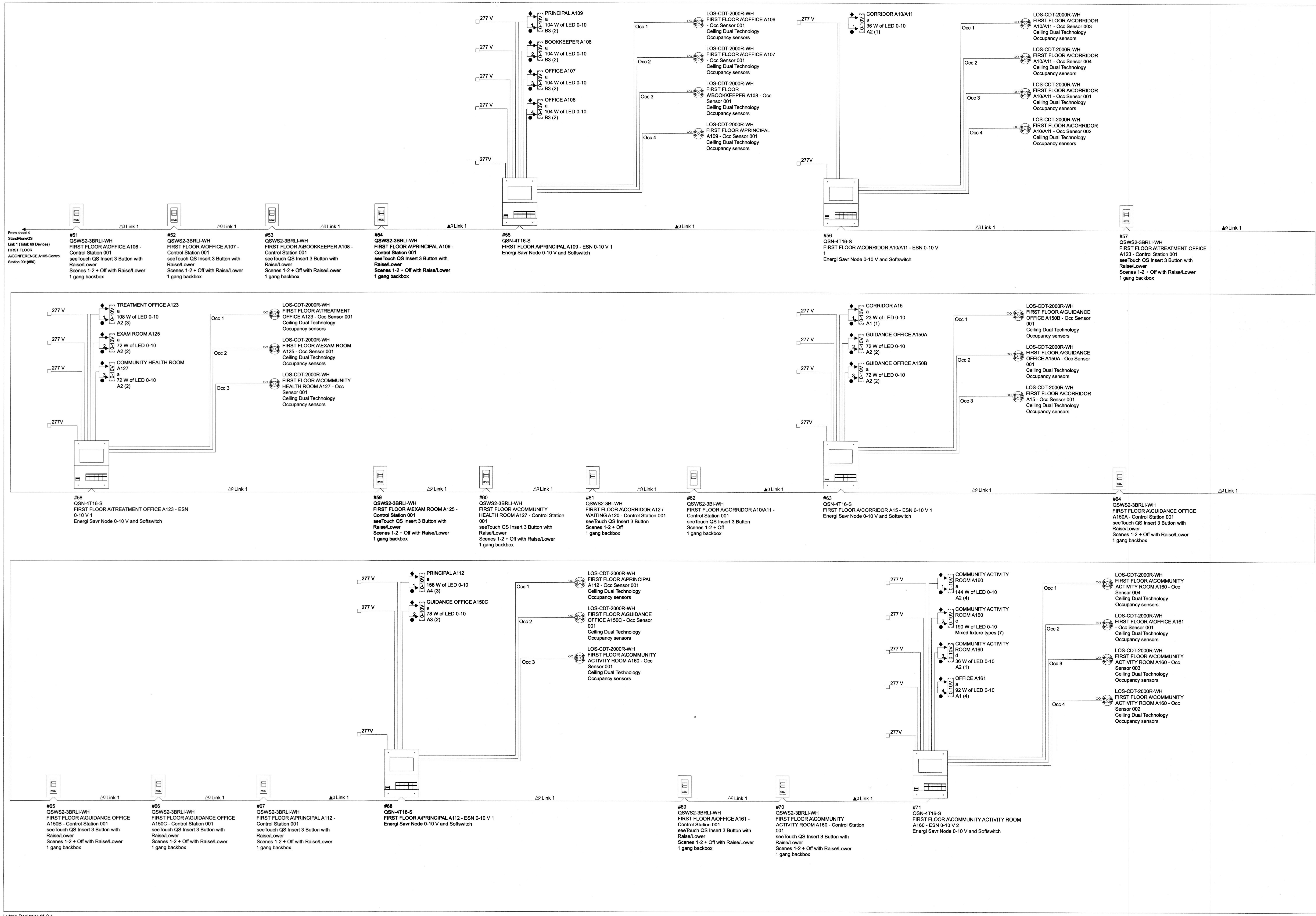

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 3 and 4. Do not connect wire 2)*
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- Panel Control Link (Connect wires 1, 2, 3 and 4. Do not connect wire #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 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
- 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 Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA Cable.
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- - - RF Connection
—— Wired Connection

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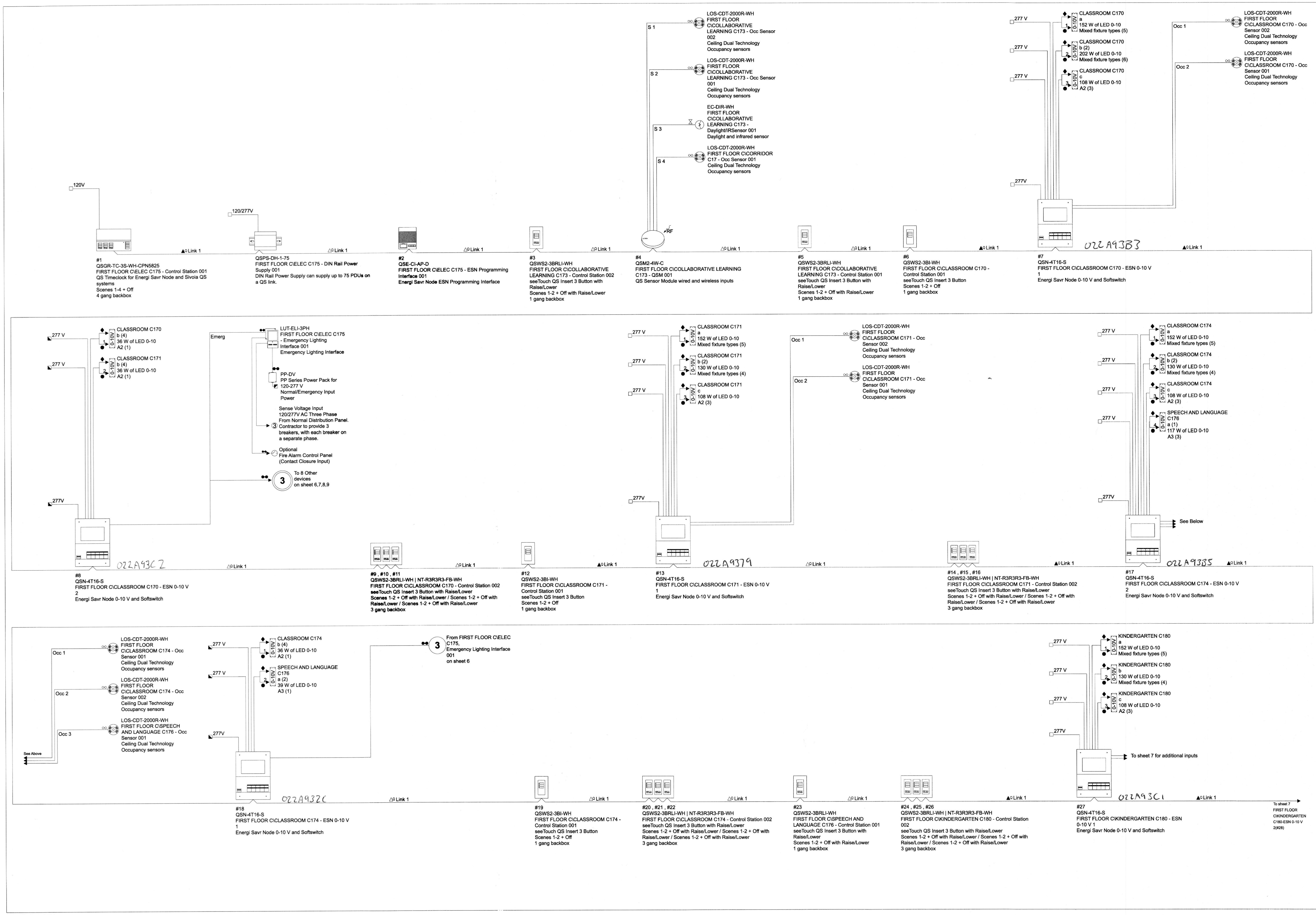

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
- 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 Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA Cable.
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RF Connection
Wired Connection

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May 02, 2018 | Sheet 6 of 20

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One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
- 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 Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA 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.
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Location:
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Project Number:
2094008.1.2

Created by:
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File Name:
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May 02, 2018 | Sheet 7 of 20

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

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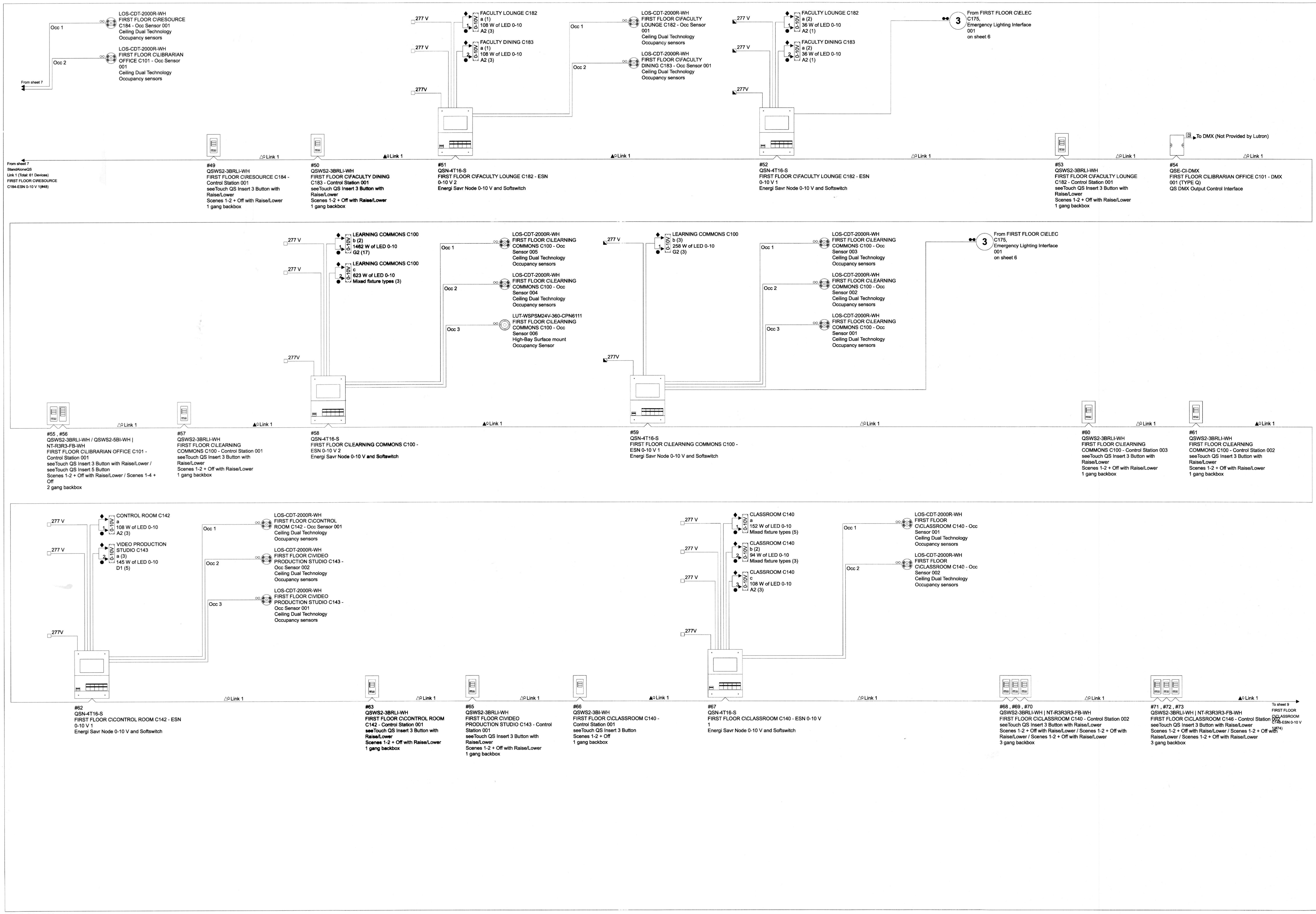

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
- 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 Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA Cable.
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- RF Connection
- Wired Connection

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Project Name:
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Project Number:
2094008.1.2

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One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
- 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 Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA 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

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File Name:
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May 02, 2018 | Sheet 9 of 20

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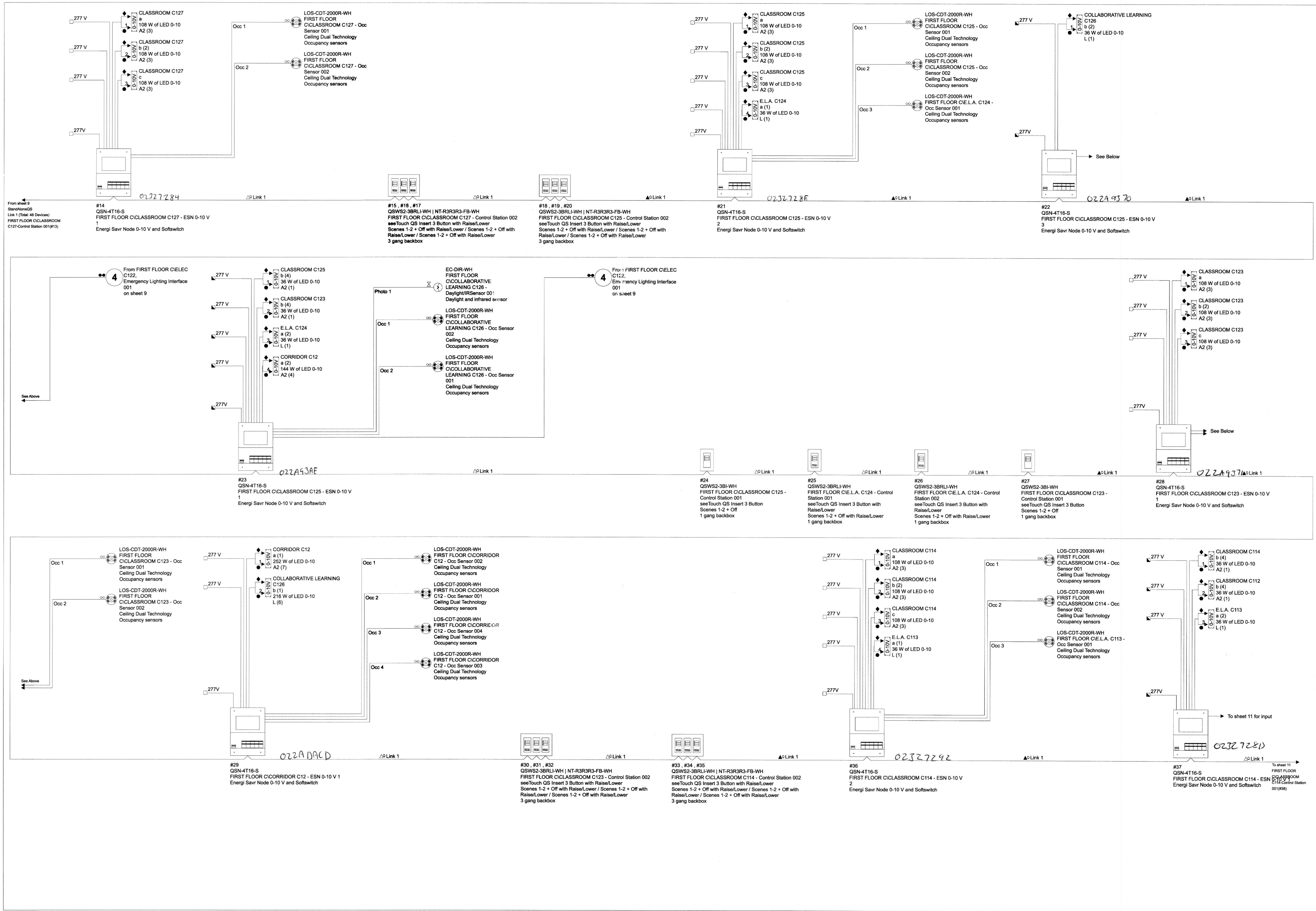

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
- 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)
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RF Connection
Wired Connection

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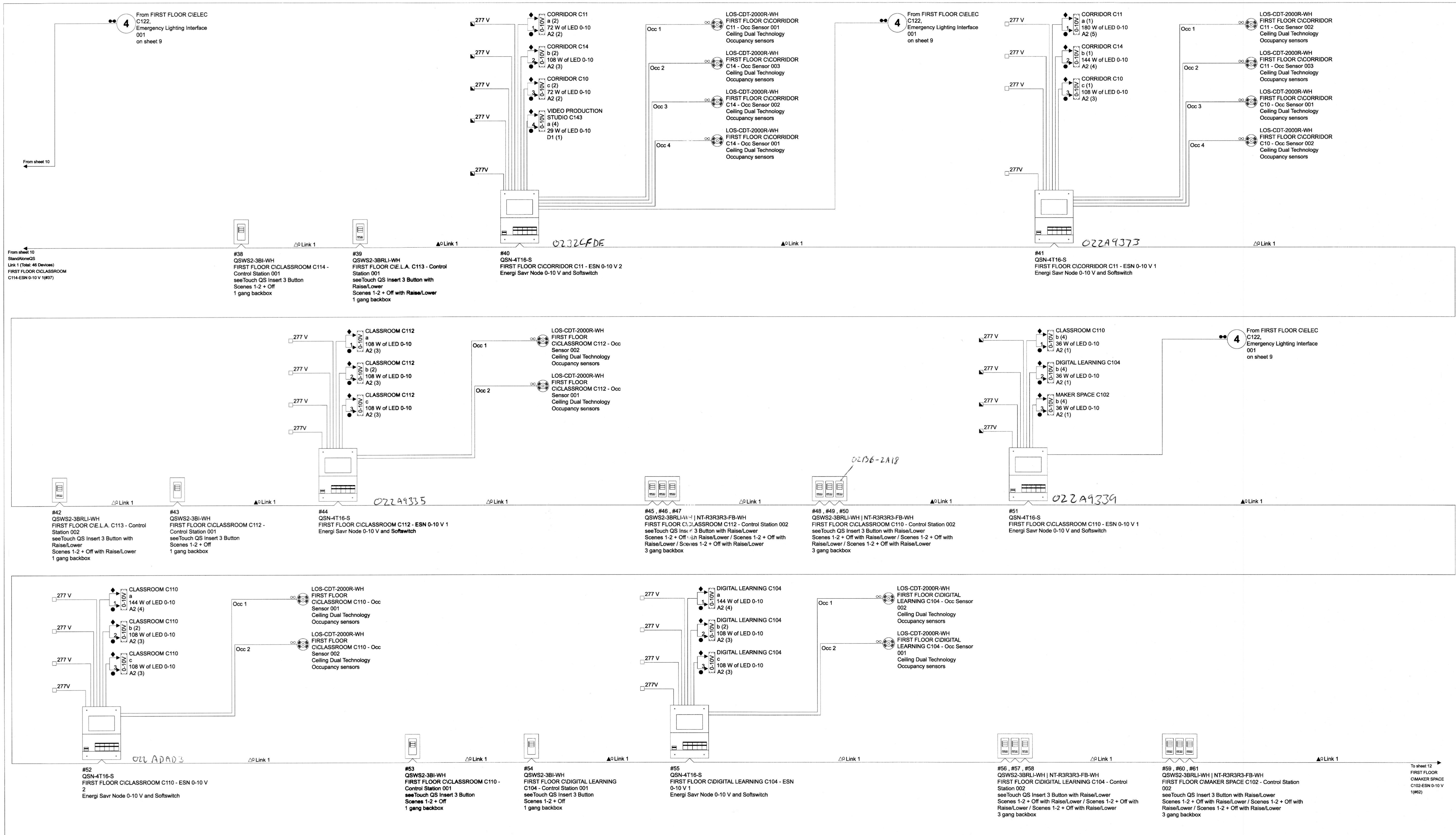

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
- 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)
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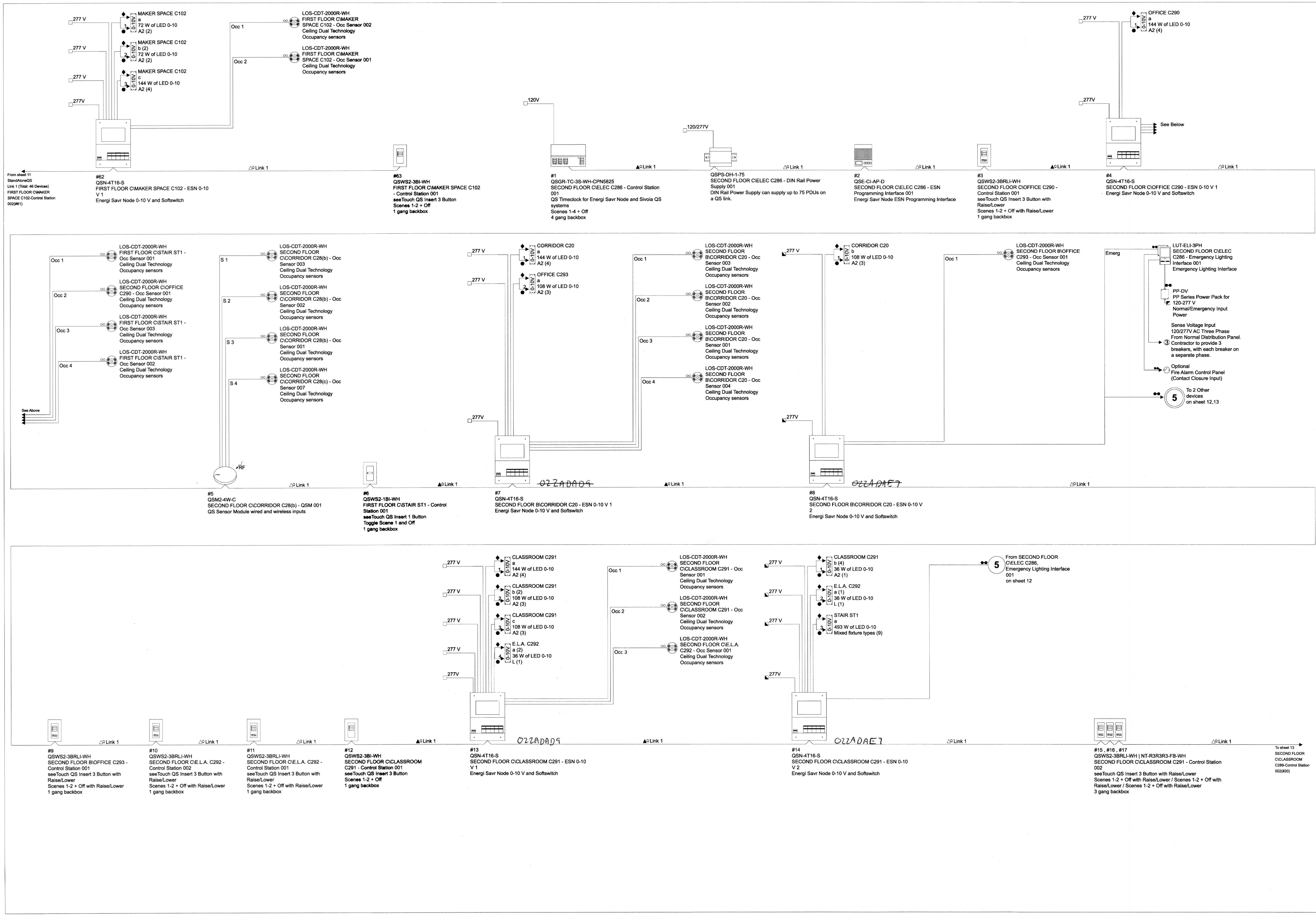

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
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- Lutron Sensor Cable C-CBL-522S or use 3#22 AWG (1.0 sq mm)
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2094008.1.2

Created by:
Devin Maurizio

File Name:
Dundalk Elementary School.lutd

Document Revision:
0

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

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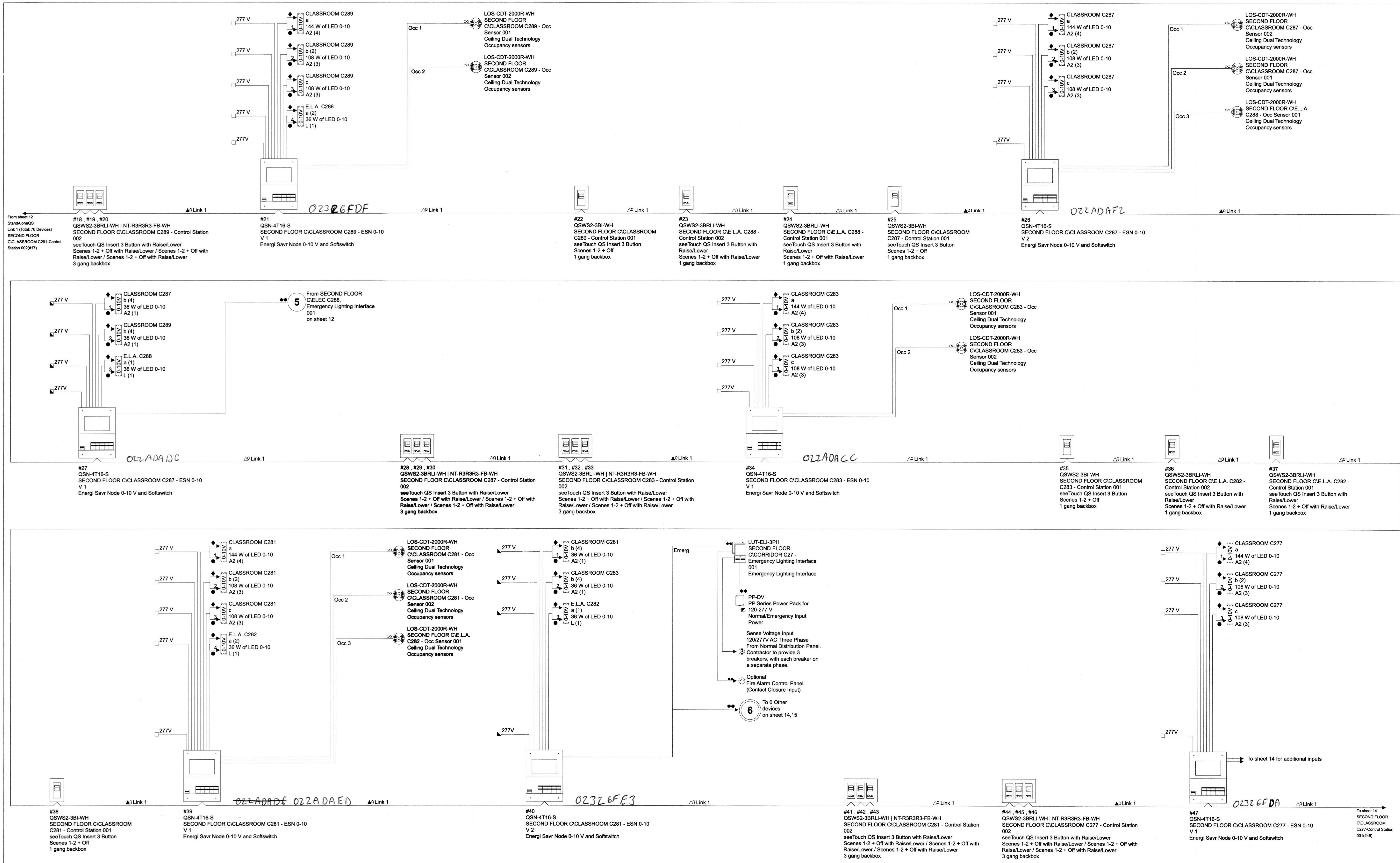

One-Line

Wire Legend

- QS Control Link (Connect wires 1, 2, 3 and 4)*
- QS Control Link (Connect wires 1, 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, 2, 3 and 4. Do not connect wire #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 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
- 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 Beldon #9729 (Non-plenum) or Beldon #89729 (Plenum) or Dura Flex 22/4 WA 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

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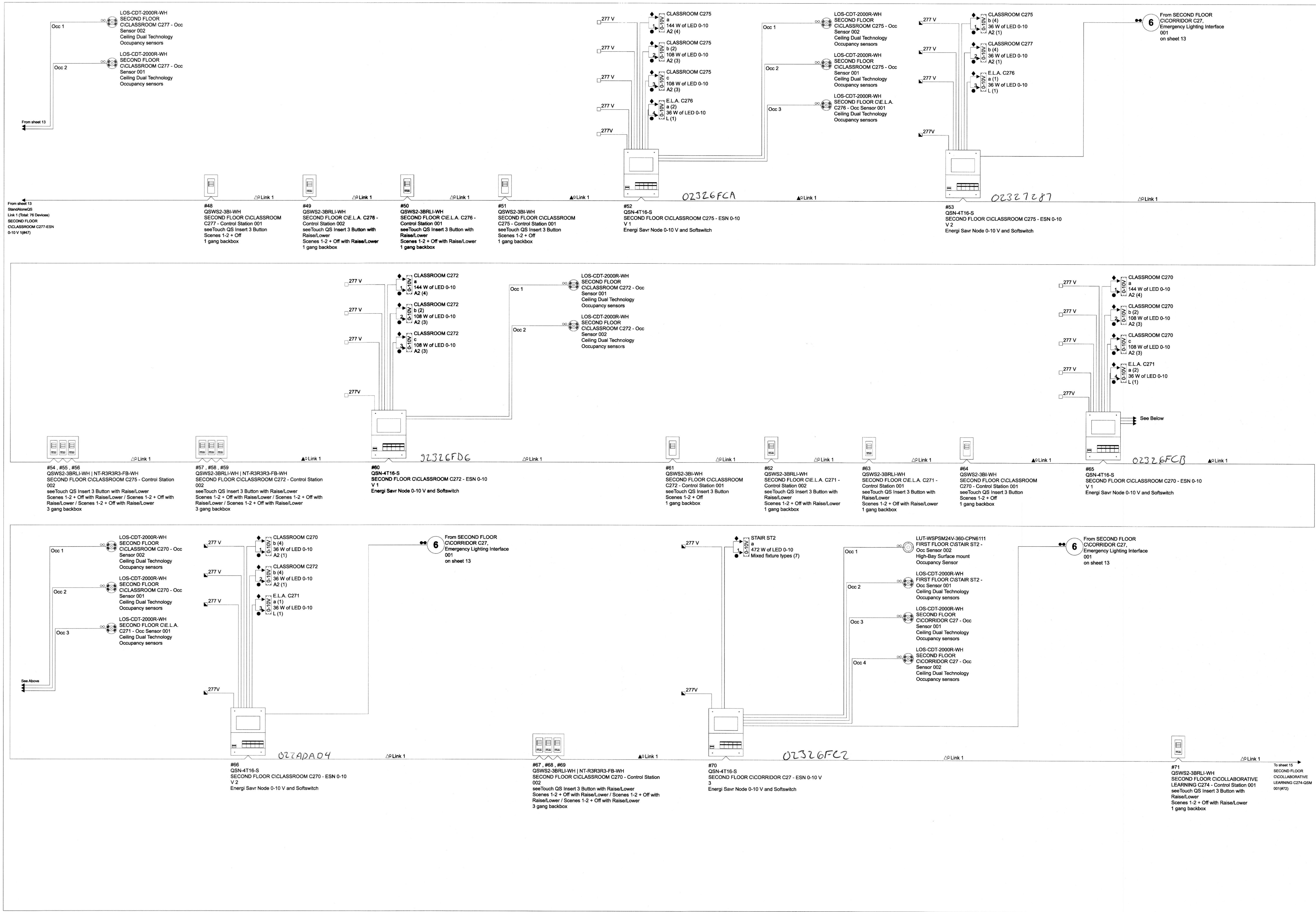

Lutron Designer 11.0.1

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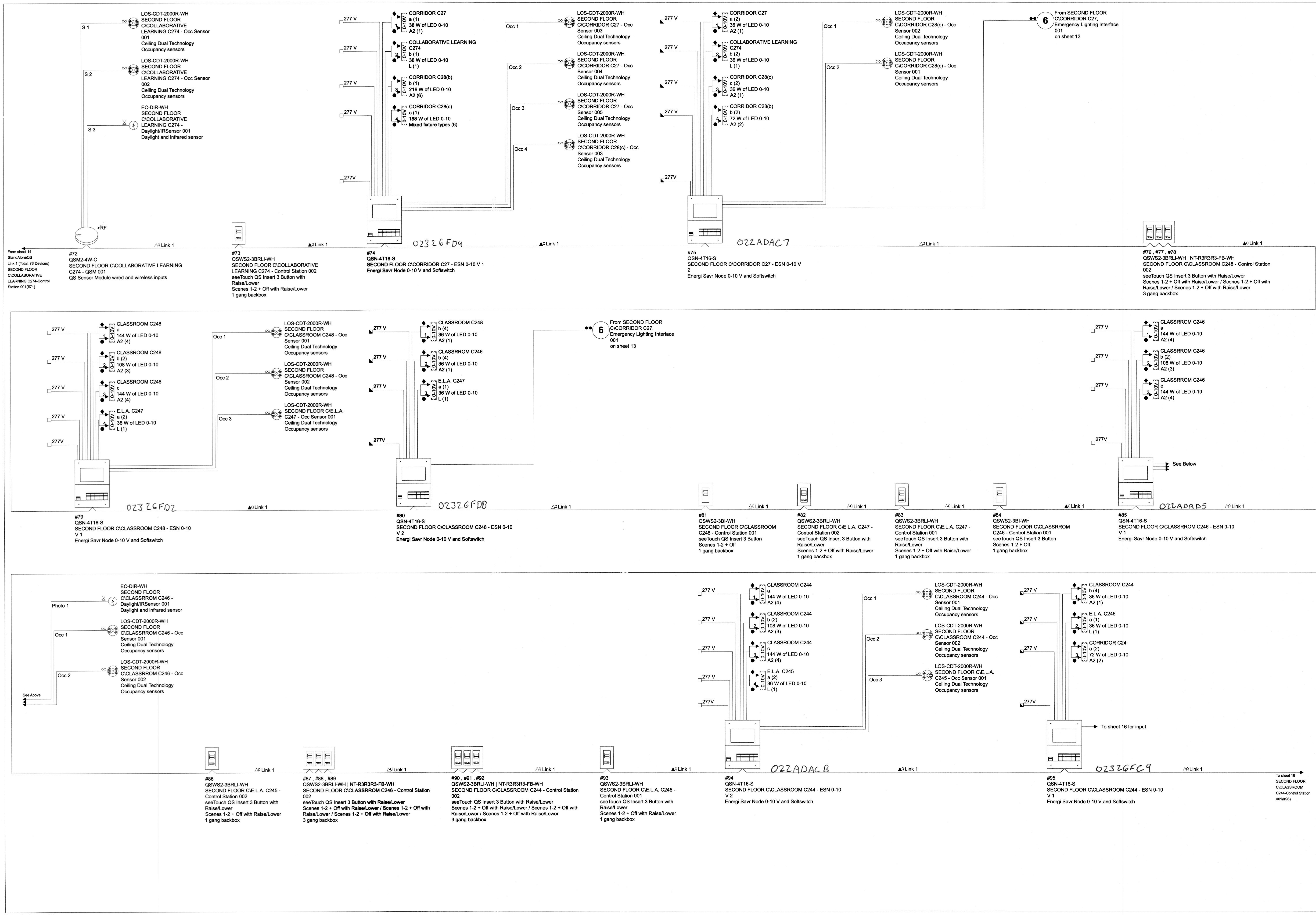

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Wired Connection

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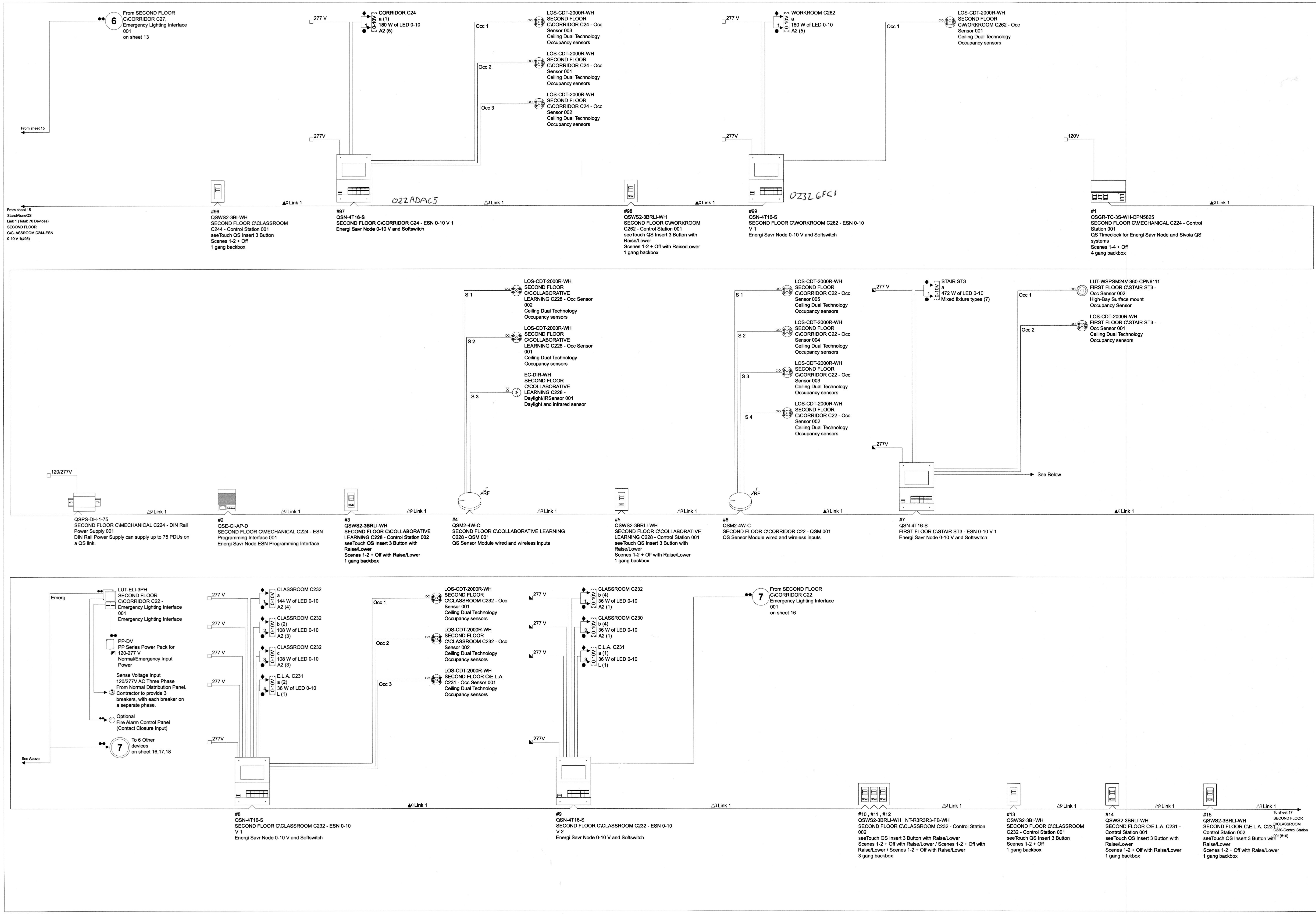

Lutron Designer 11.0.1

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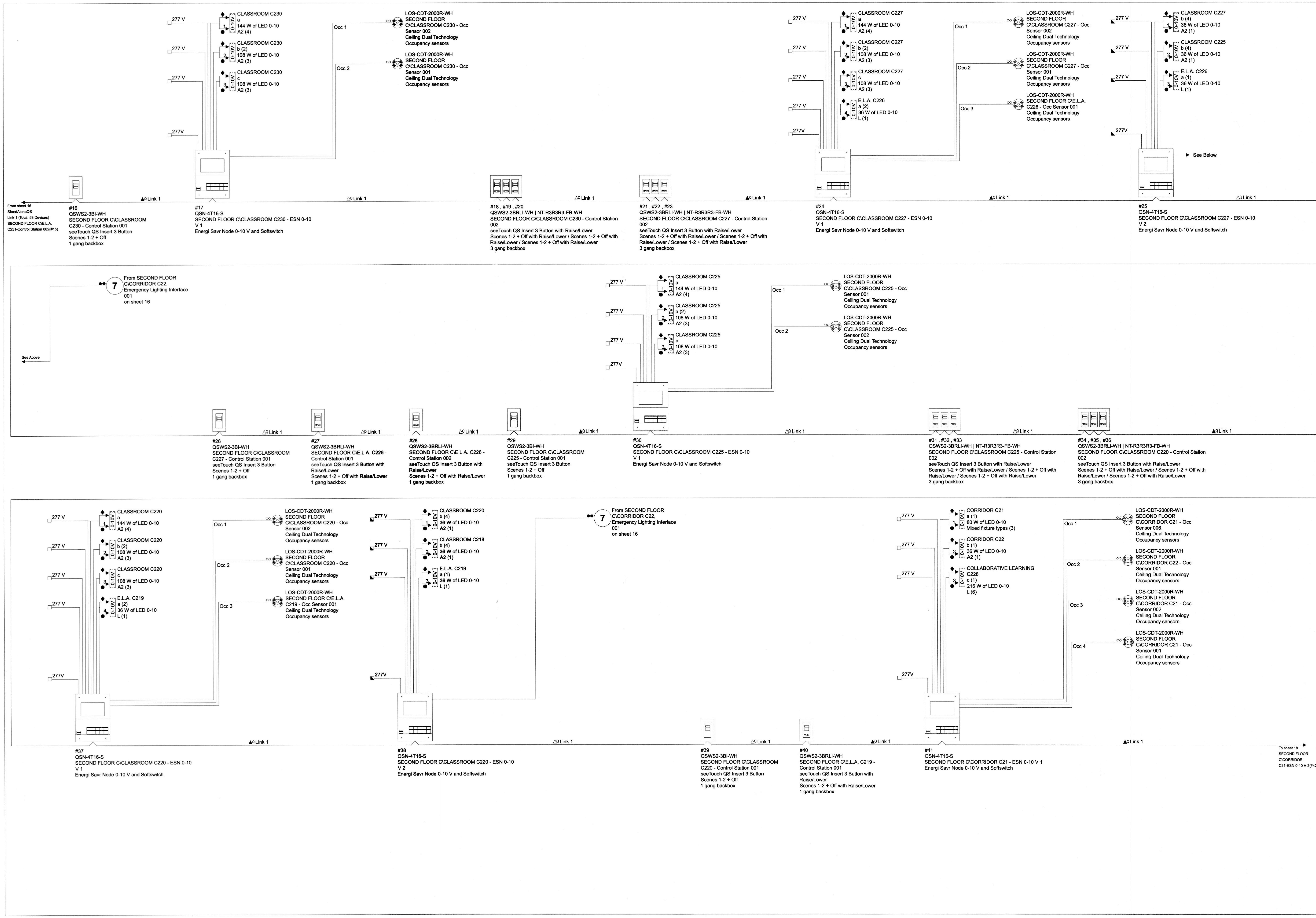

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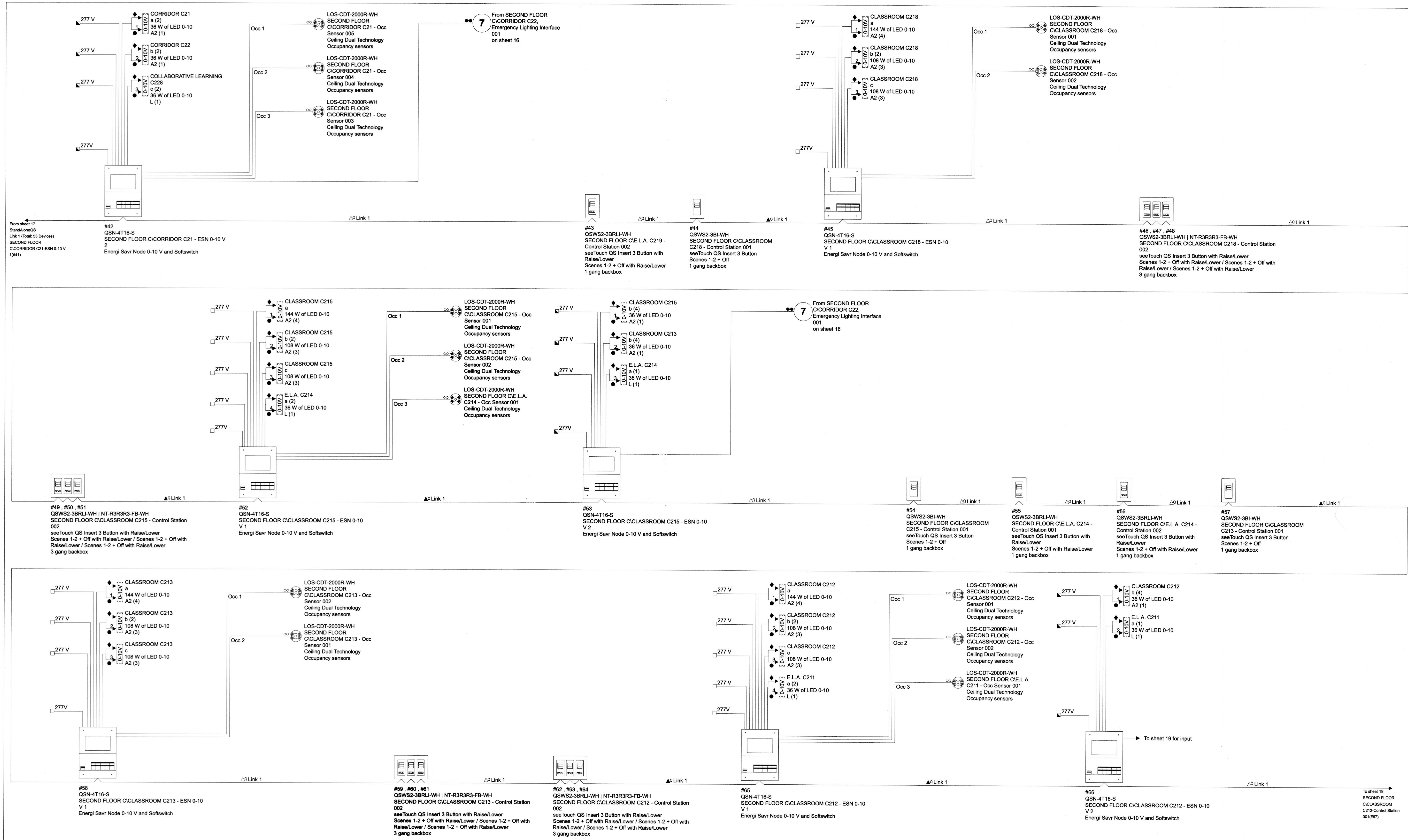

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- 2 #12 AWG (4 sq mm) + ground
- 3 #12 AWG (4 sq mm) + ground
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- 2#18 AWG (1.0 sq mm)
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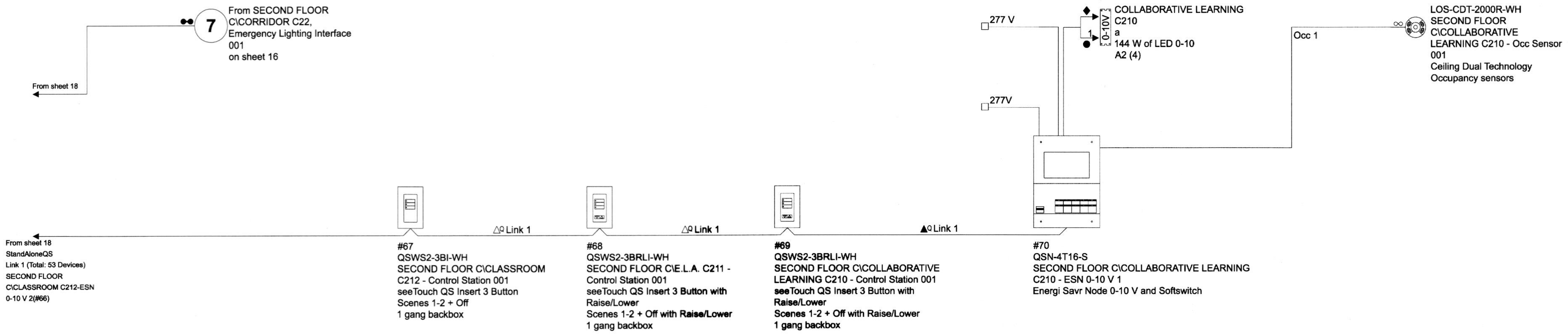

One-Line

Wire Legend

- △Q QS Control Link (Connect wires 1, 2, 3 and 4)*
- ▲Q QS Control Link (Connect wires 1, 3 and 4. Do not connect wire 2)*
- ▽P Panel Control Link (Connect wires 1, 2, 3, 4 and 5)*
- ▼P Panel Control Link (Connect wires 1, 2, 3 and 4. Do not connect wire #5)*
- ▷P Panel Control Link (Connect wires 1, 3, 4 and 5. Do not connect wire #2)*
- ◁S QS Sivoia Shade Control Link*
- ▲T Belden Cable 1387LA(Or Equivalent)
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- 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)
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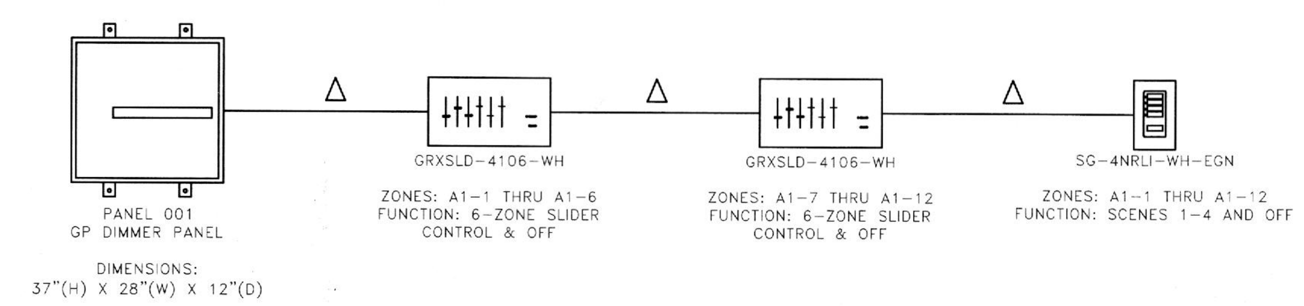
WIRING SYMBOLS

Δ LUTRON CABLE GRX-CBL-46L (5 CONDUCTOR NON-PLENUM) OR GRX-PCBL-46L (5 CONDUCTOR PLENUM RATED). OTHERWISE USE 2 #12AWG (2.5MM²), 1 BELDEN #9461, AND BETWEEN PANELS ADD 1 #18AWG (1.0MM²) FOR EMERGENCY SENSING.

GENERAL NOTES

1. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND WIRE THE LCS EQUIPMENT PER LUTRON'S INSTALLATION INSTRUCTIONS AND SPECIFICATION SHEETS.
2. ALL WORK SHALL COMPLY WITH THE CODES, LAWS, ORDANCES, RULES AND REGULATIONS OF AUTHORITIES GOVERNING THE WORK.
3. THE MAXIMUM WIRE LENGTH OF A PANEL OR CSD LINK IS 2,000 FEET. A MX-RPTR IS USED TO EXTEND THE LENGTH OF A LINK ANOTHER 2,000 FEET. A MAXIMUM OF (3) MX-RPTR'S MAY BE USED PER LINK FOR MAXIMUM LENGTH OF 8,000 FEET PER LINK.



ONE-LINE DIAGRAM G4000	**Dundalk Elementary School** Baltimore, MD	Project Number: 2094008 Drawn By: DMM Drawing Revision: 0 Drawing Date: 05.02.18 Sheet: 1	Lutron Electronics Co., Inc. (610) 282-3800 | fax (610) 282-1146 onesource ASSOCIATES INC 410.309.4900 | fax 410.309.4910