

LEVITON

Applications Cookbook

California Title 24 2016

Version 5.0

FOR REFERENCE ONLY

TITLE 24 COOKBOOK NOTES

LEVITON

1. Refer to manufacturer's data sheets and installation instructions prior to installation
2. Line feed 120/230/277VAC, 60 Hz
3. Ground not shown. Ground devices per applicable national and local codes and best practices
4. For emergency power situations, illustrations assume transfer switch by others upstream of shown devices
5. Line voltage load not to exceed contact rating per device specifications
6. Power packs receiving separate feeds for switched loads and self power must have both feeds on the same phase
7. All low-voltage devices consume current. Device power budget is estimated for these details - additional power sources may be required. See product literature for power specifications.
8. Maximum run length for analog wiring is 1000 feet @ #18 AWG
9. Sensors wired in parallel will cause line voltage relay closure when occupancy is detected by any unit.
10. Devices in series requiring contact closure from a single device (clock input, demand response, emergency, etc.), must follow these wiring conventions: First device in sequence provides the +V to the triggering relay; signal from closure attached to all devices in sequence input; com from first device in sequence attached to com on all devices in sequence.
11. Ultrasonic ceiling mount sensors should be located a minimum of six (6) feet from HVAC supply/return vents
12. Trough mounted, pendant mounted, and pendant mounted indirect lighting sources affect the operation of locally mounted sensors. Contractor is responsible for adjusting sensor locations to allow for proper operation
13. Contractor is responsible for proper sensitivity and time delay settings for non-adaptive products, following the manufacturer's recommended placement, and filed verification of circuits with respect to power pack placement
14. Contractor is responsible for coordinating the operational options of sensors and power packs with the specific work requirements:

    -Work relevant energy code requirements affect circuits to be controlled and their control characteristics

    -One power pack is required for each controlled circuit

    -Refer to power pack data sheet for power output and installation guide for maximum number of sensors connected to a power pack

    -If multiple circuits are to be controlled by a sensor, auxiliary relays may be used in conjunction with a power pack
15. Ceiling sensors mounted over doorways should be place one (1) foot inside the threshold
16. Up to 100 Mark VII style ballasts may be controlled per daylighting zone by mini-Z
17. All relays shown in de-energized state
18. Individually cap off unused leads
19. One-line parenthesis use:

    (X) — Functional

    (#) — Terminal
20. Plug load control — Commercial receptacle P/Ns:

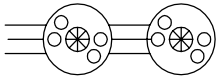
    - Standard Duplex:
      - Split Control (1 Outlet) CR015-1PX, CR020-1PX
      - Full Control (2 Outlets) CR015-2PX, CR020-2PX
    - Decora:
      - Split Control (1 Outlet) 16252-1PX, 16352-1PX
      - Full Control (2 Outlets) 16252-2PX, 16352-2PX

TITLE 24 COOKBOOK NOTES

DRAWING SYMBOLS

No connection

Connection



Devices wired in parallel

DRAWING ABBREVIATIONS

LC	Luma-CAN
LV	Low voltage
HV	High voltage switch (maintained)
LVM	Low voltage switch (momentary)
	- equal to Leviton 1081 (toggle) or Leviton 56081 (Decora)
LVT	Low voltage switch (maintained) - equal to Leviton 12021-2 (toggle) or Leviton 56021-2 (Decora)
LV2	IRC low voltage switch
UON	Unless otherwise noted
BLK	Black
WHT	White
BLU	Blue
YEL	Yellow
ORG	Orange
VIO	Violet
BRN	Brown

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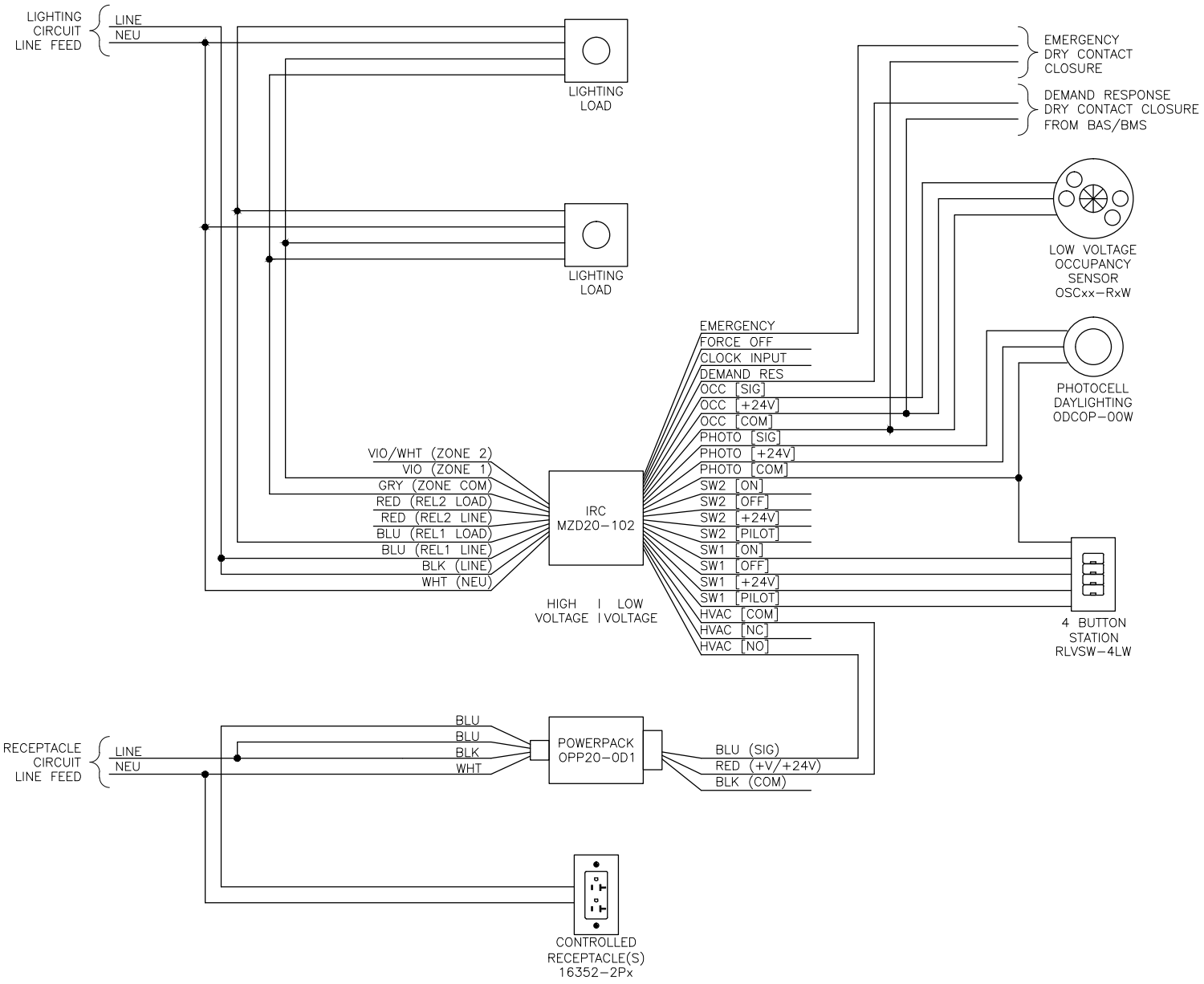
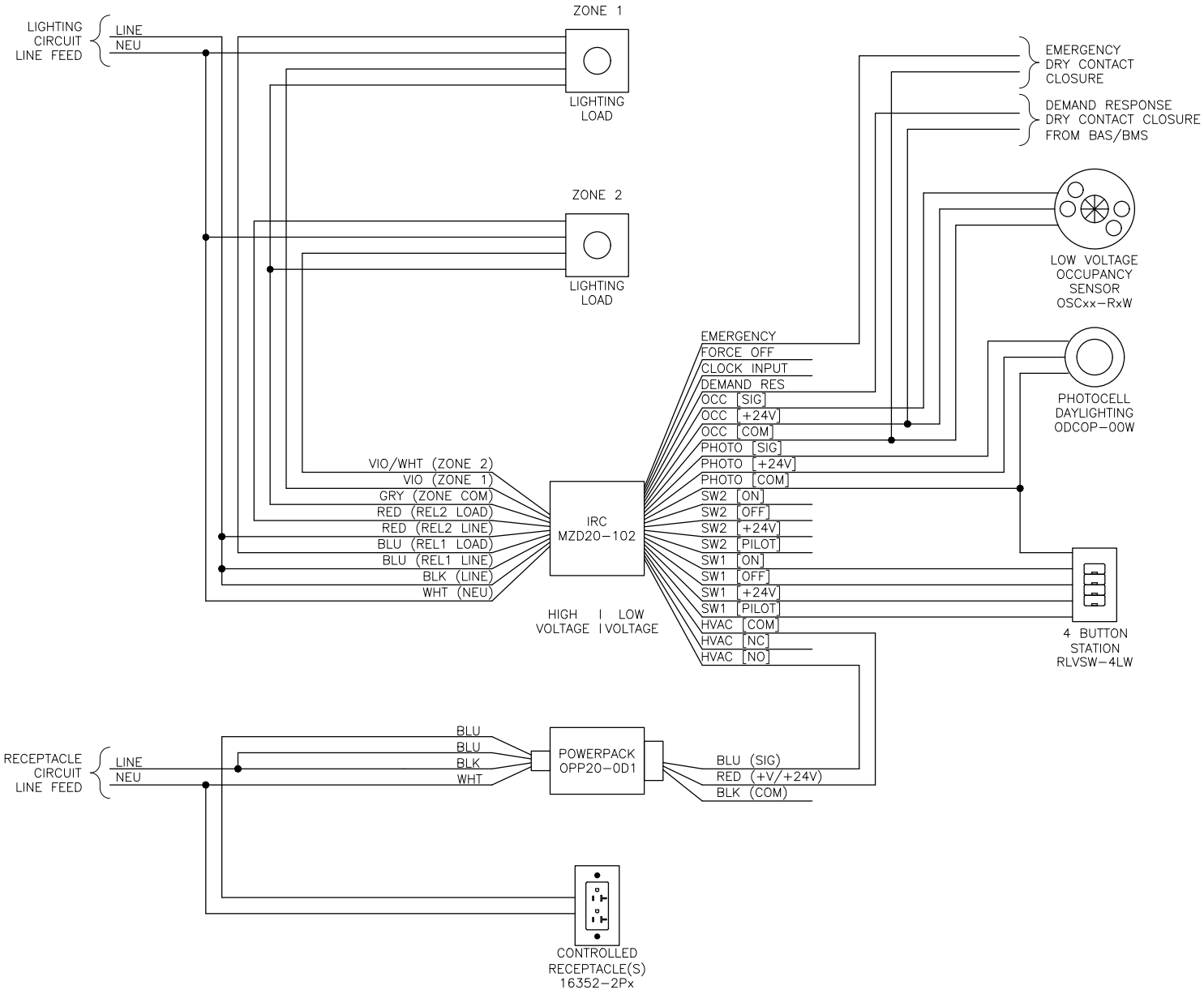
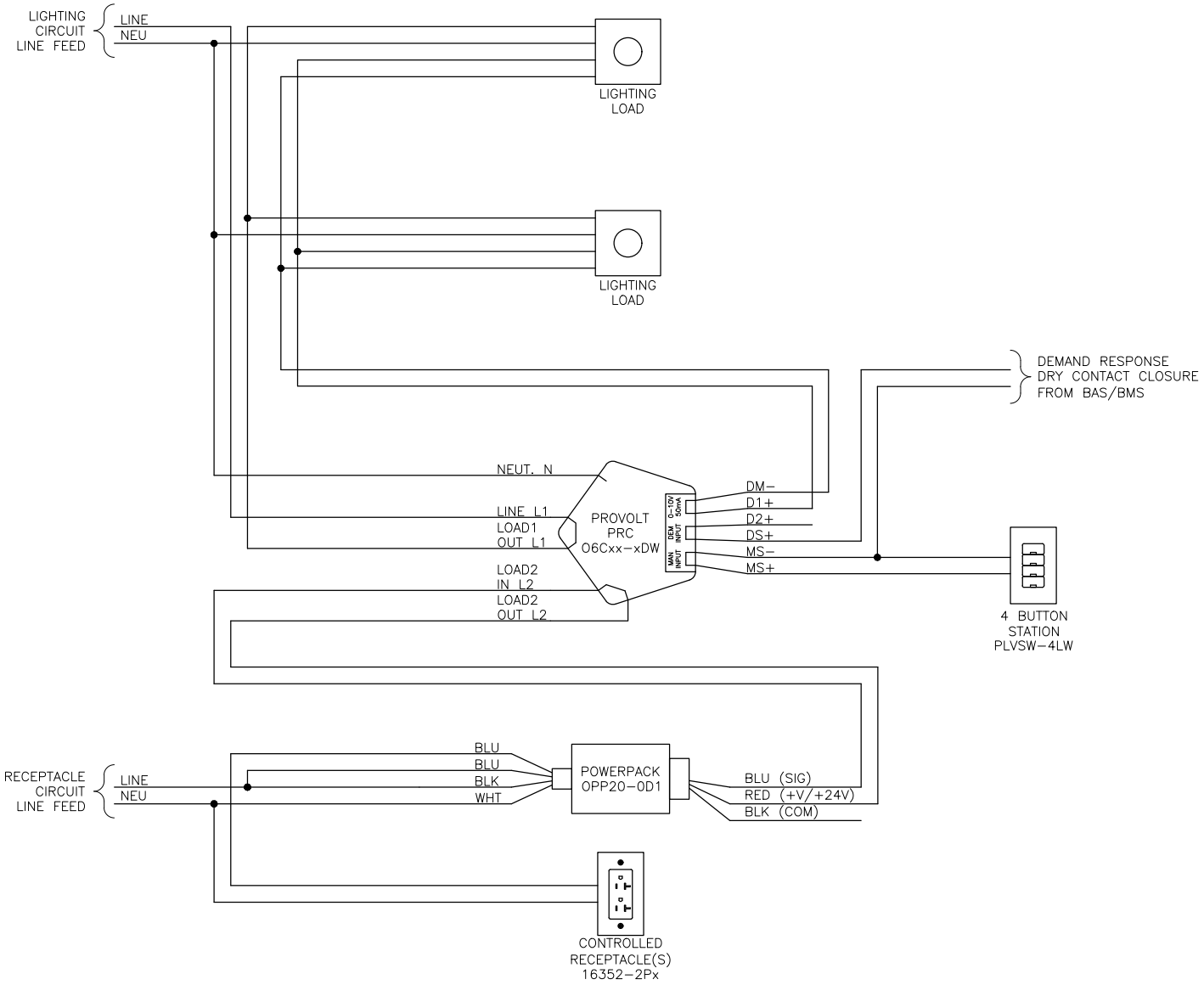
SMALL OFFICE—IRC SINGLE ZONE



SMALL OFFICE—IRC DUAL ZONE



SMALL OFFICE—PRC SINGLE ZONE



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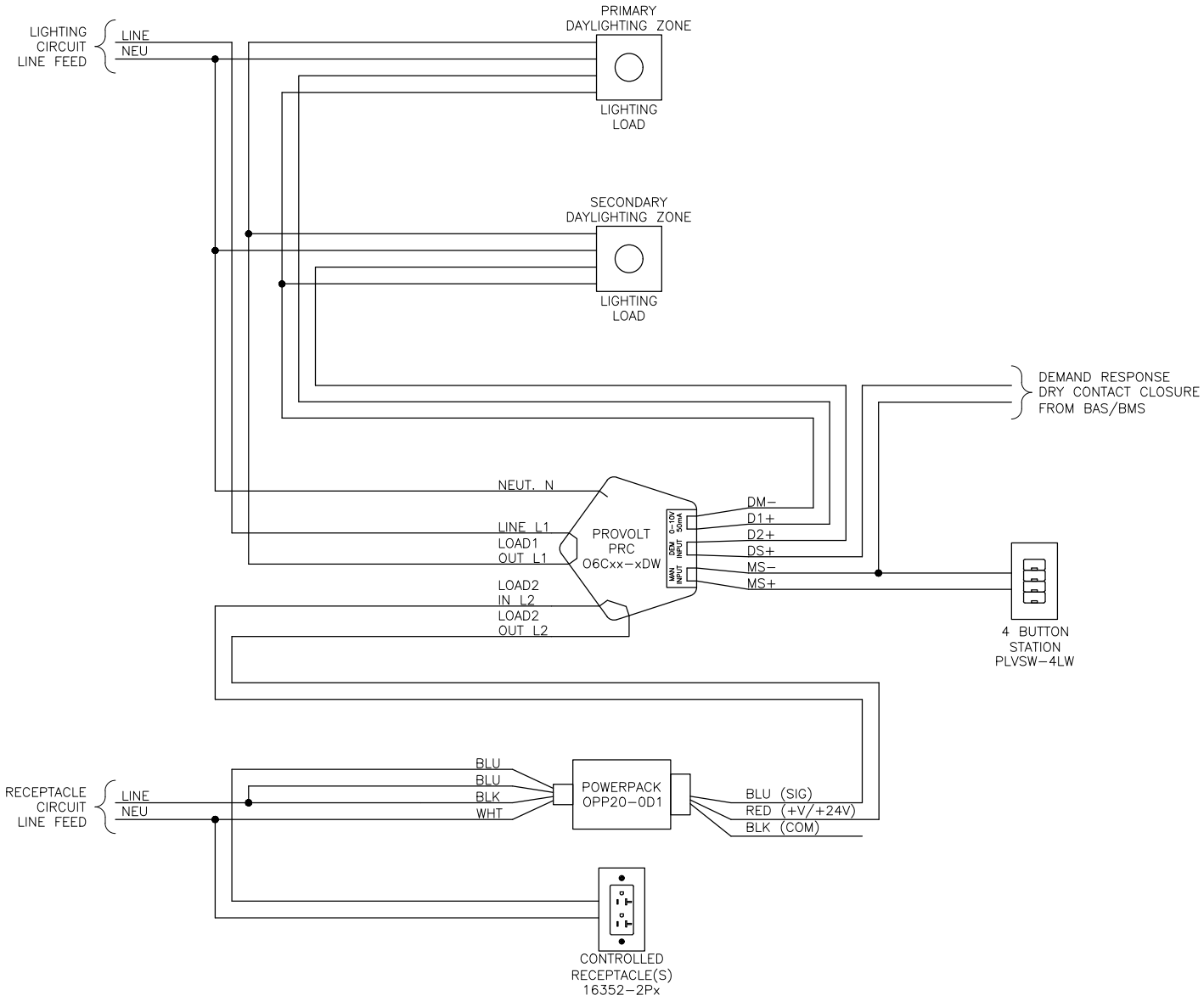
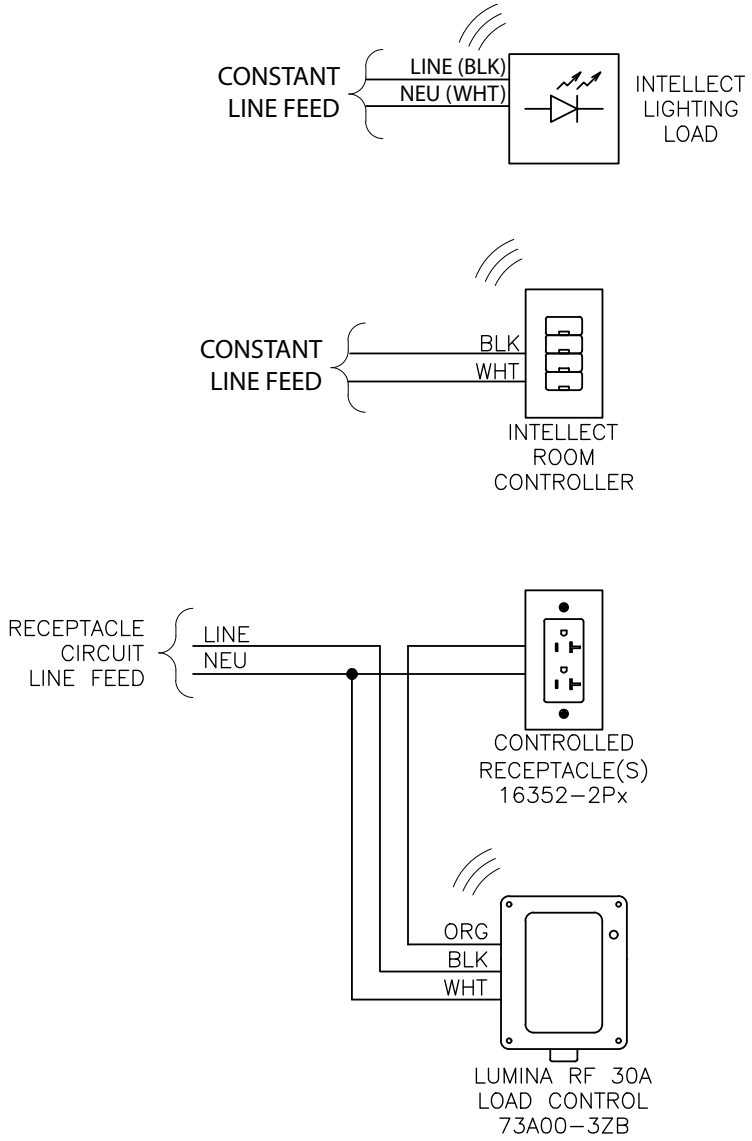


SMALL OFFICE—INTELLECT SINGLE ZONE



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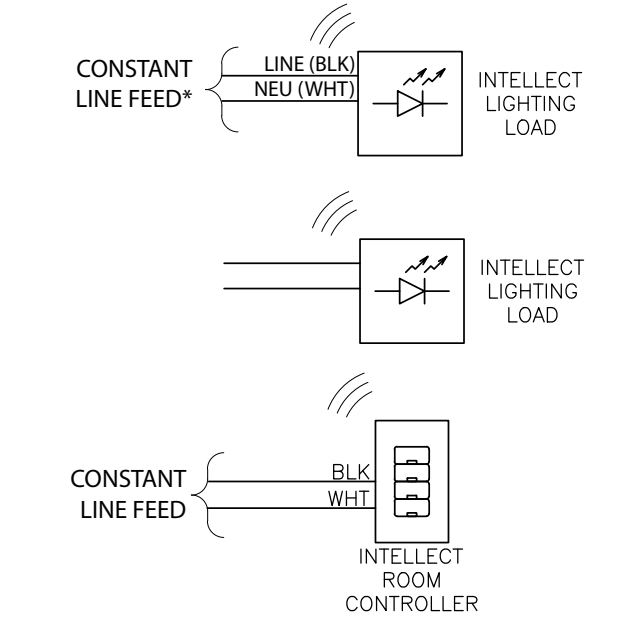
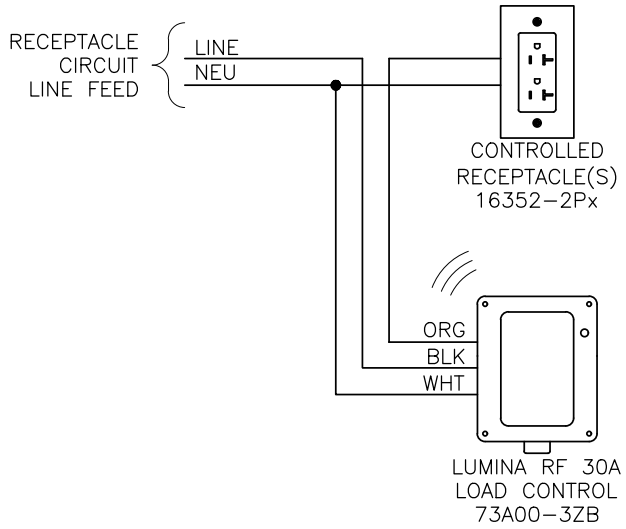
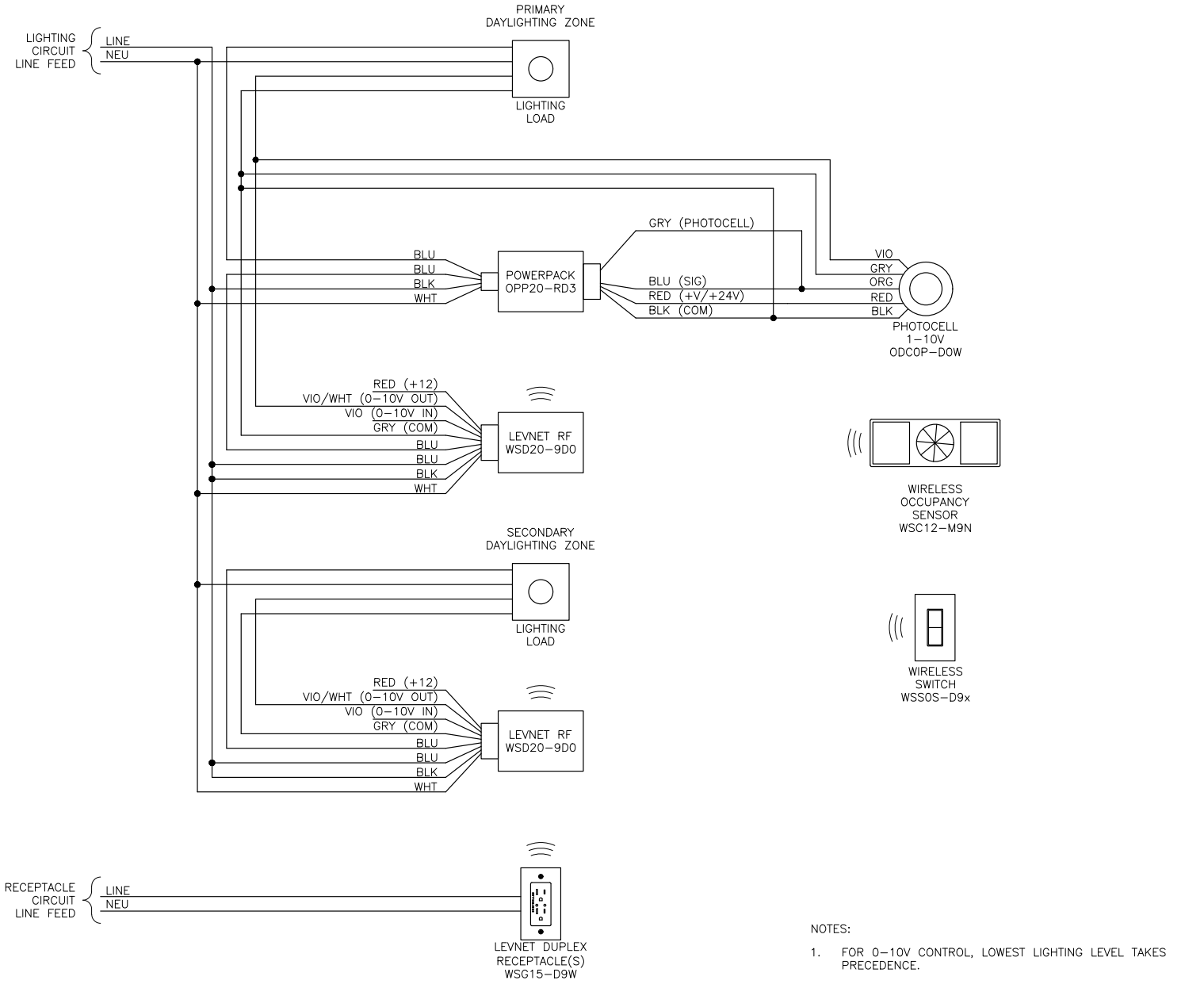




*TYPICAL AT ALL FIXTURES

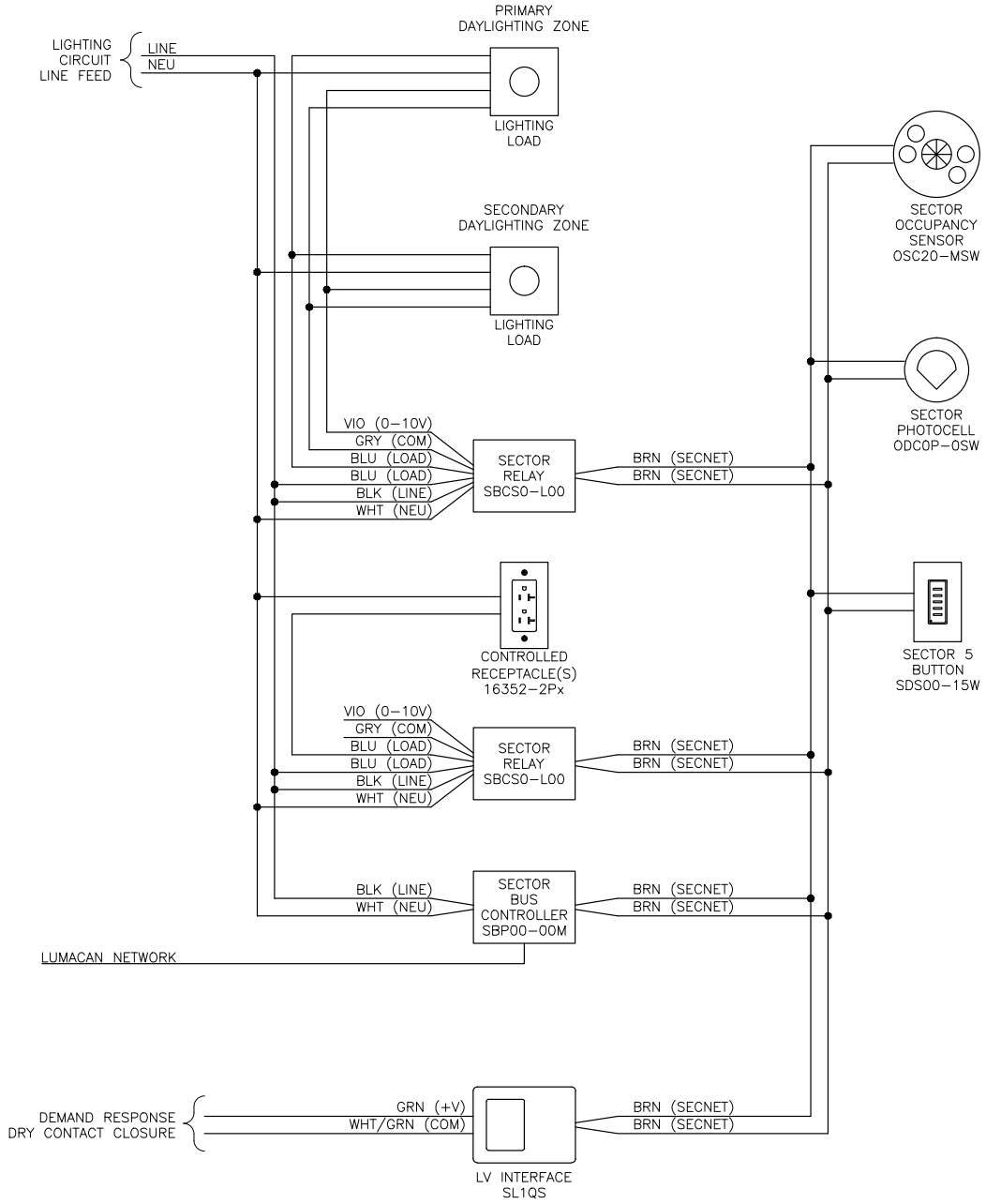
SMALL OFFICE—LEVNET RF 902 MHZ



NOTES:

1. FOR 0–10V CONTROL, LOWEST LIGHTING LEVEL TAKES PRECEDENCE.
2. WIRELESS CONTROL SIGNAL FROM SWITCHES, SENSORS OR CONTROLLERS UP TO 150FT.
3. INDIVIDUALLY CAP UNUSED LEADS.

SMALL OFFICE—SECTOR



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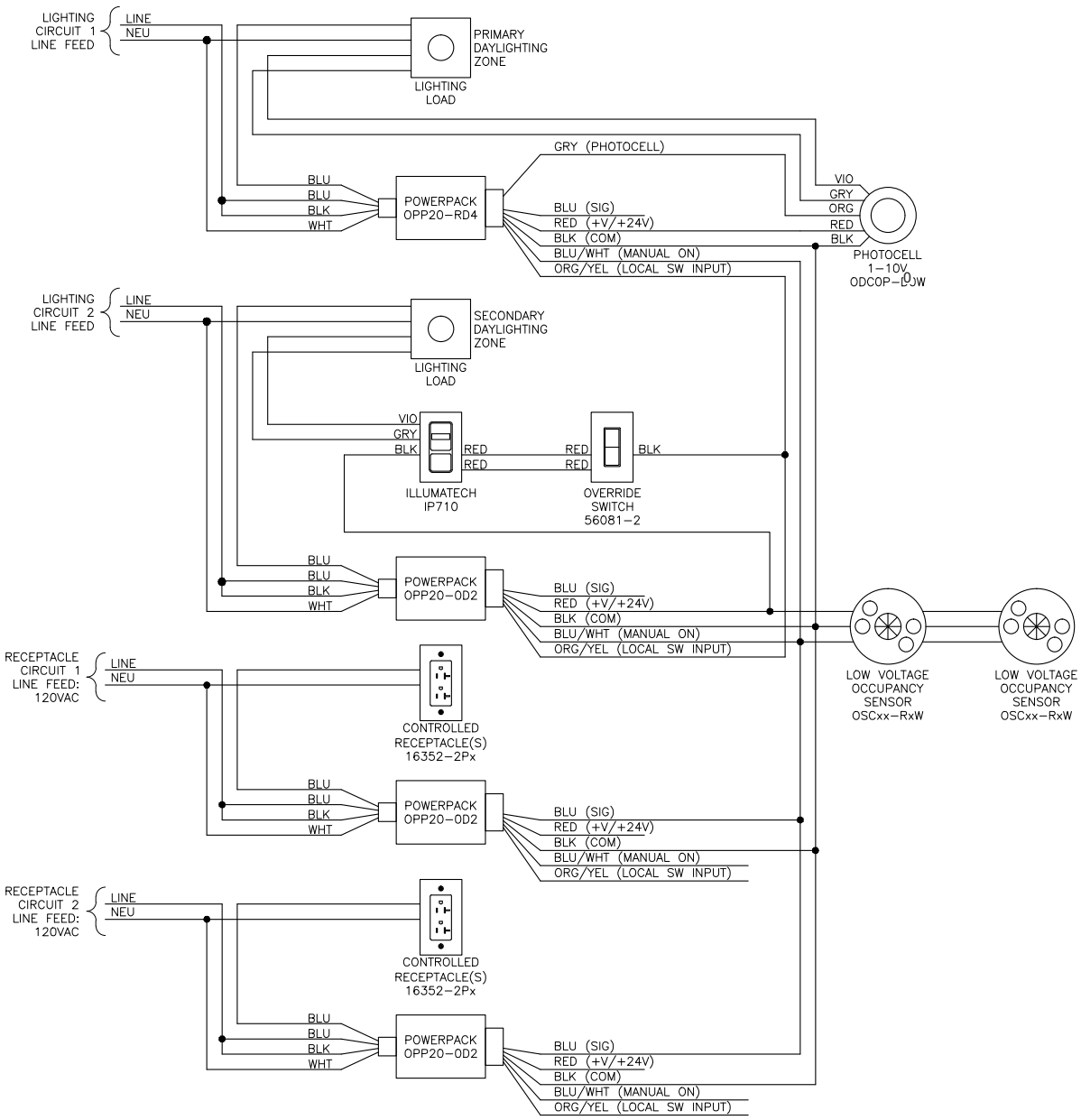

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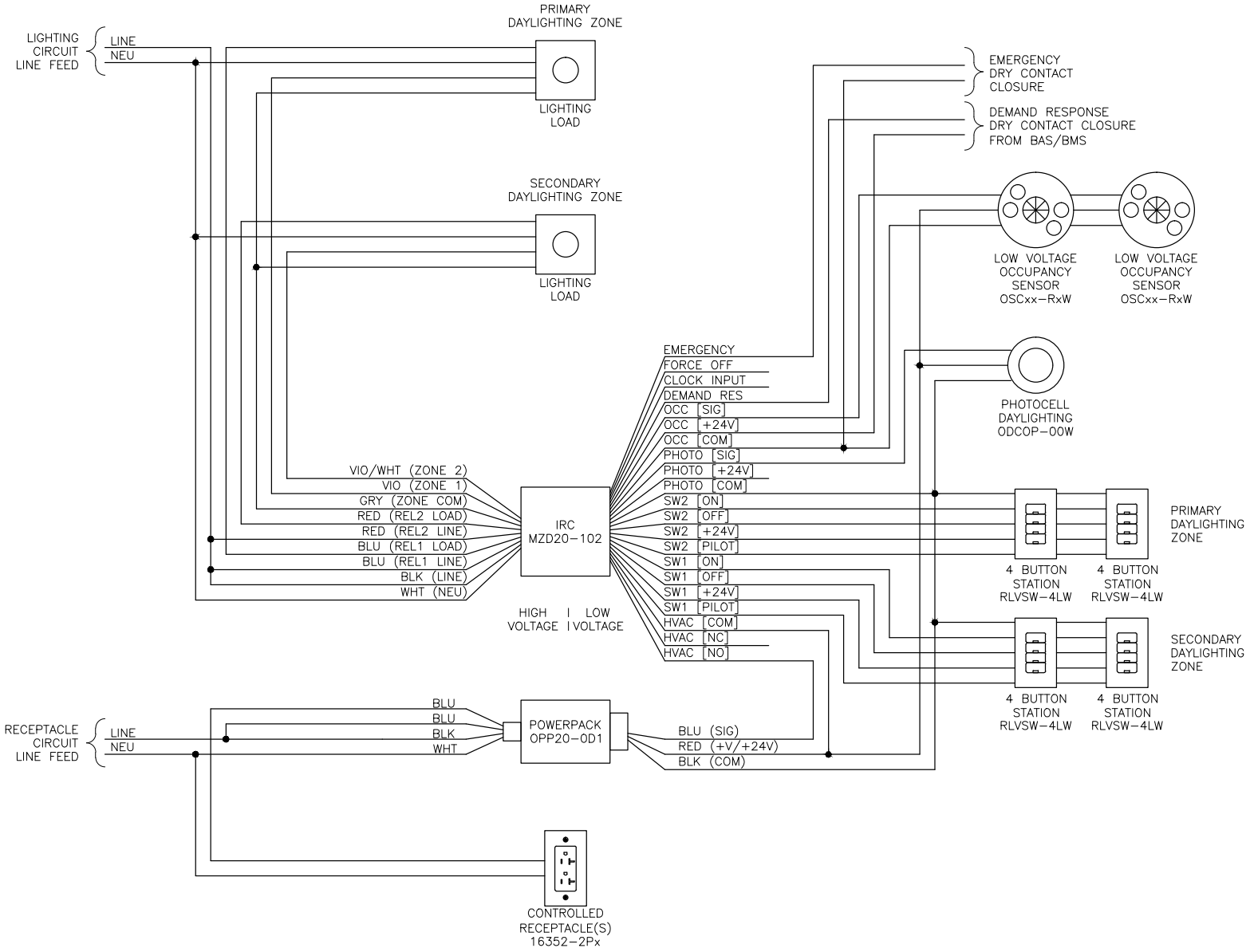

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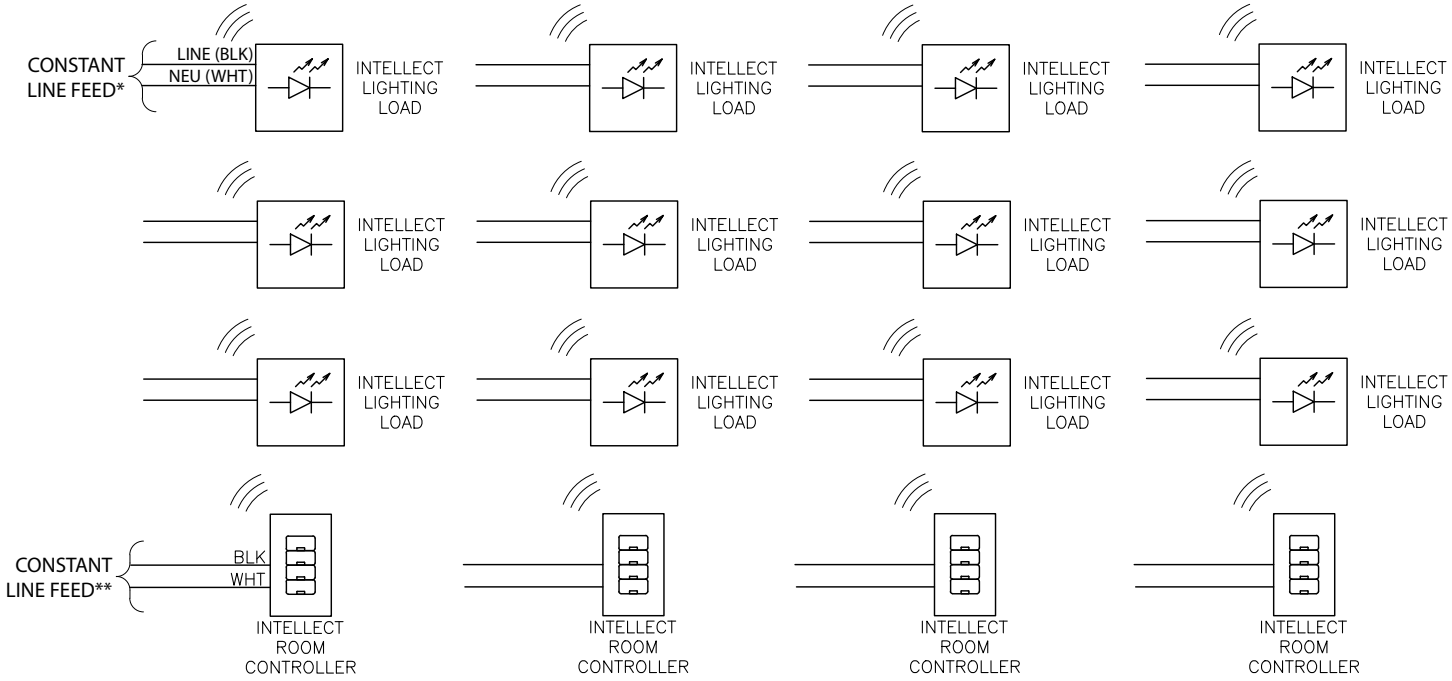
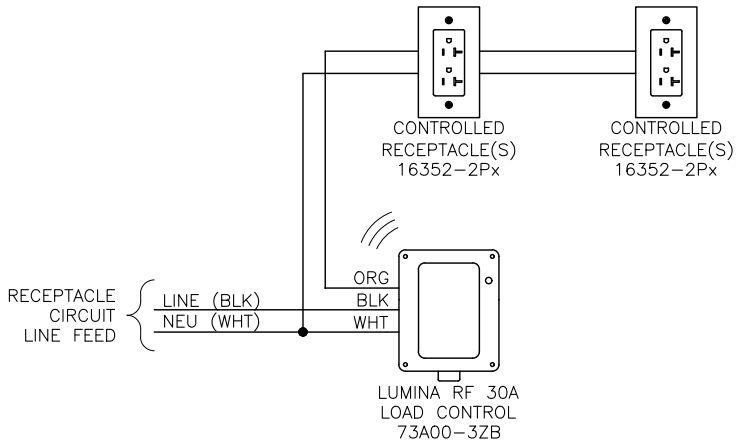
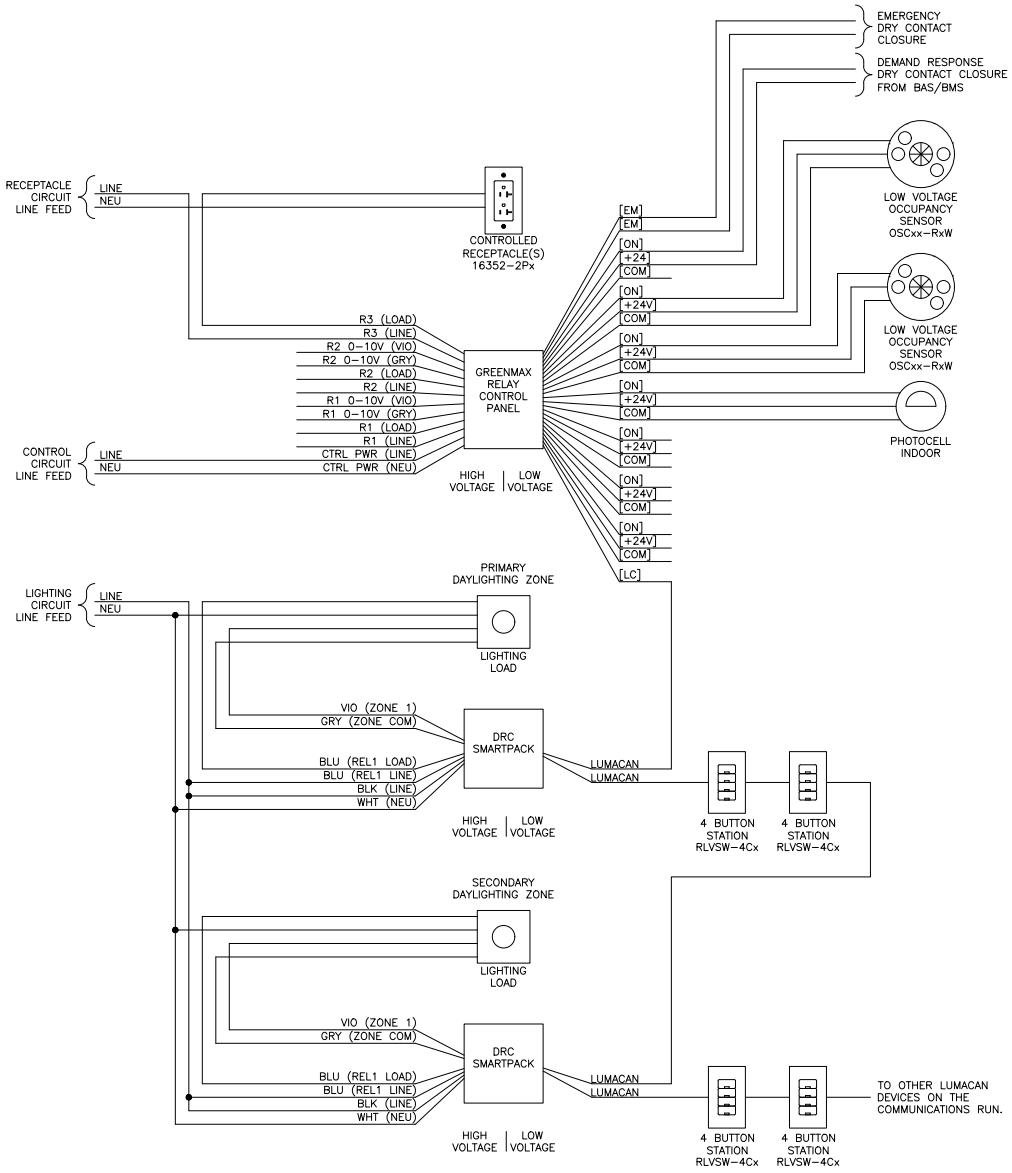




*TYPICAL AT ALL FIXTURES
**TYPICAL AT ALL CONTROLLERS

OPEN OFFICE—GREENMAX AND DRC



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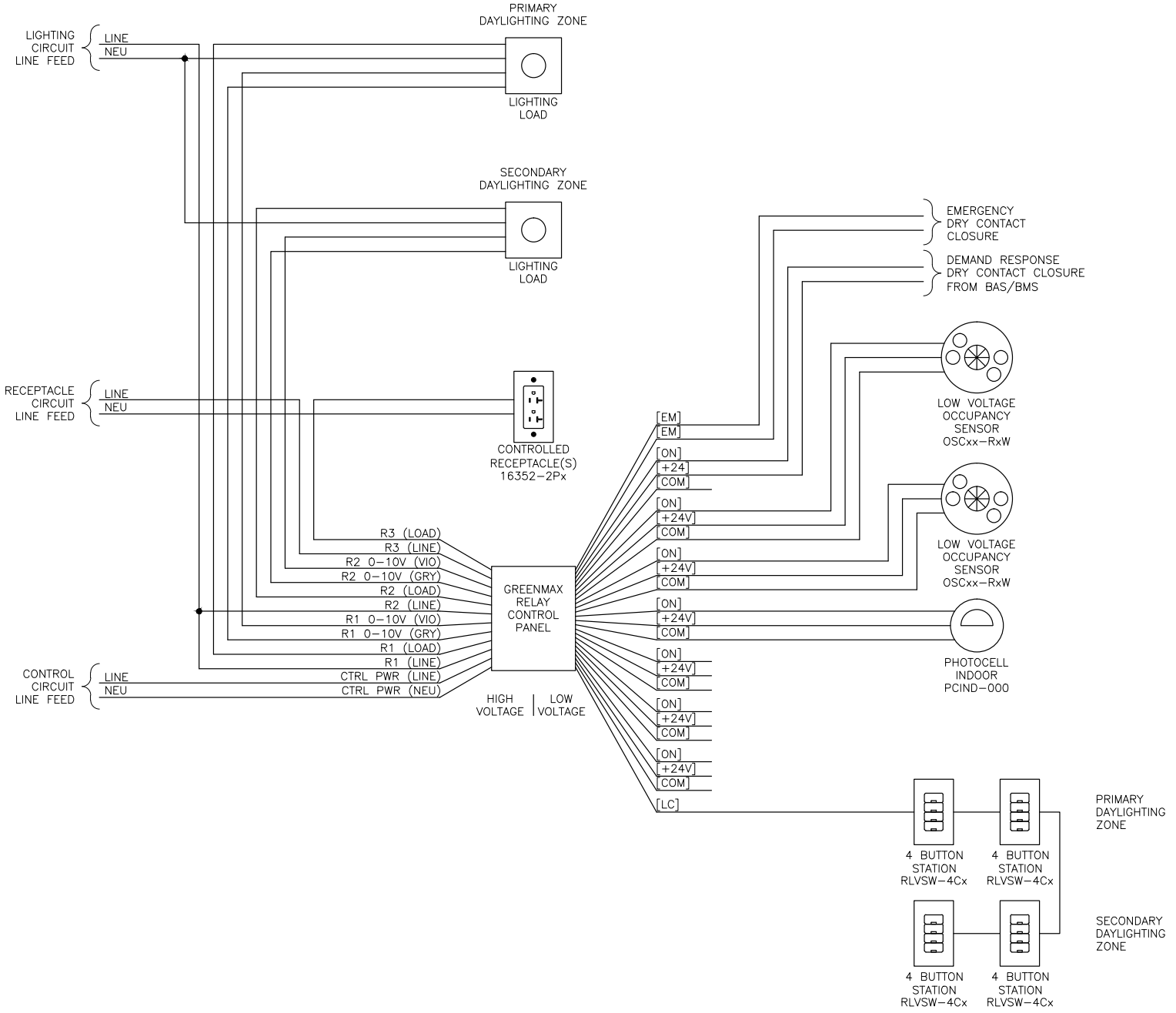

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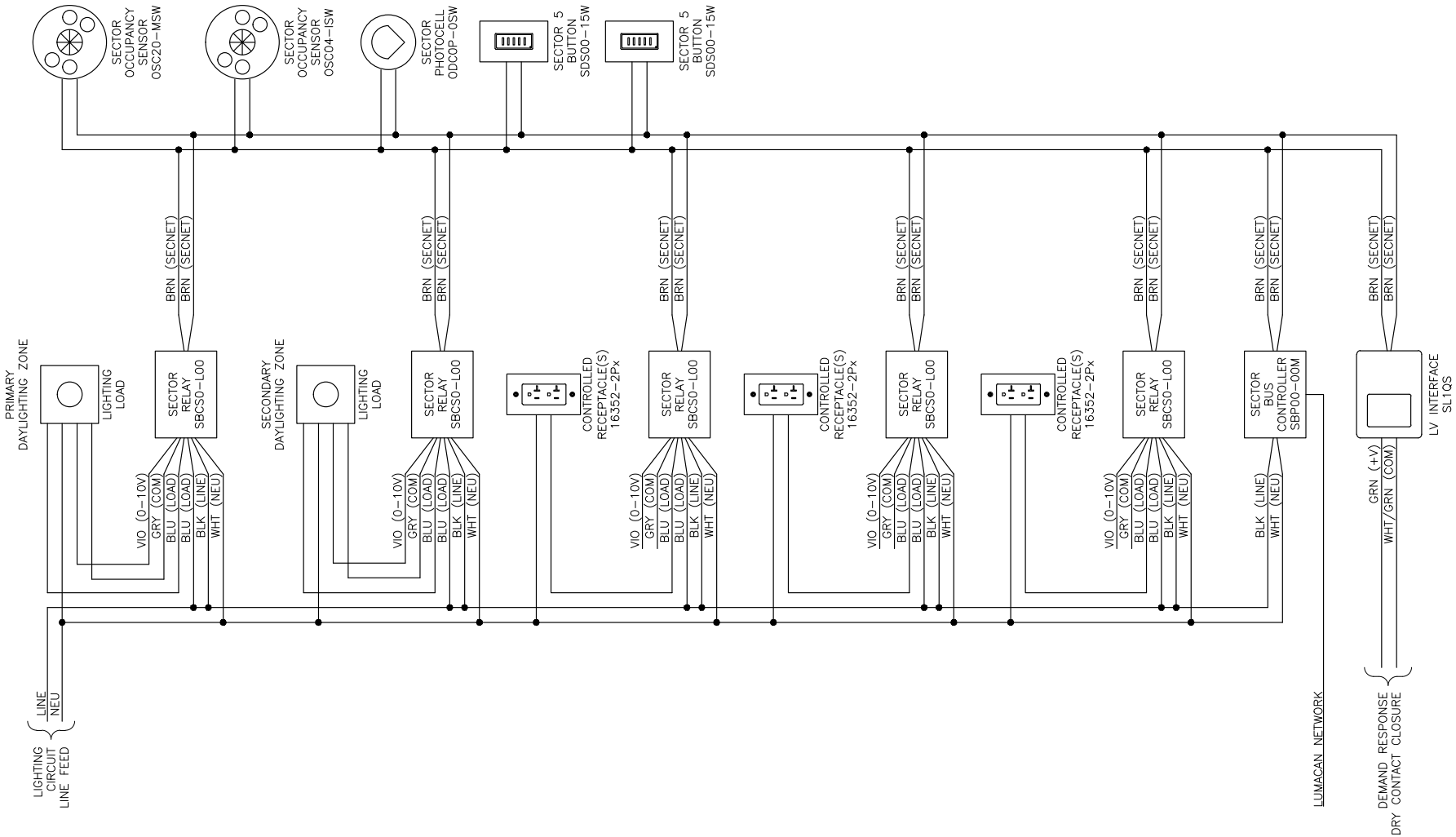
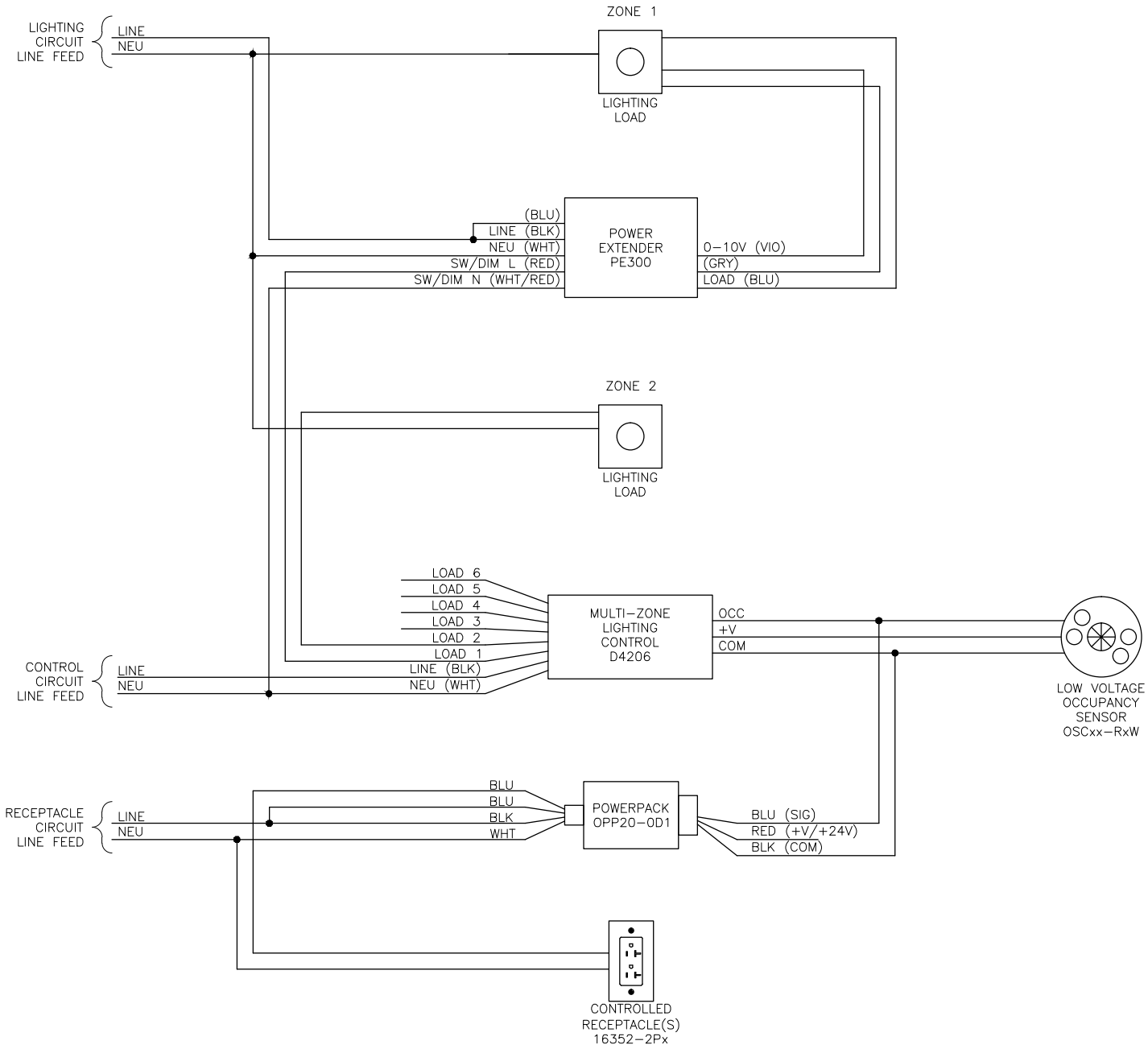


CONFERENCE ROOM—D4000



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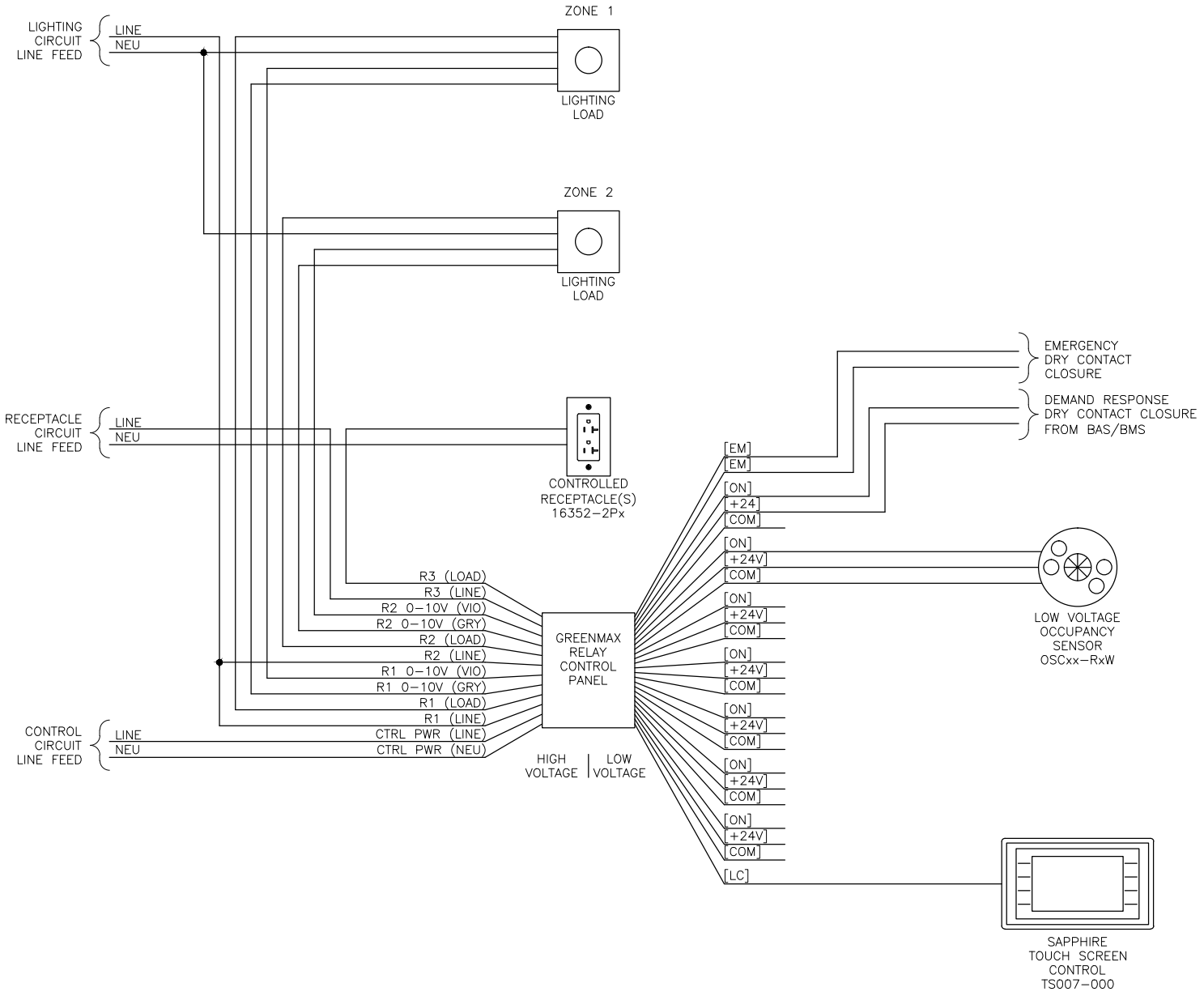

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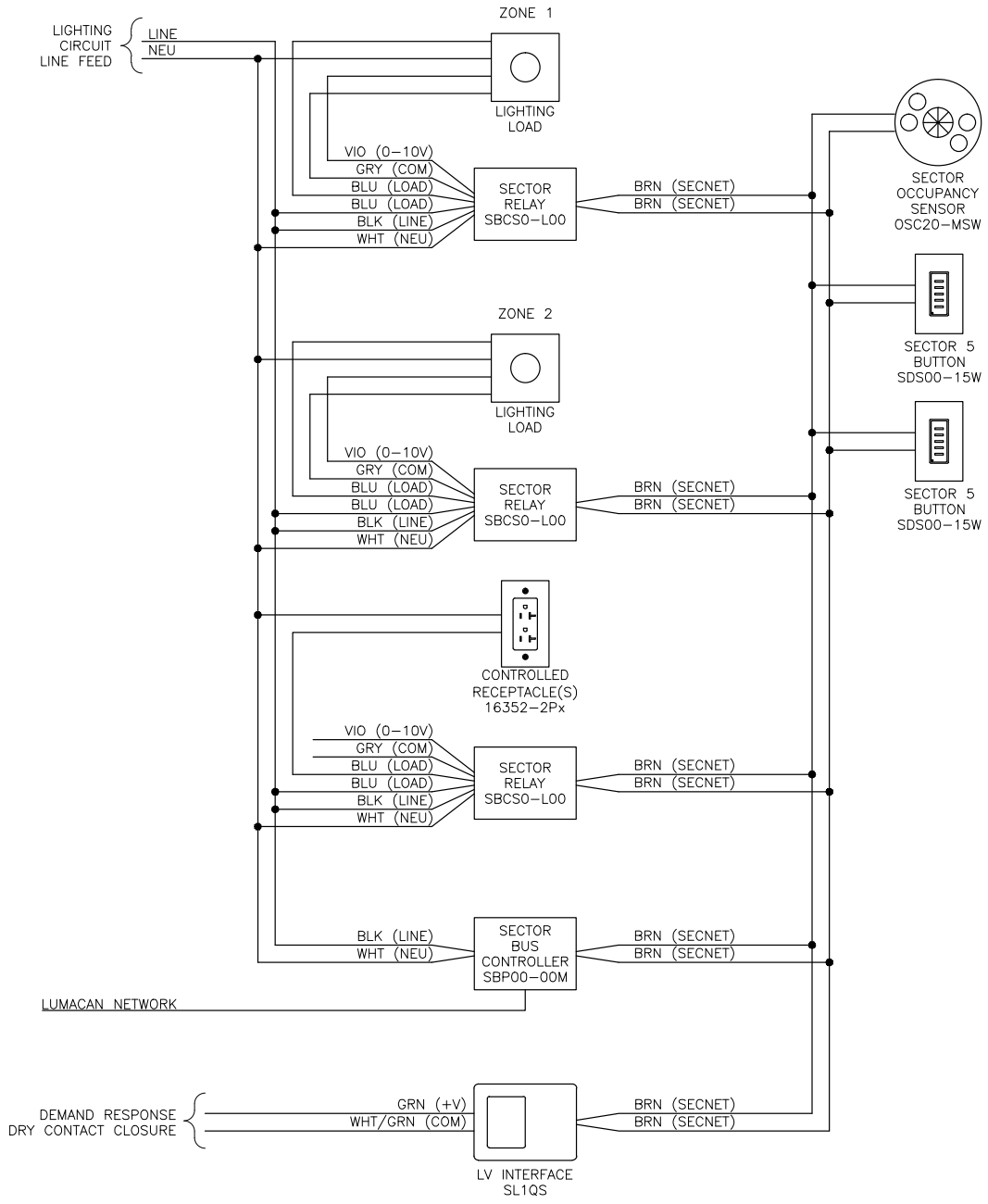

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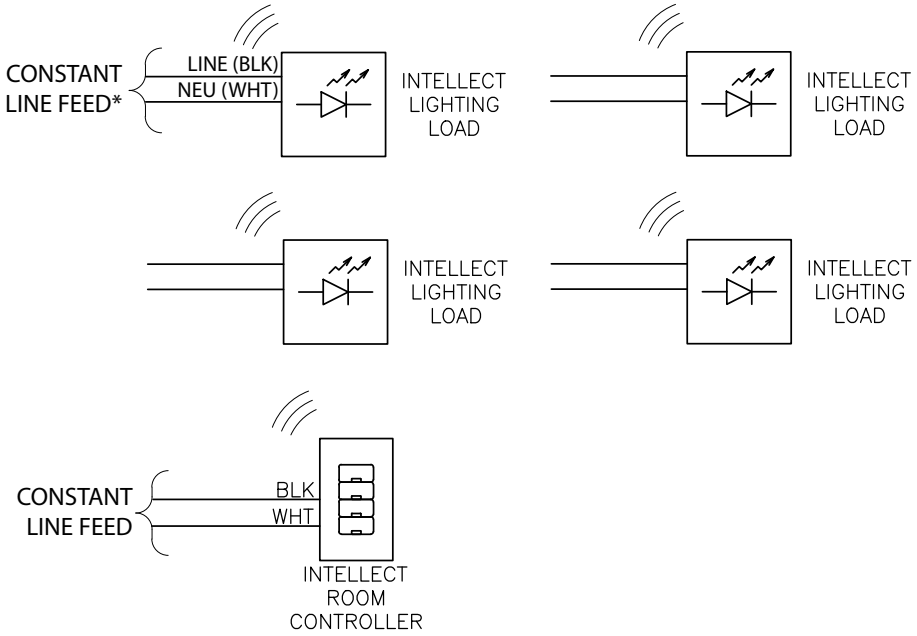

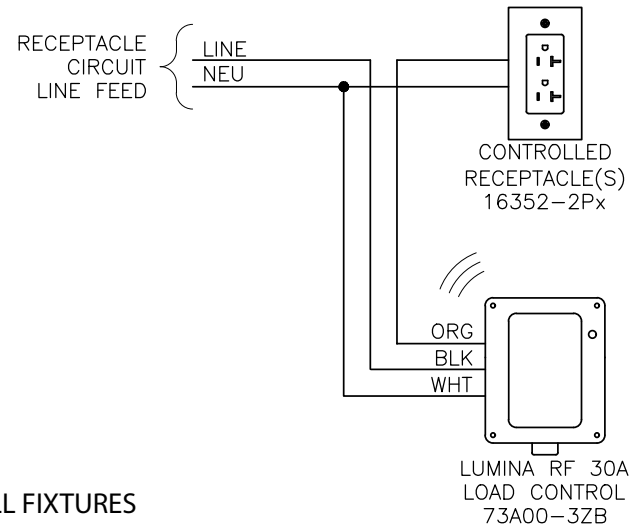

*TYPICAL AT ALL FIXTURES

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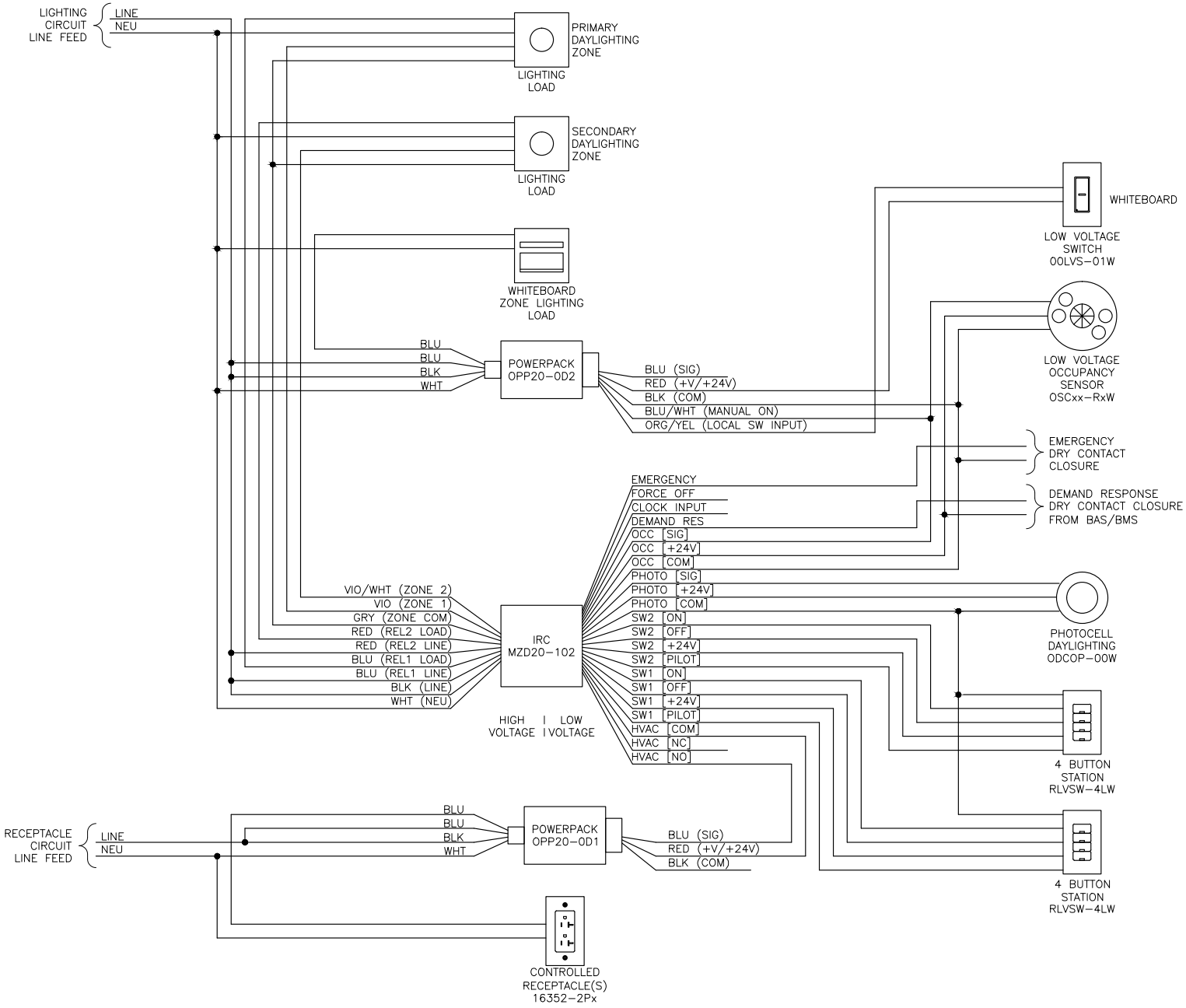

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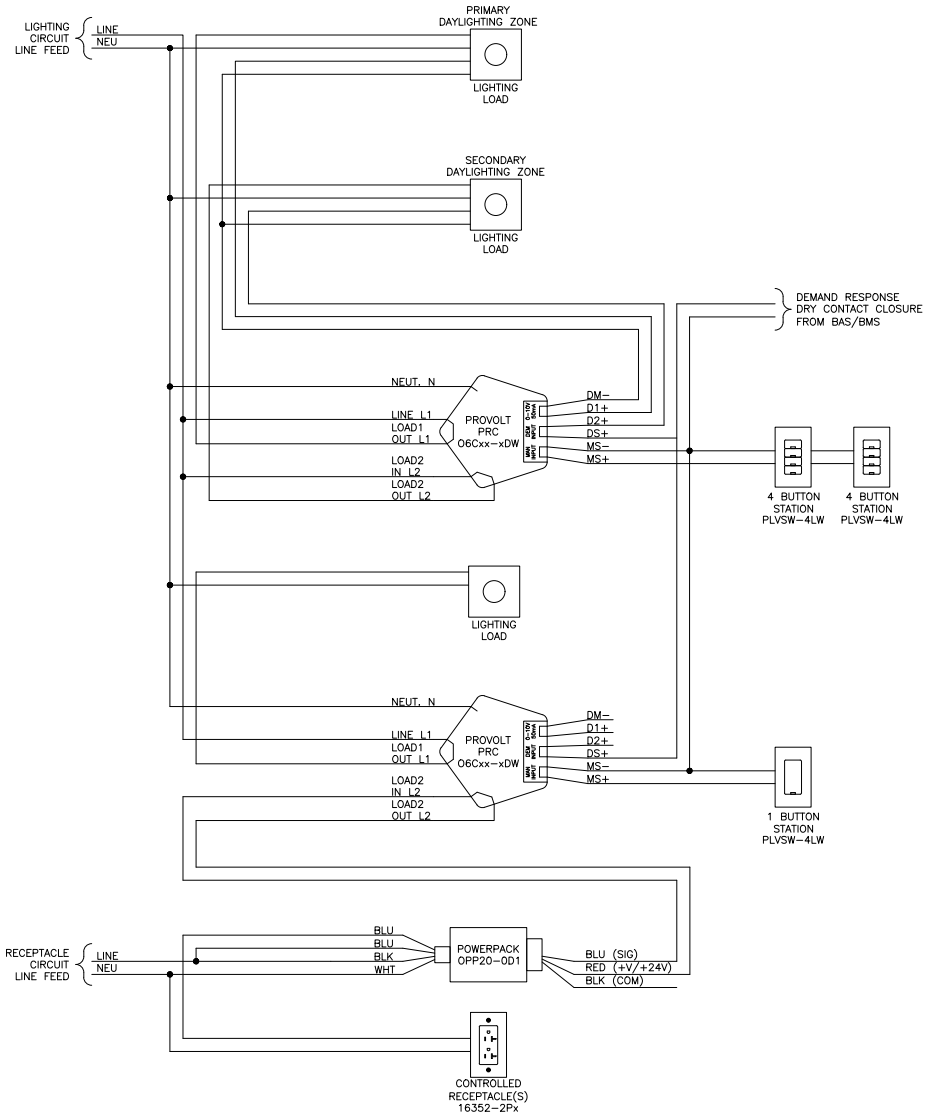

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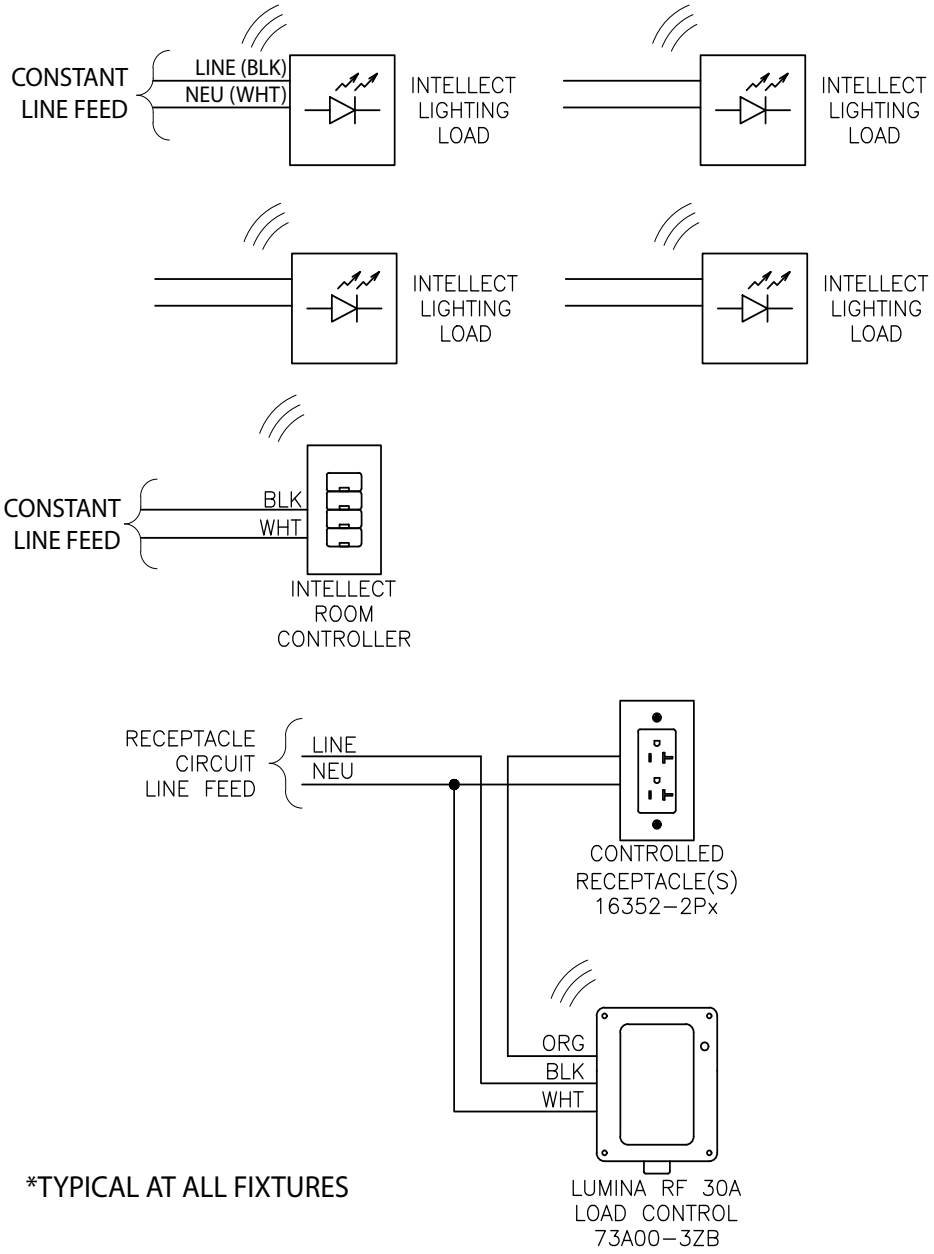

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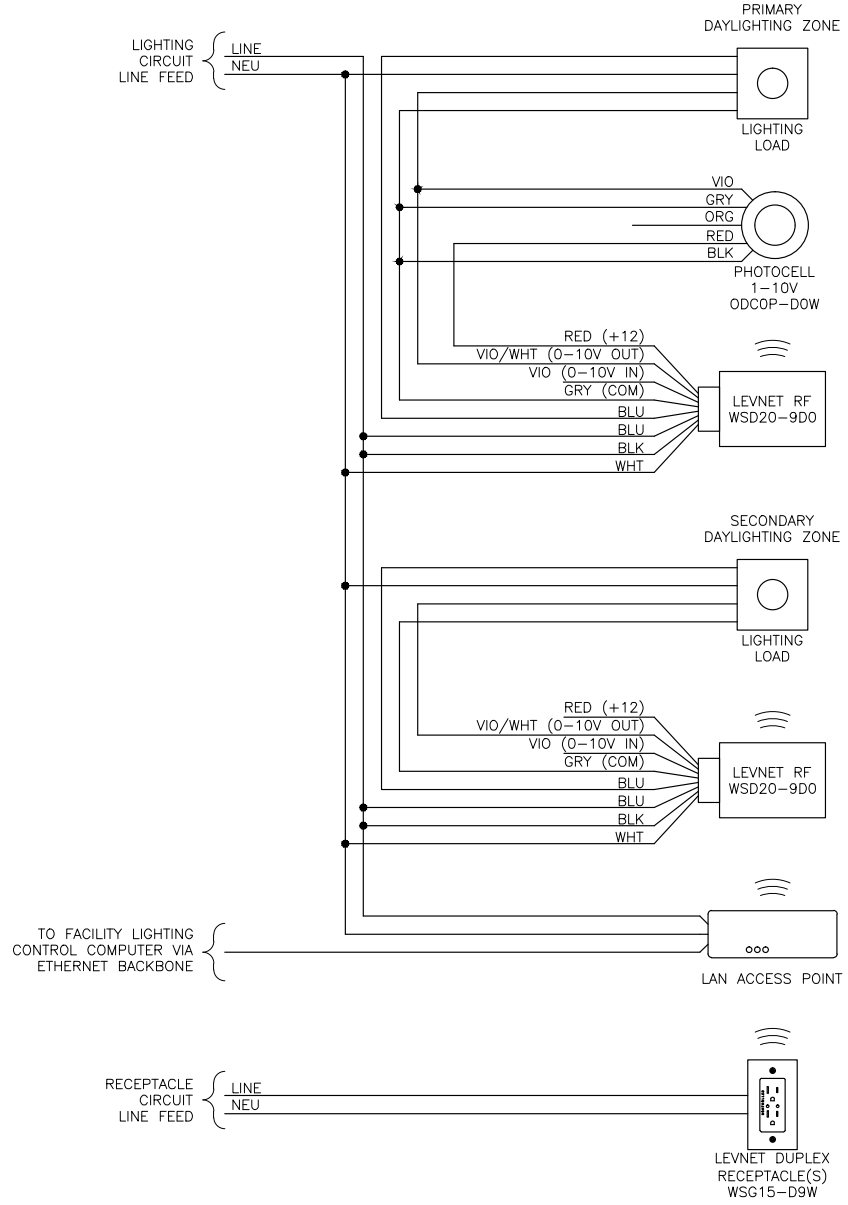
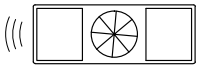
CLASSROOM—LEVNET RF 902 MHZ





WIRELESS
OCCUPANCY
SENSOR
WSC12–M9N

WIRELESS
SWITCH
WSS0S–D9x

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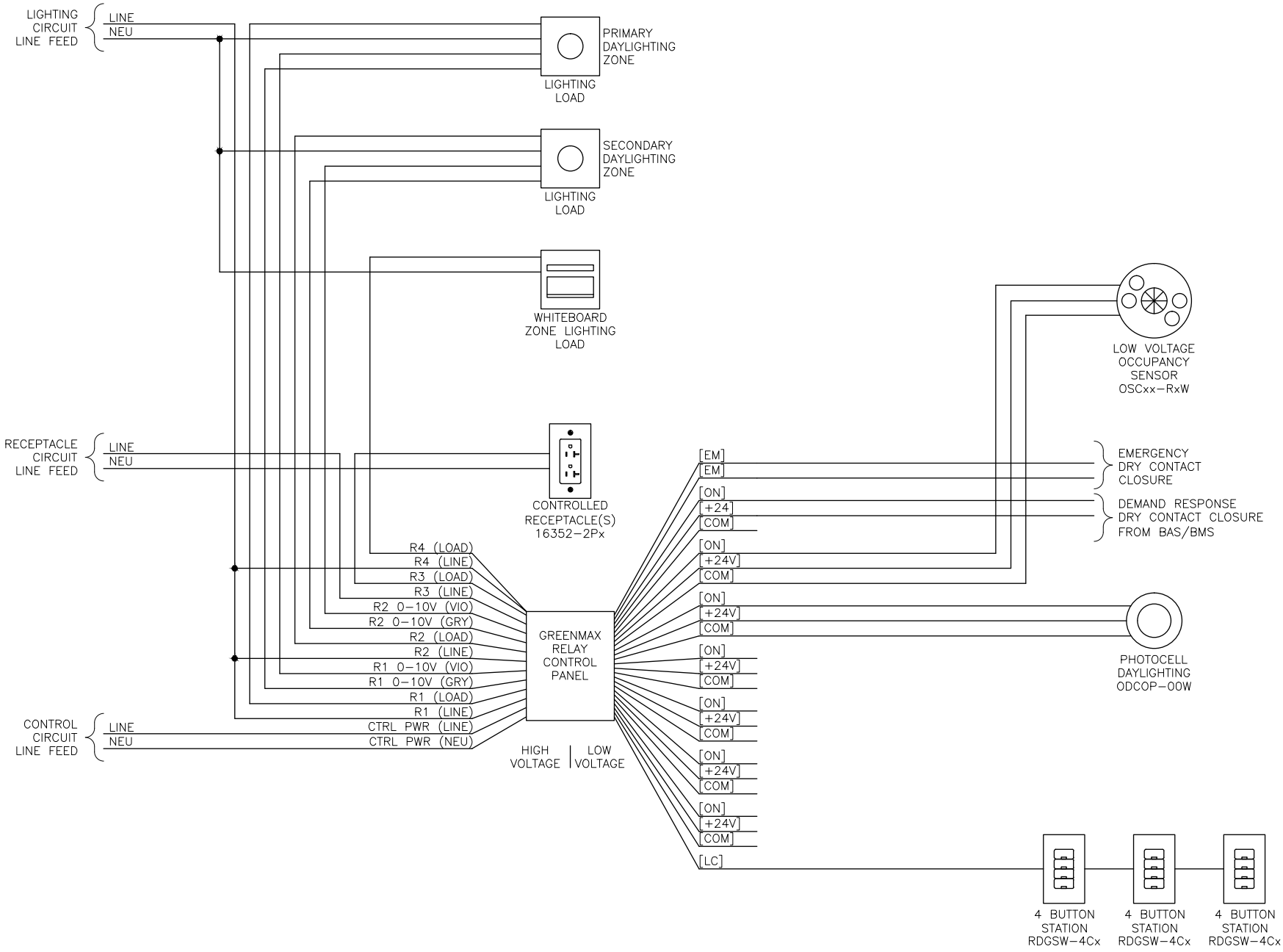
CLASSROOM—GREENMAX



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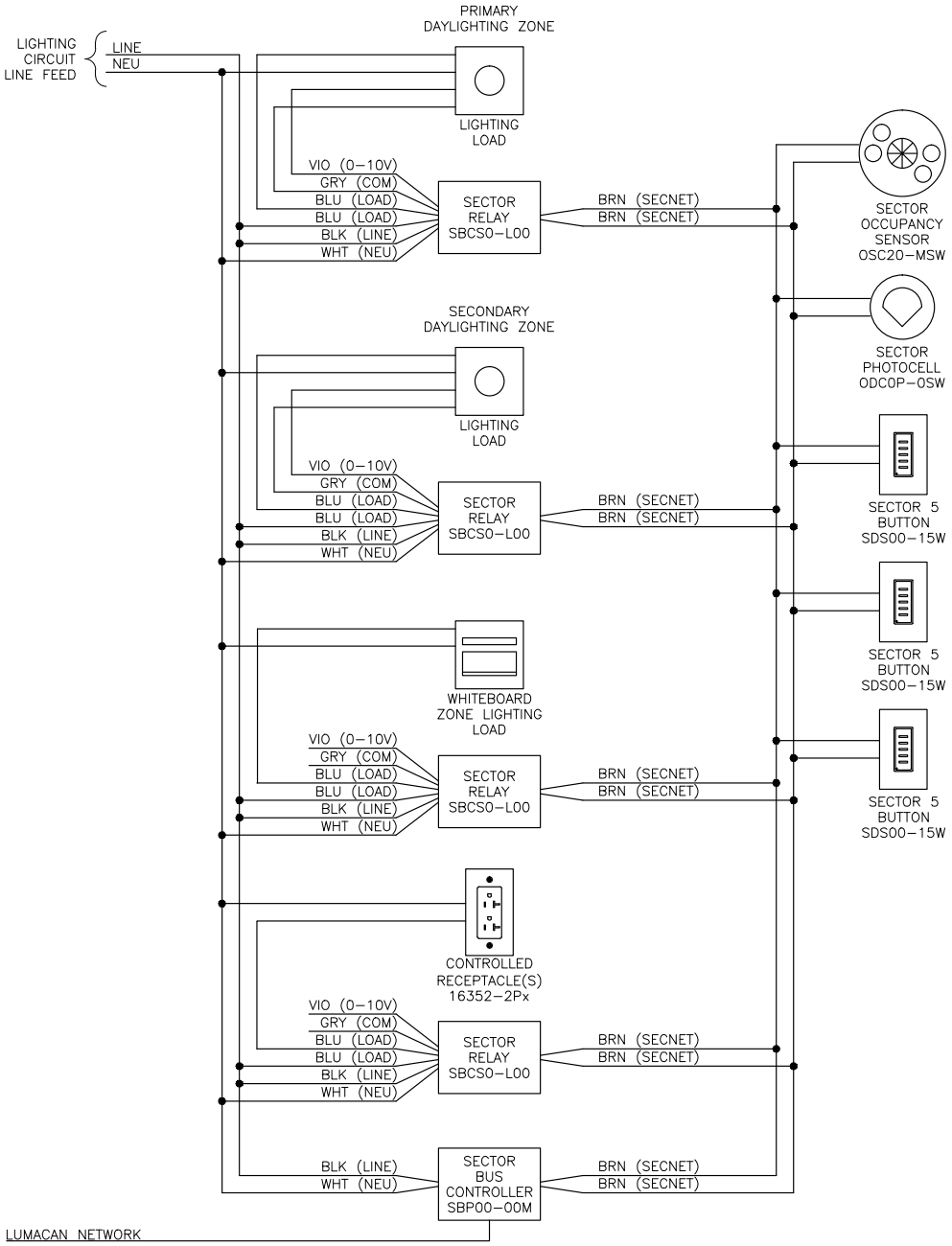
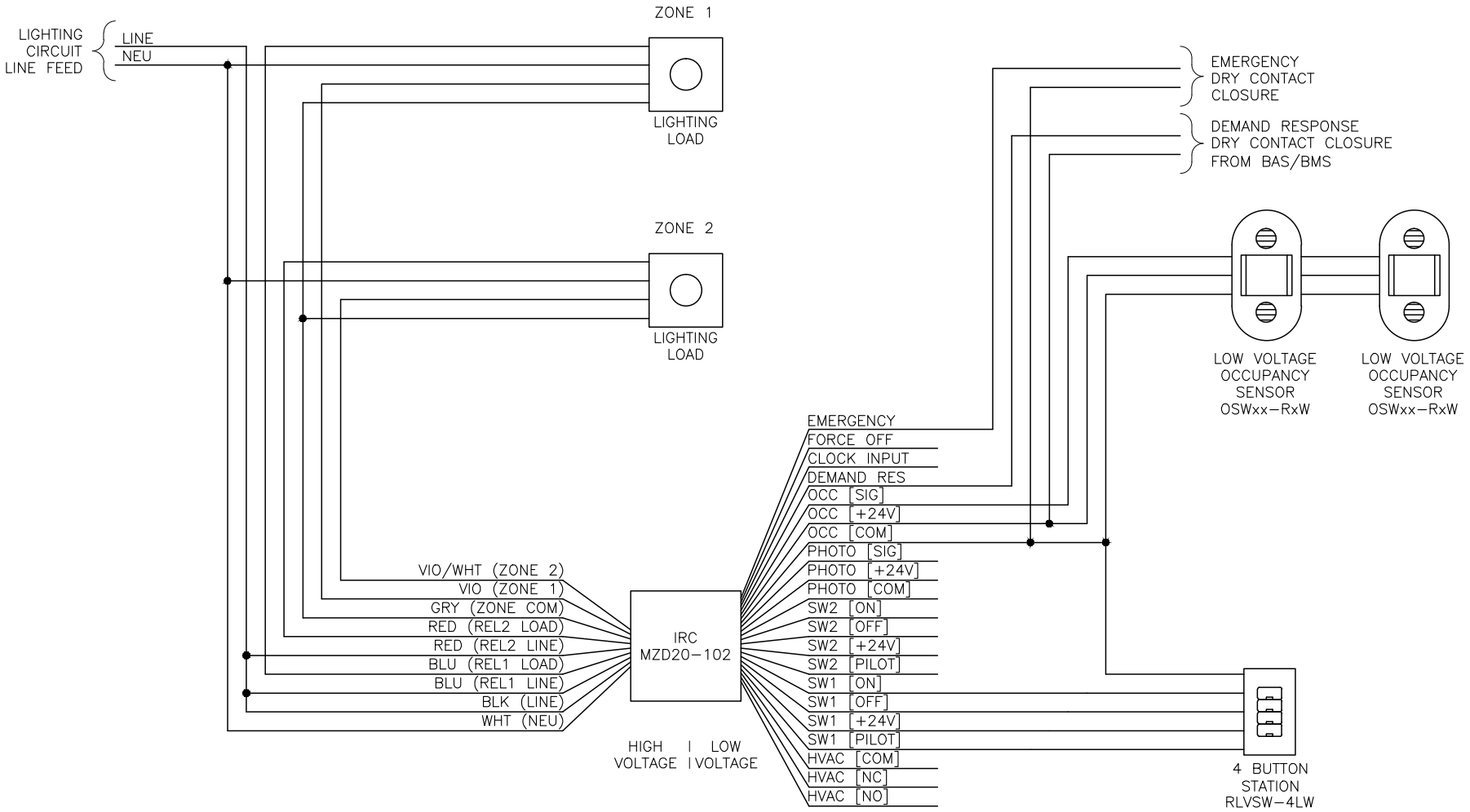
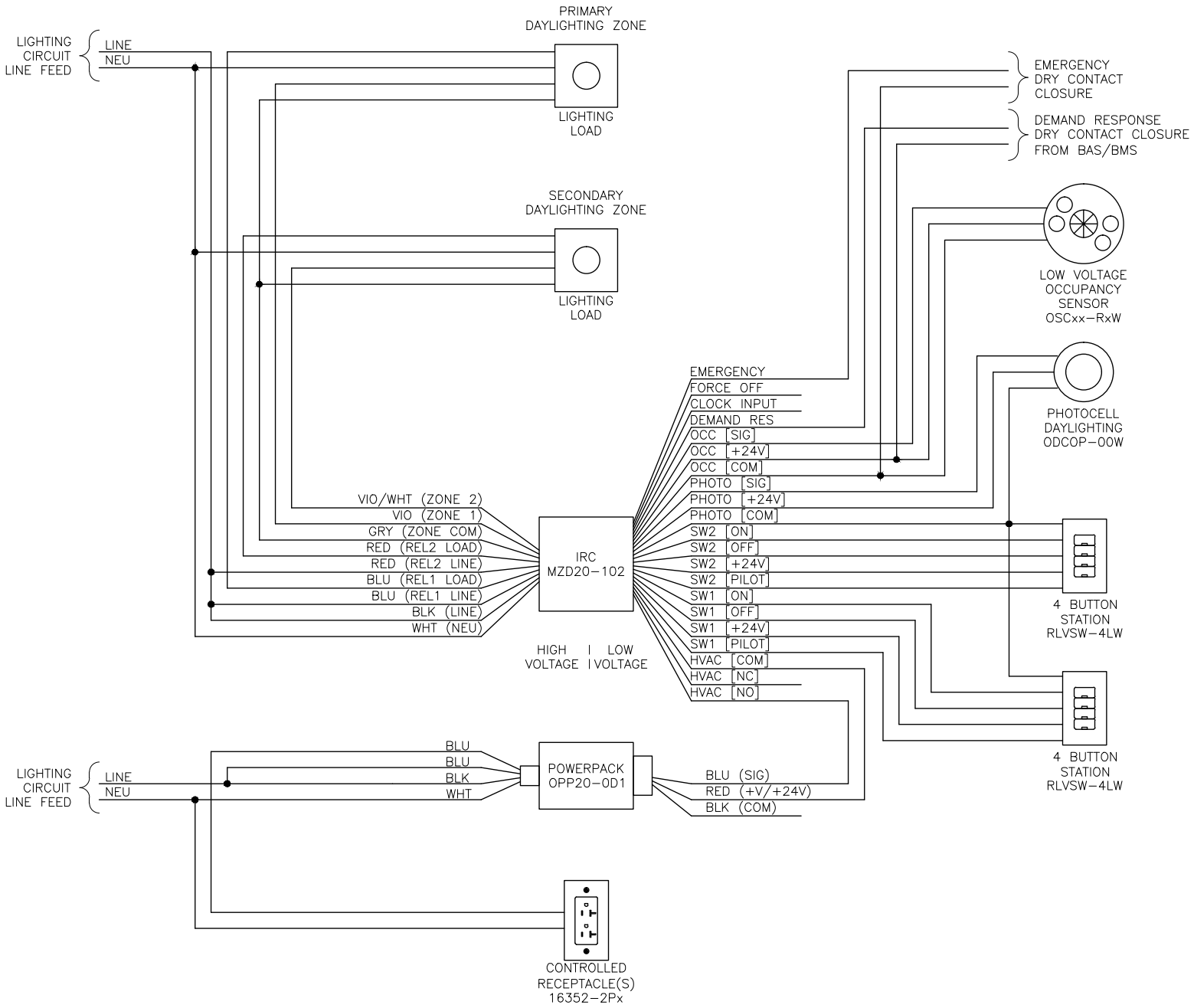


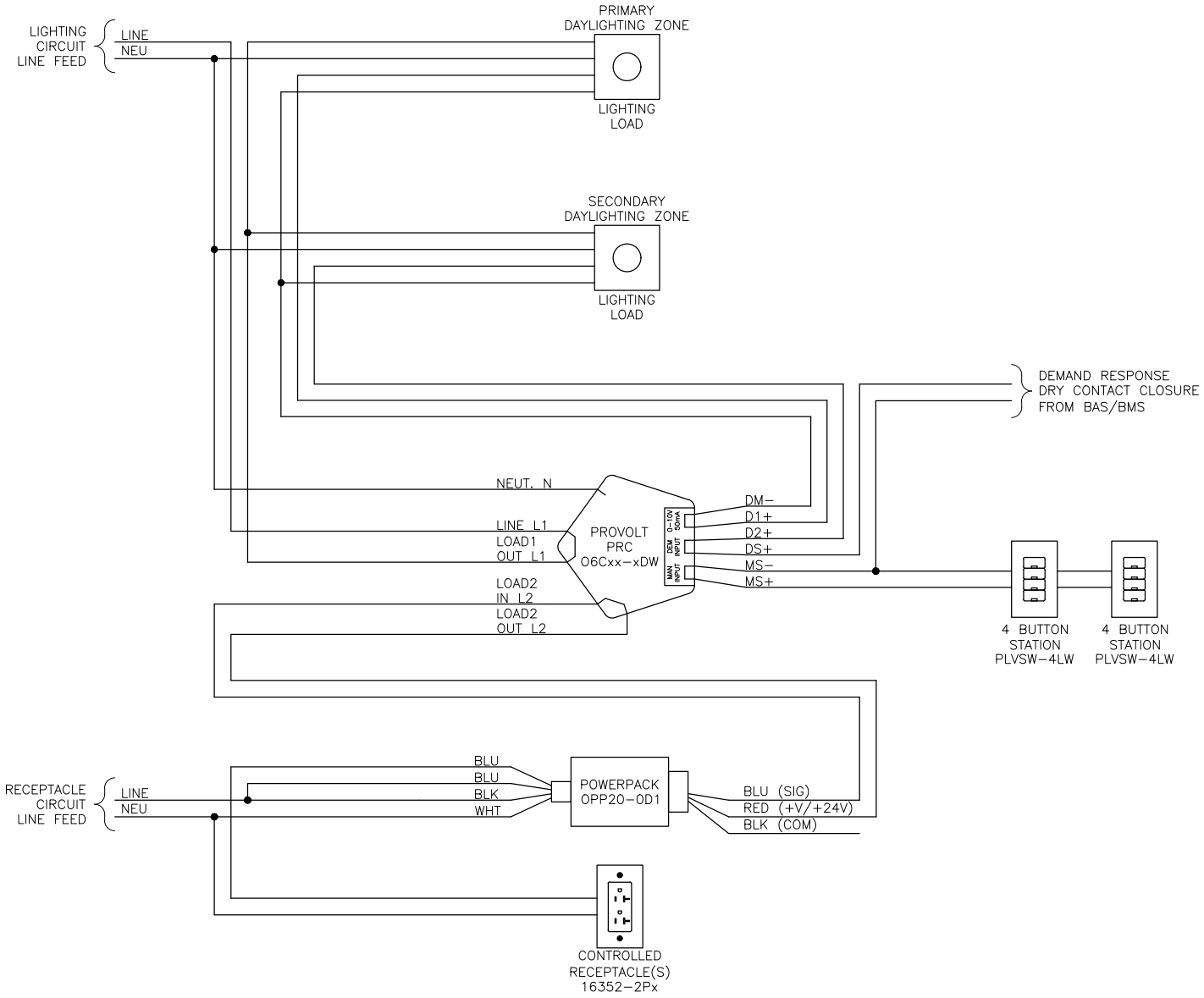
STAIRWELL—IRC



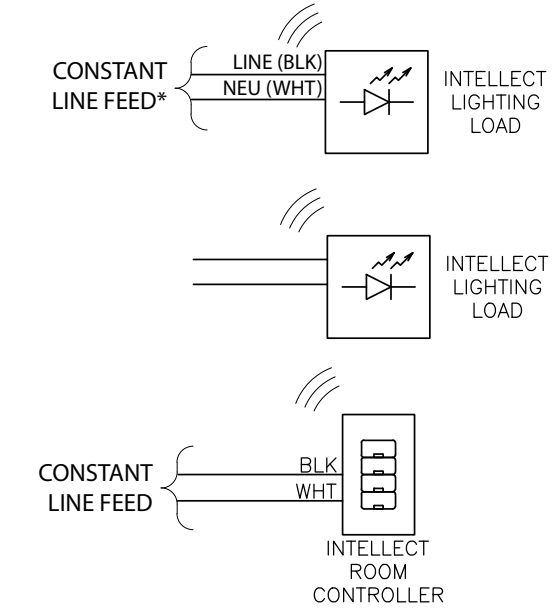
COMMON AREA—IRC



COMMON AREA—PRC

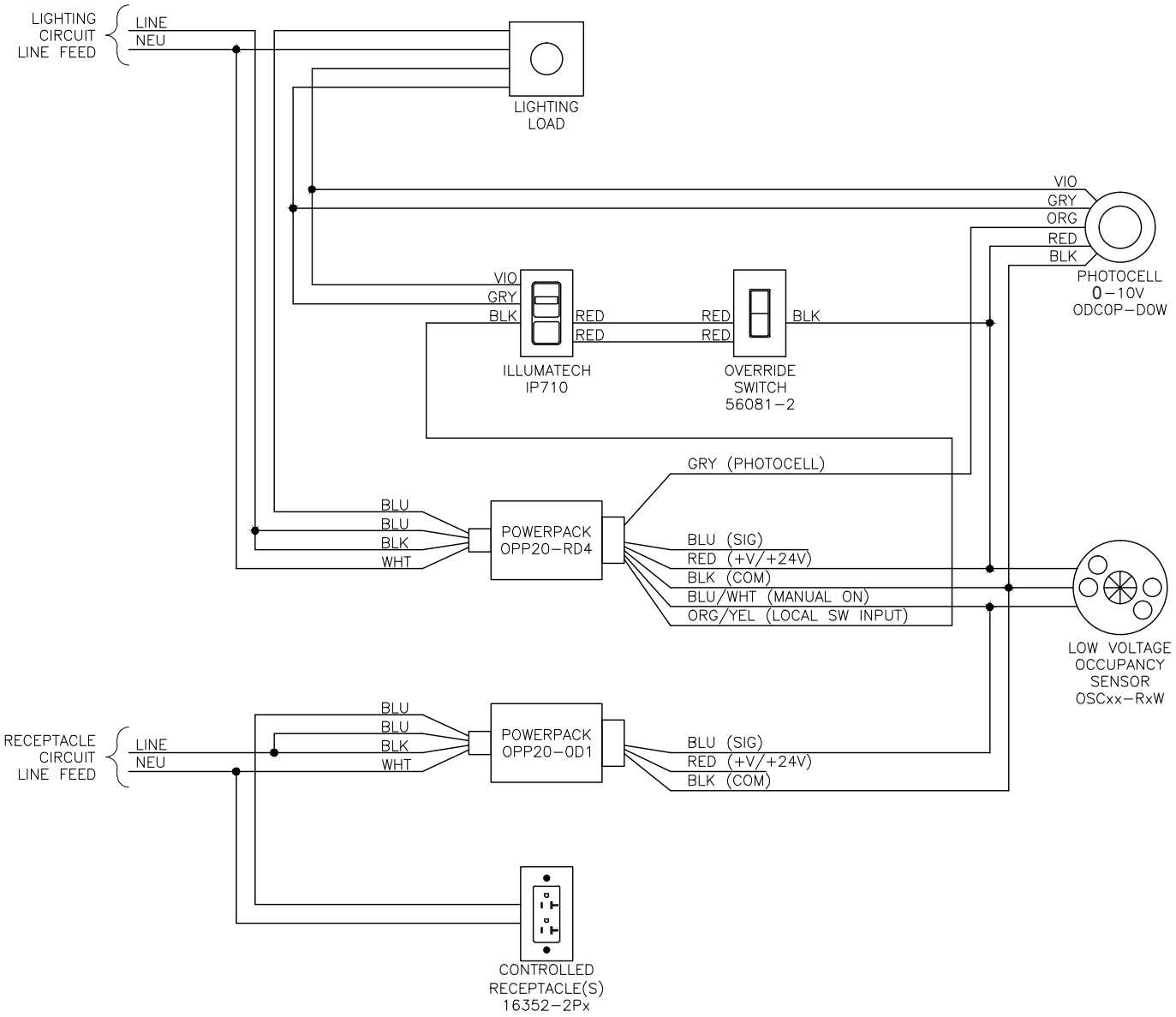


COMMON AREA—INTELLECT

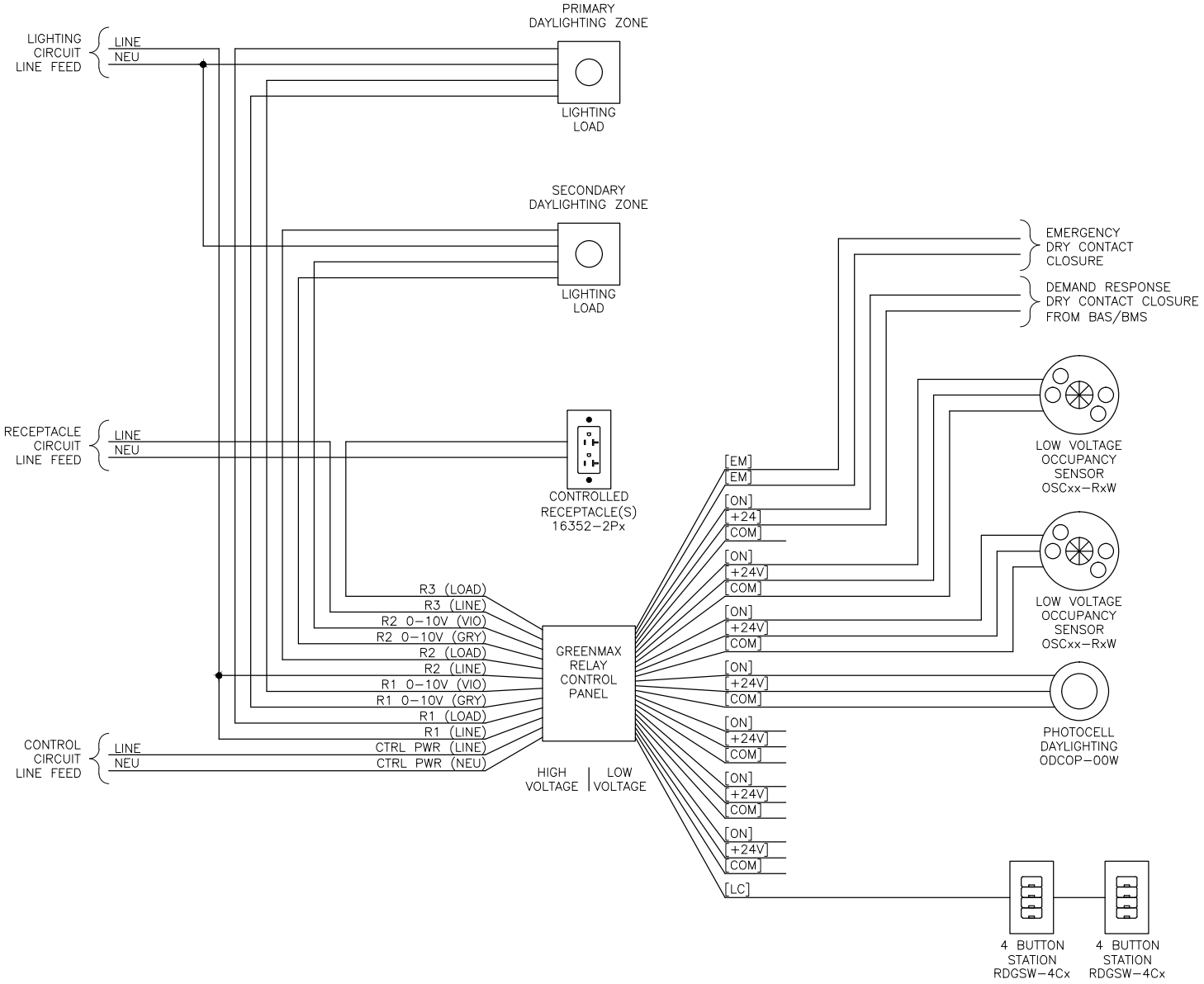


*TYPICAL AT ALL FIXTURES

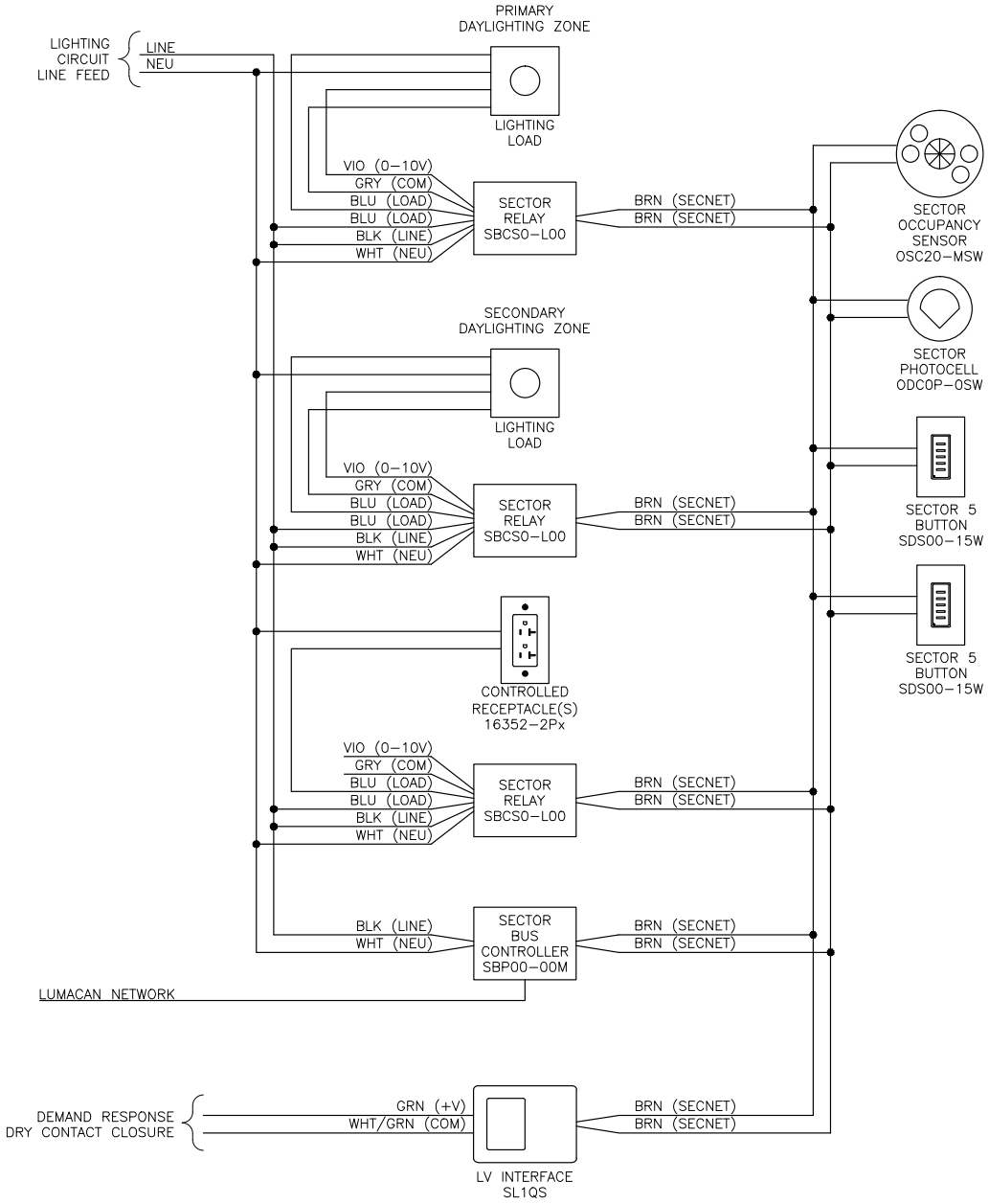
COMMON AREA—0-10V PHOTOCELL



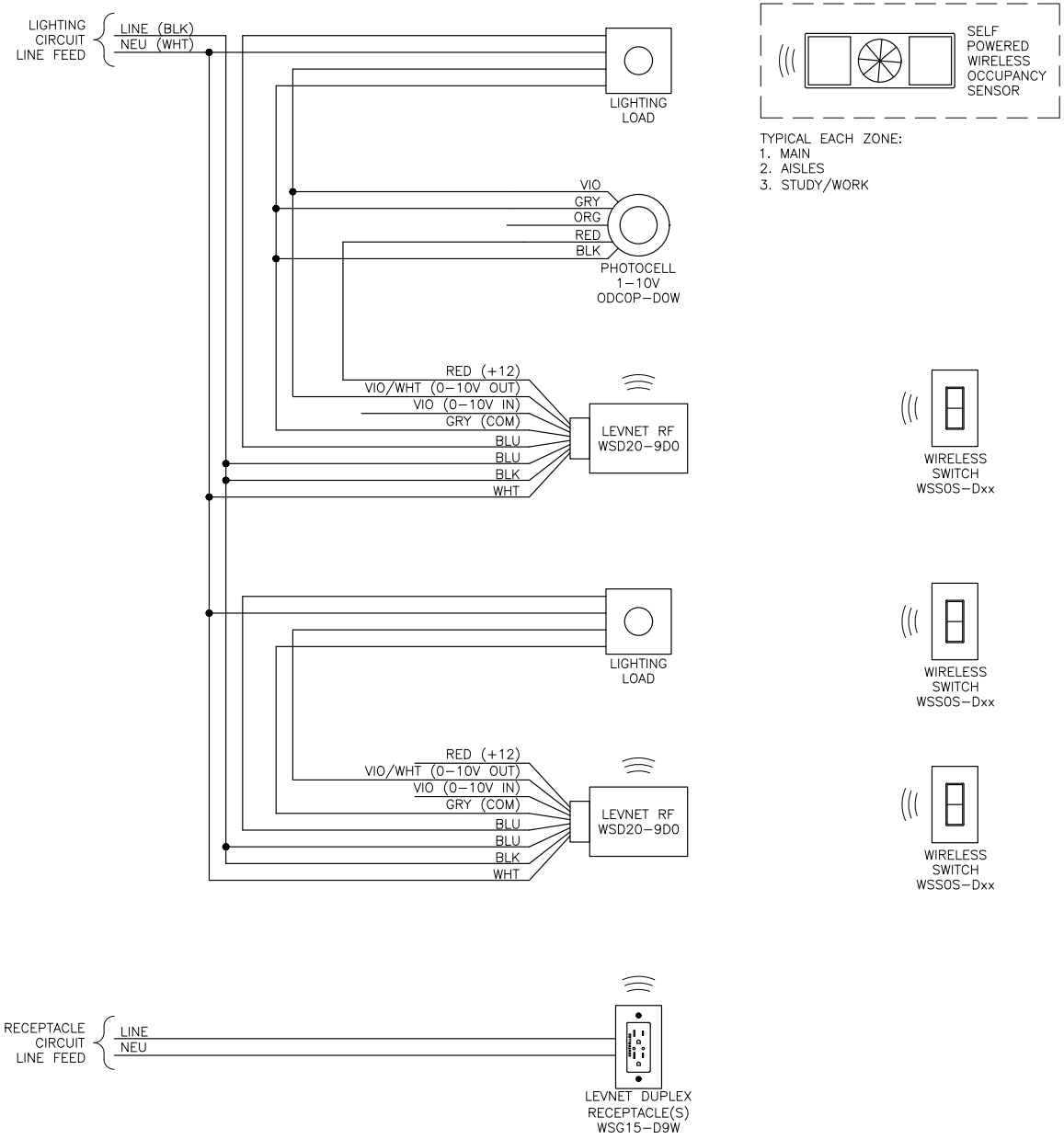
COMMON AREA—GREENMAX



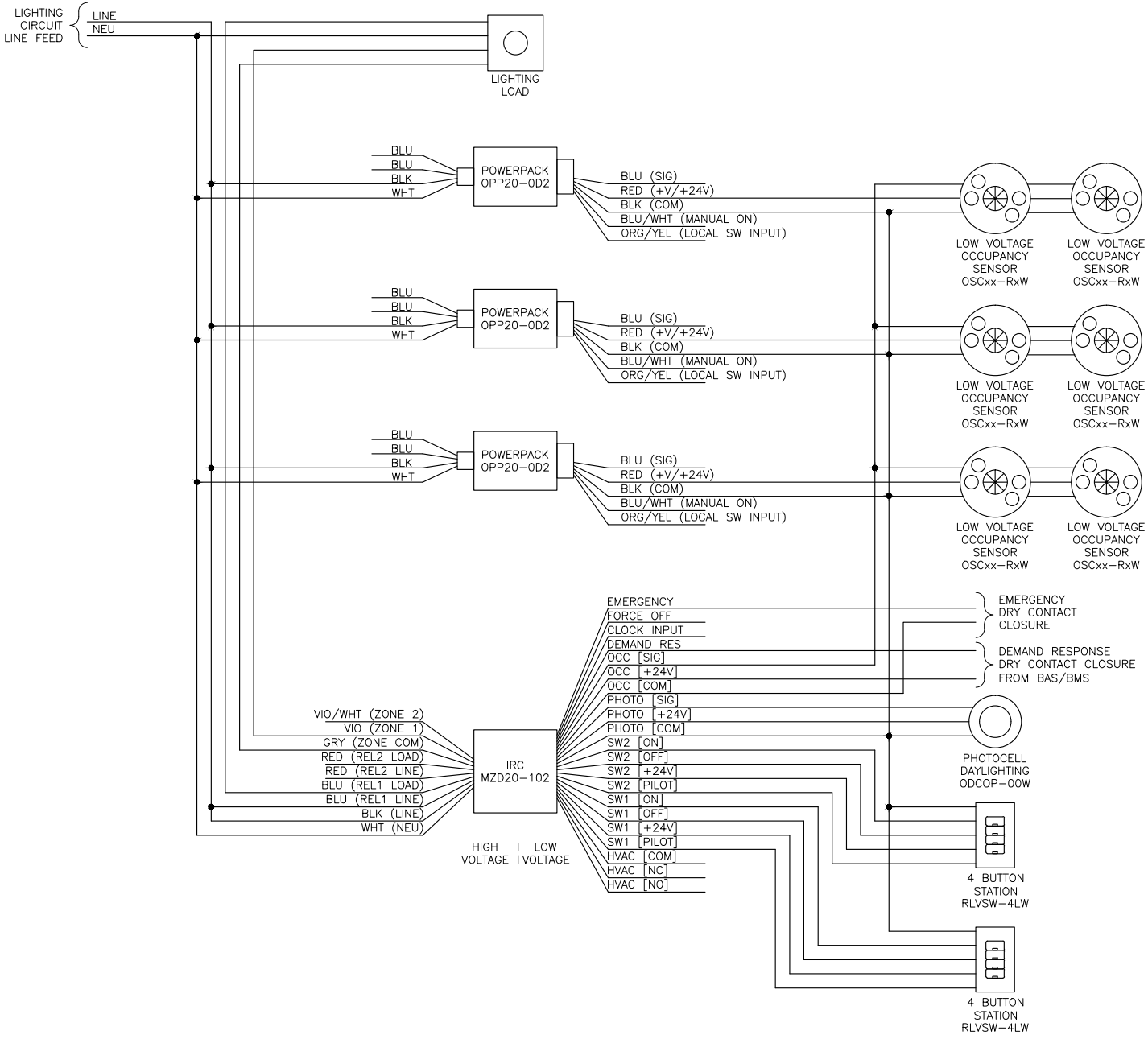
COMMON AREA—SECTOR



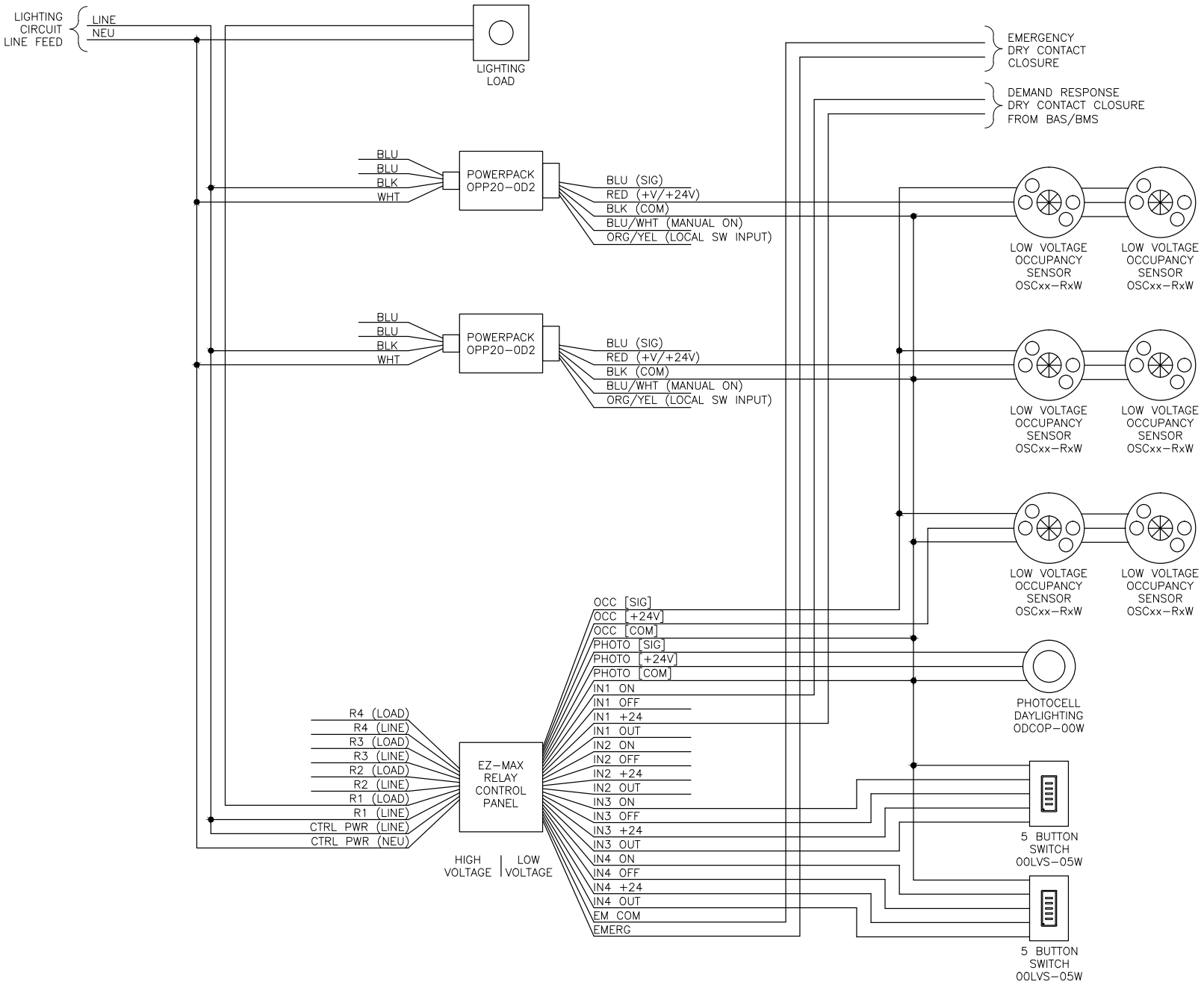
LIBRARY—LEVNET RF



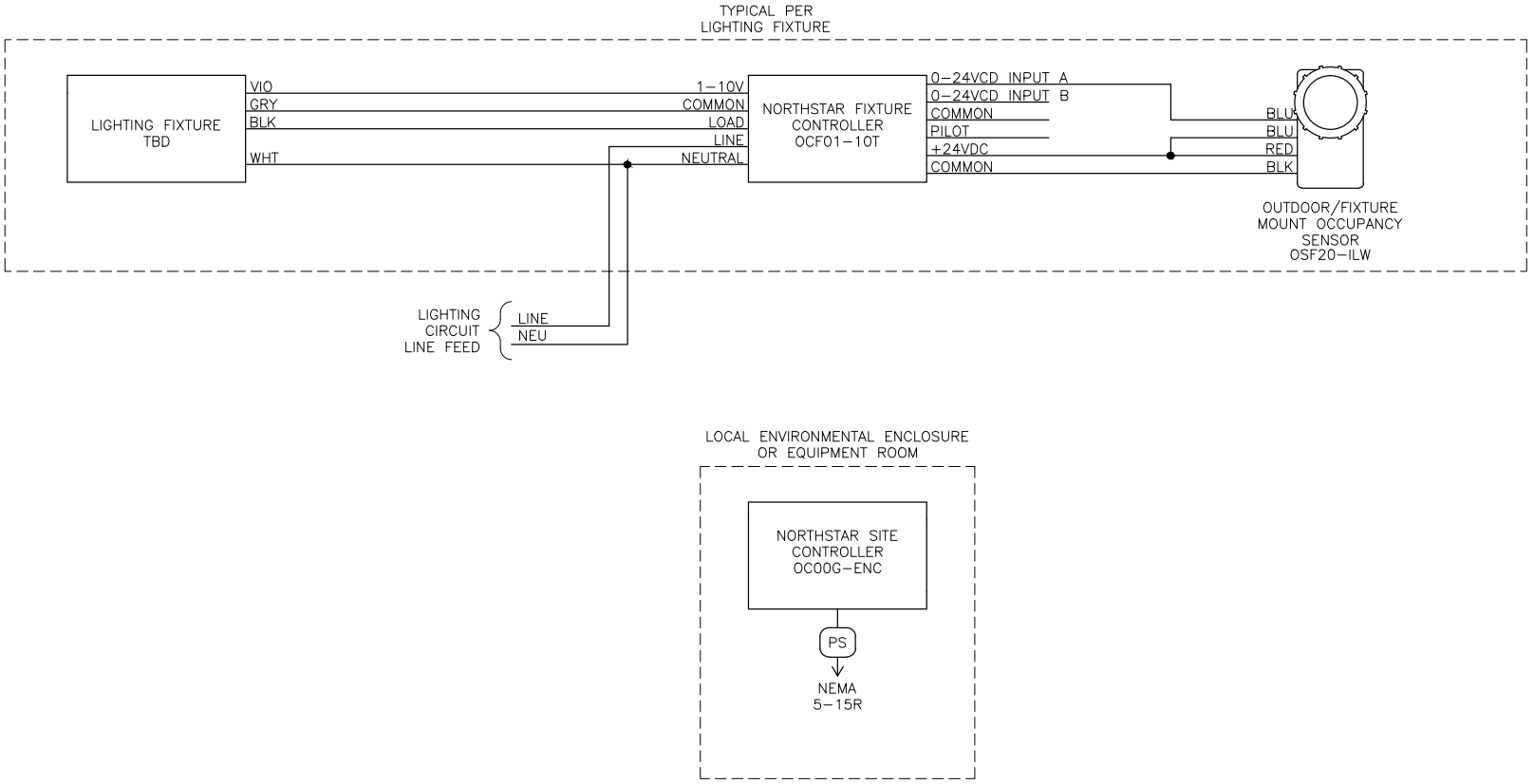
PARKING GARAGE—IRC



PARKING GARAGE—EZ-MAX PLUS



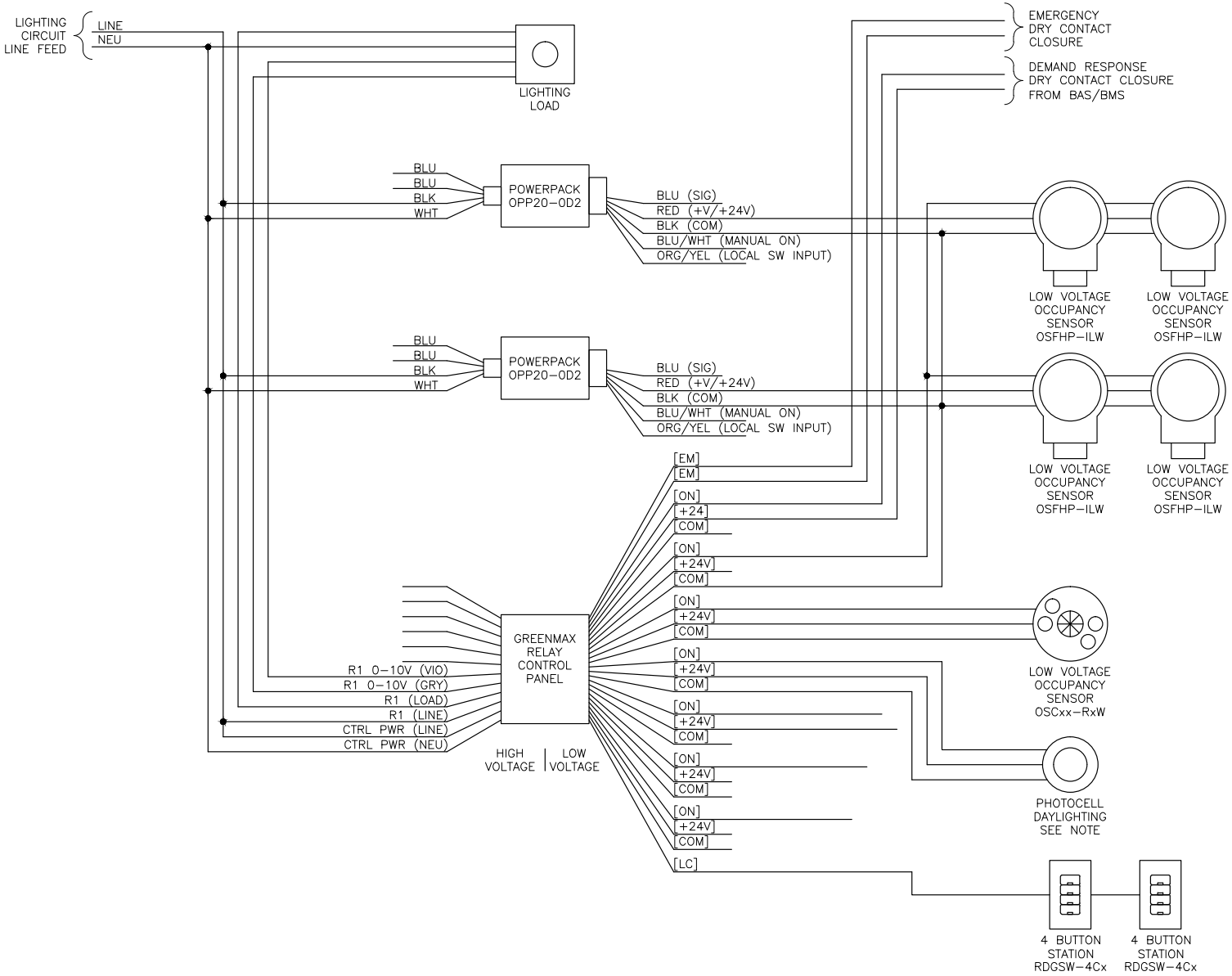
PARKING GARAGE, OCCUPANCY SENSOR PER FIXTURE, NORTHSTAR



NOTES:

1. REFER TO PRODUCT LABELS AND INSTALL SHEETS FOR ADDITIONAL INSTALLATION DETAILS.
2. INDIVIDUALLY CAP OFF UNUSED CONDUCTORS.
3. POWER PACK USED FOR SWITCHING LIGHTING LOAD AND AS AUXILIARY POWER FOR OCCUPANCY SENSORS.
4. DIAGRAM ASSUMES LIGHTING LOAD IS WITHIN DEVICE SPECIFICATIONS.
5. INSTALLING CONTRACTOR TO PROVIDE ENVIRONMENTALLY RATED ENCLOSURES FOR EQUIPMENT AND TERMINATIONS PER APPLICABLE CODES AND BEST PRACTICES.
6. NORTHSTAR FIXTURE CONTROLLERS COMMUNICATE WITH A NORTHSTAR SITE CONTROLLER. REFERENCE PRODUCT LITERATURE FOR ADDITIONAL DETAILS.

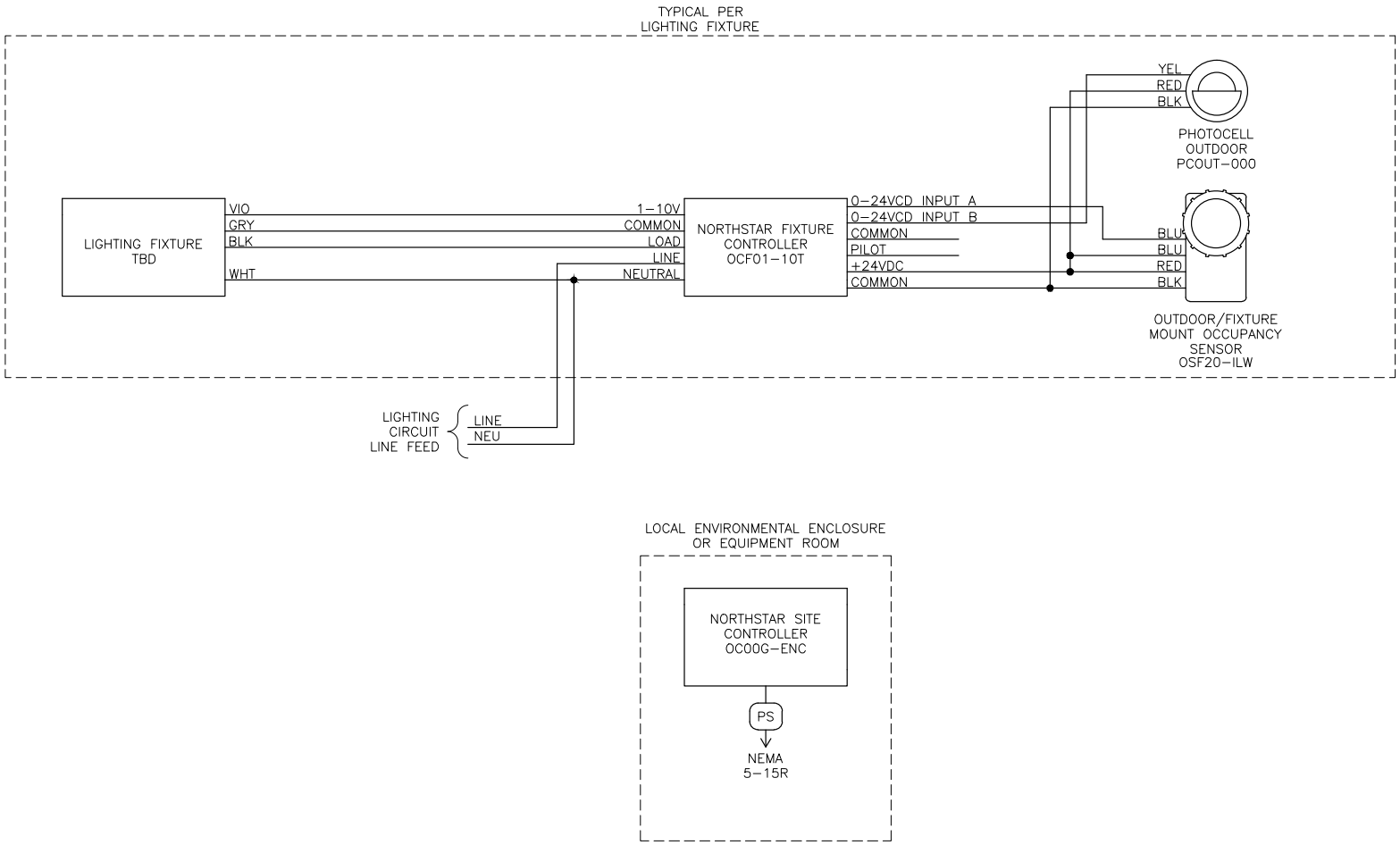
PARKING GARAGE—GREENMAX



NOTES:

1. PHOTOCELL: ODCOP-00W, PCIND, PCATR, PCOUT, PCSKY.

PARKING GARAGE, OCCUPANCY SENSOR AND PHOTOCELL PER FIXTURE, NORTHSTAR



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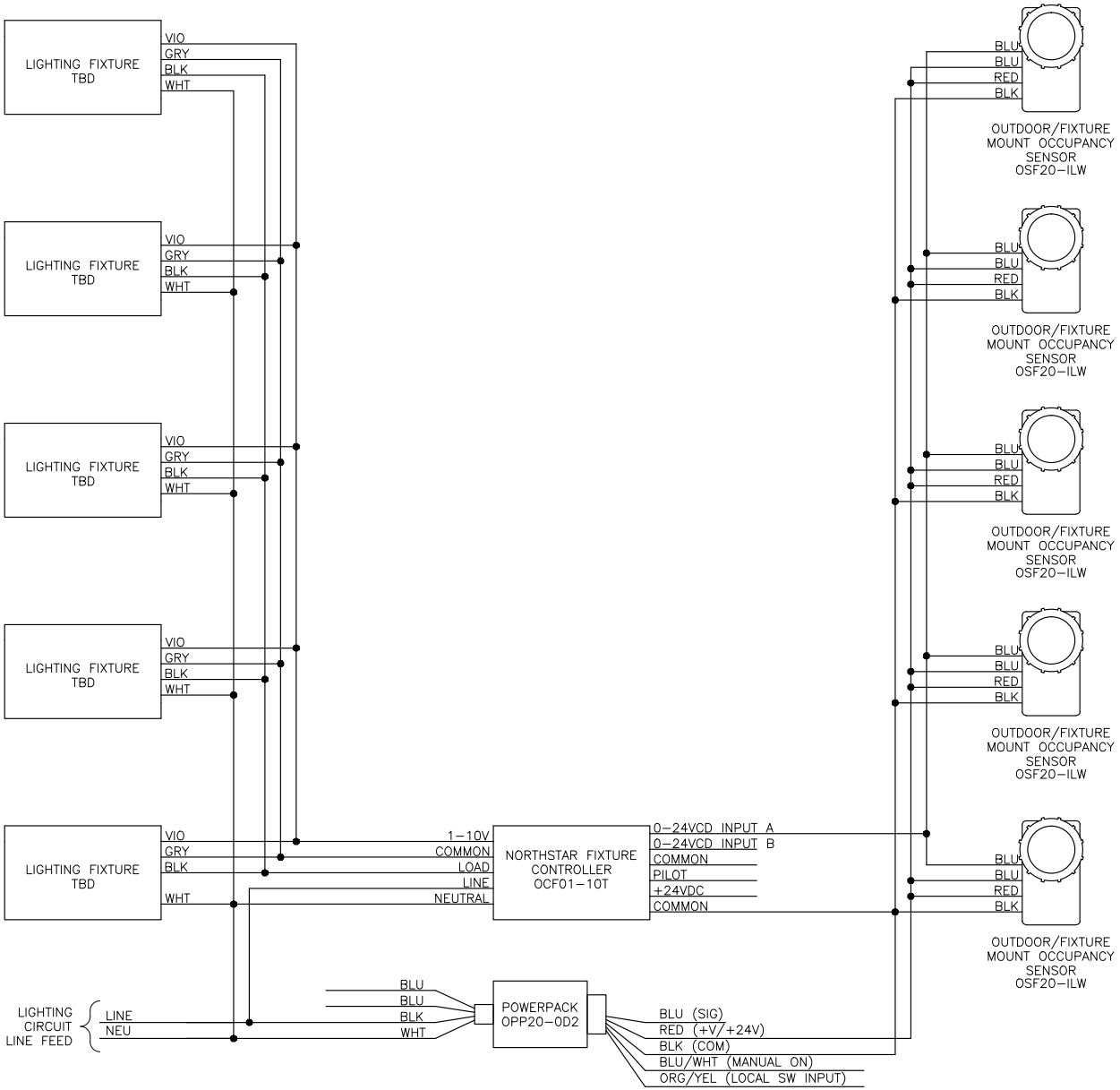
PARKING ZONE (<5A), MULTIPLE OCCUPANCY SENSORS AND FIXTURES, NORTHSTAR



NOTES:

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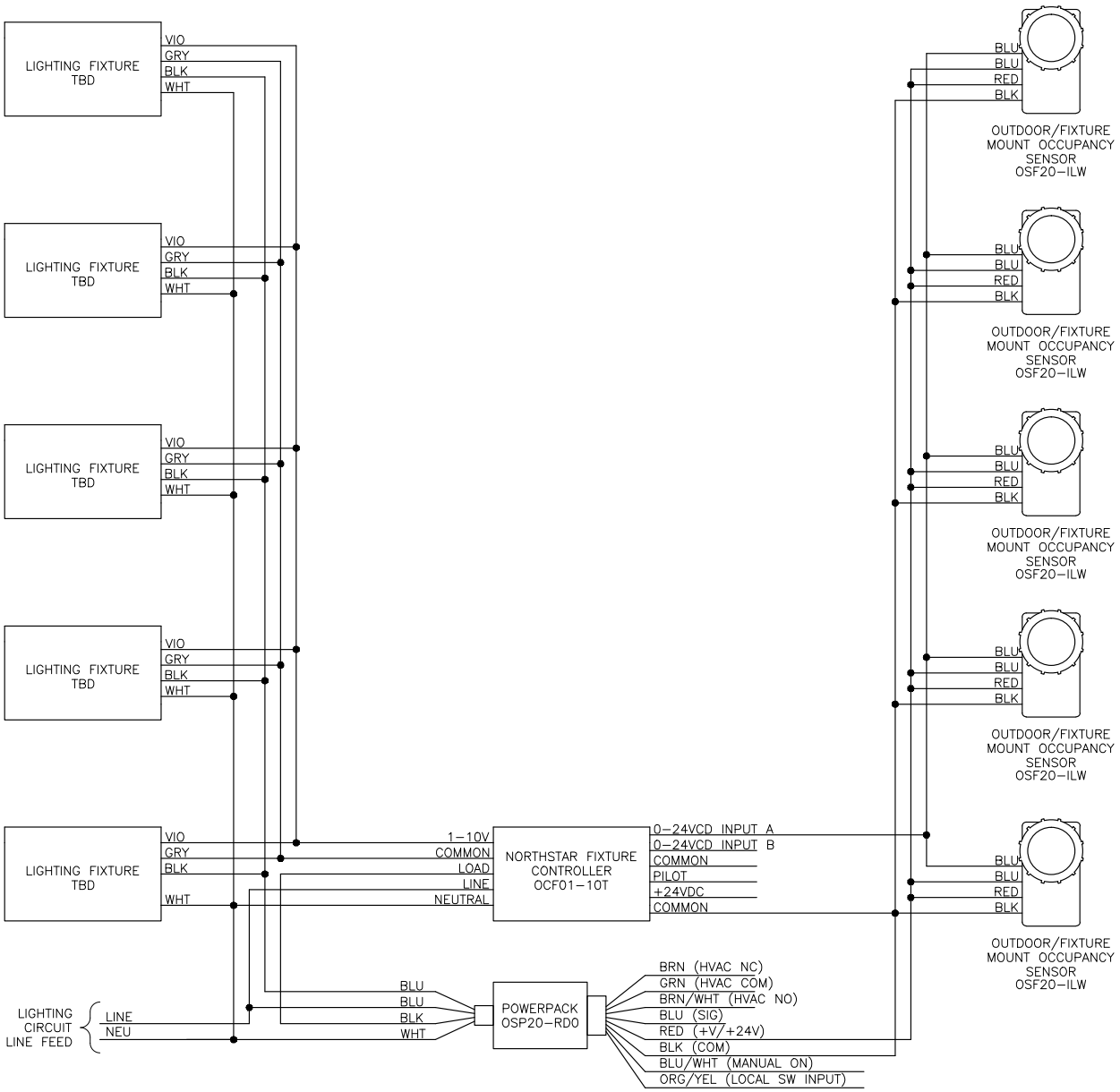
3. POWER PACK USED AS AUXILIARY POWER FOR OCCUPANCY SENSORS ONLY.
4. DIAGRAM ASSUMES LIGHTING LOAD IS WITHIN CONTROLLER SPECIFICATIONS.
5. INSTALLING CONTRACTOR TO PROVIDE ENVIRONMENTALLY RATED ENCLOSURES FOR EQUIPMENT AND TERMINATIONS PER APPLICABLE CODES AND BEST PRACTICES.
6. NORTHSTAR FIXTURE CONTROLLERS COMMUNICATE WITH A NORTHSTAR SITE CONTROLLER. REFERENCE PRODUCT LITERATURE FOR ADDITIONAL DETAILS.

PARKING ZONE (>5A), MULTIPLE OCCUPANCY SENSORS AND FIXTURES, NORTHSTAR



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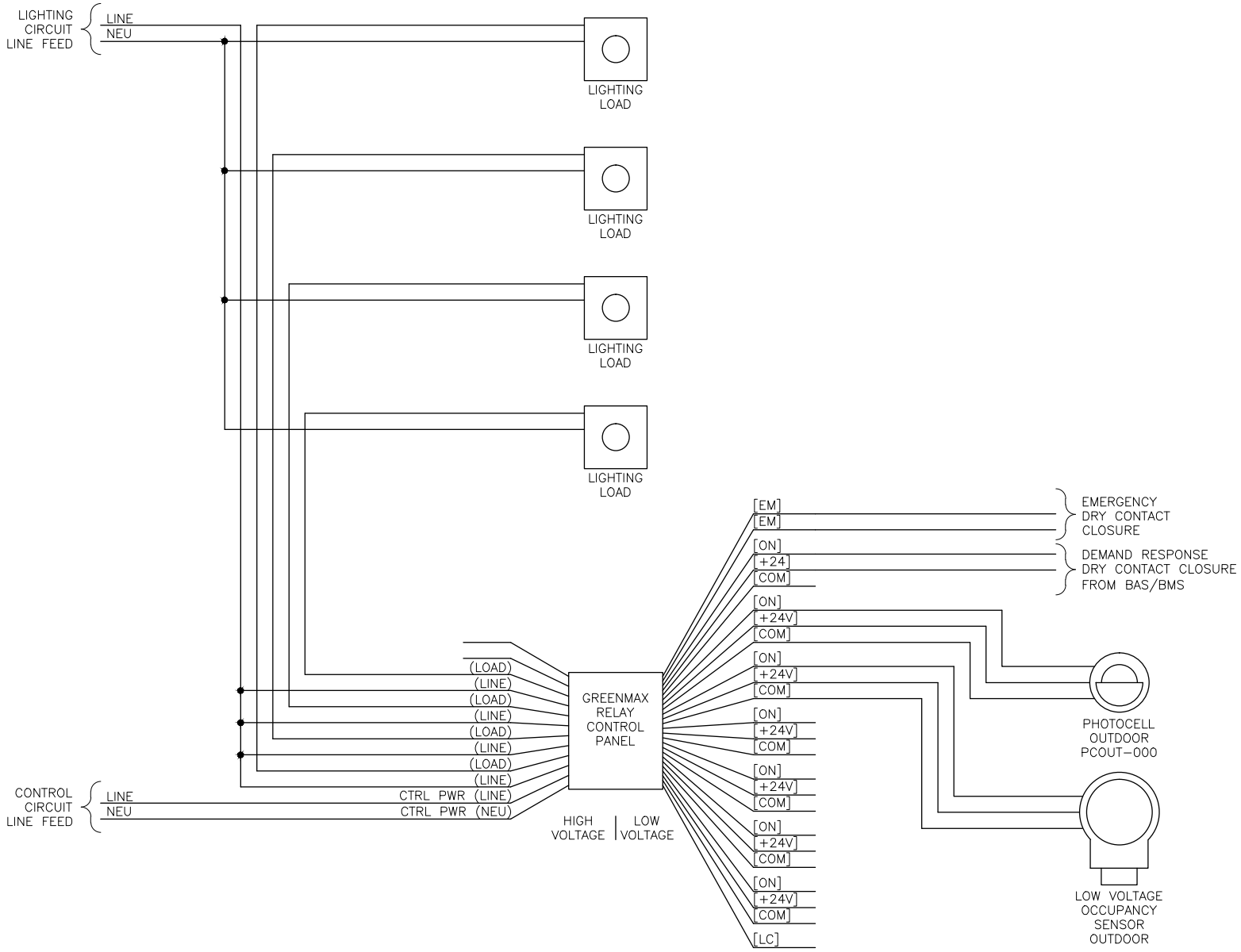
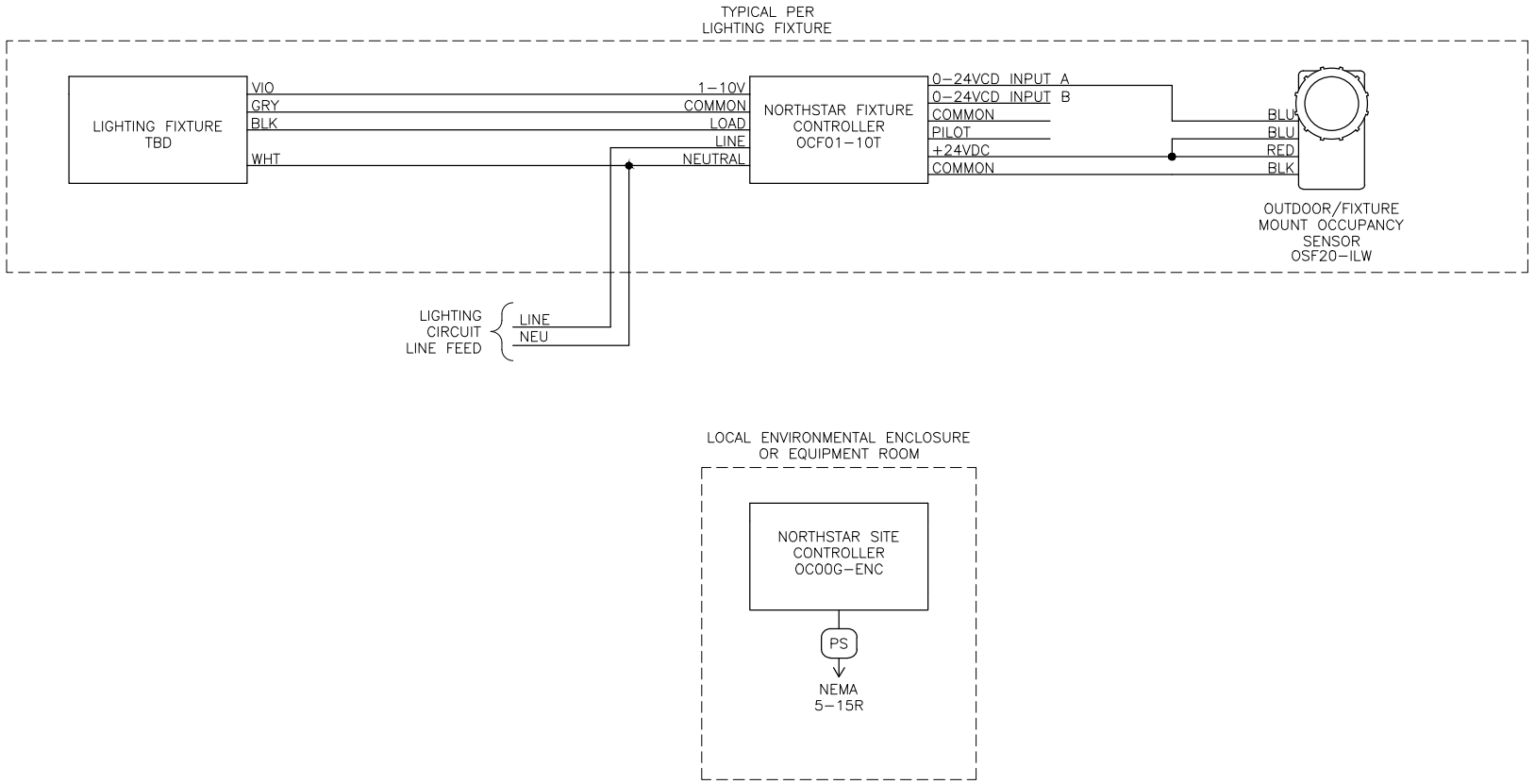
3. POWER PACK USED FOR SWITCHING LIGHTING LOAD AND AS AUXILIARY POWER FOR OCCUPANCY SENSORS.
4. DIAGRAM ASSUMES LIGHTING LOAD IS WITHIN POWER PACK SPECIFICATIONS.
5. INSTALLING CONTRACTOR TO PROVIDE ENVIRONMENTALLY RATED ENCLOSURES FOR EQUIPMENT AND TERMINATIONS PER APPLICABLE CODES AND BEST PRACTICES.
6. NORTHSTAR FIXTURE CONTROLLERS COMMUNICATE WITH A NORTHSTAR SITE CONTROLLER. REFERENCE PRODUCT LITERATURE FOR ADDITIONAL DETAILS.

SITE LIGHTING—GREENMAX



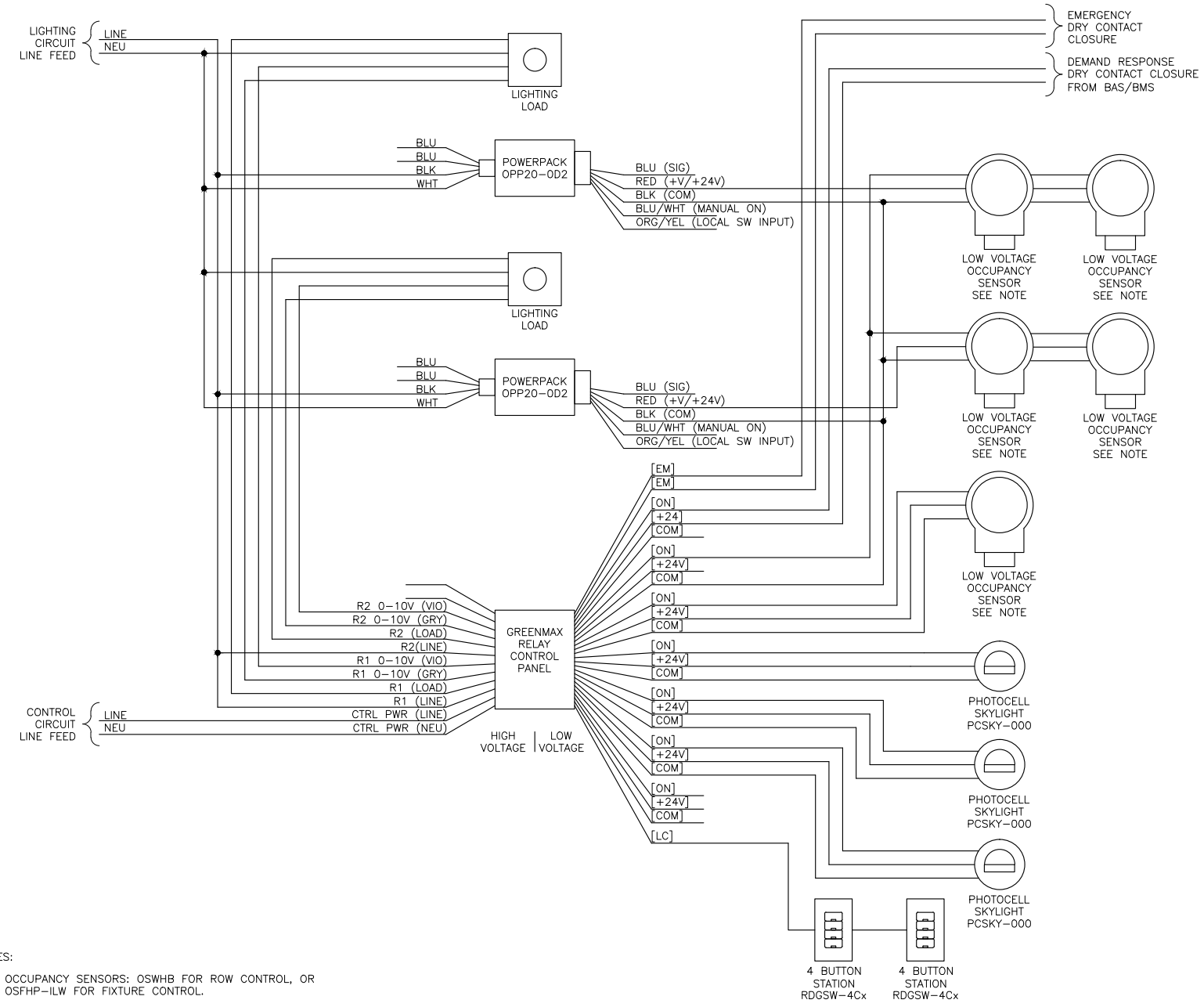
SITE LIGHTING, OCCUPANCY SENSOR PER FIXTURE, NORTHSTAR



NOTES:

1. REFER TO PRODUCT LABELS AND INSTALL SHEETS FOR ADDITIONAL INSTALLATION DETAILS.
2. INDIVIDUALLY CAP OFF UNUSED CONDUCTORS.
3. POWER PACK USED FOR SWITCHING LIGHTING LOAD AND AS AUXILIARY POWER FOR OCCUPANCY SENSORS.
4. DIAGRAM ASSUMES LIGHTING LOAD IS WITHIN DEVICE SPECIFICATIONS.
5. INSTALLING CONTRACTOR TO PROVIDE ENVIRONMENTALLY RATED ENCLOSURES FOR EQUIPMENT AND TERMINATIONS PER APPLICABLE CODES AND BEST PRACTICES.
6. NORTHSTAR FIXTURE CONTROLLERS COMMUNICATE WITH A NORTHSTAR SITE CONTROLLER. REFERENCE PRODUCT LITERATURE FOR ADDITIONAL DETAILS.

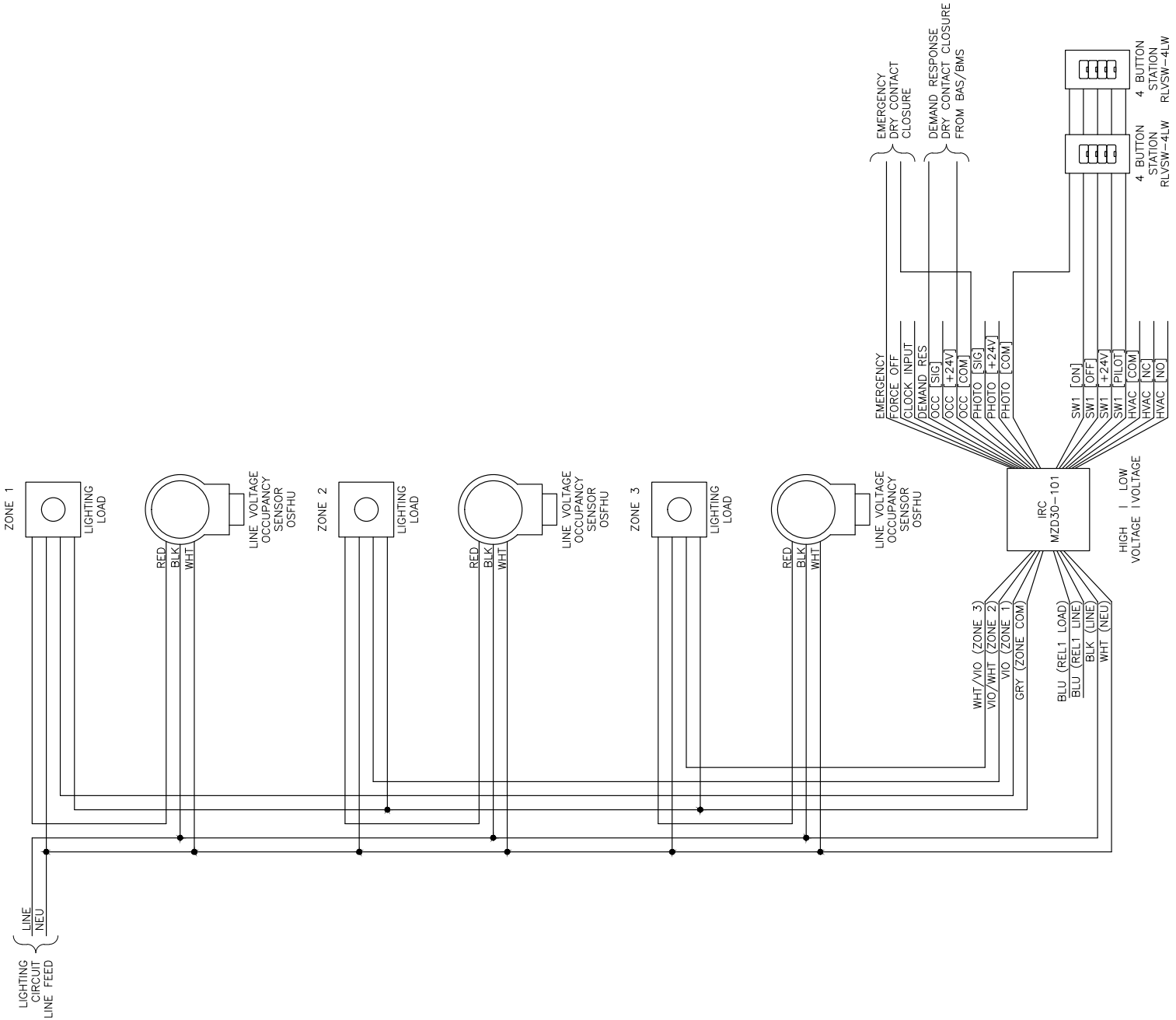
WAREHOUSE—GREENMAX



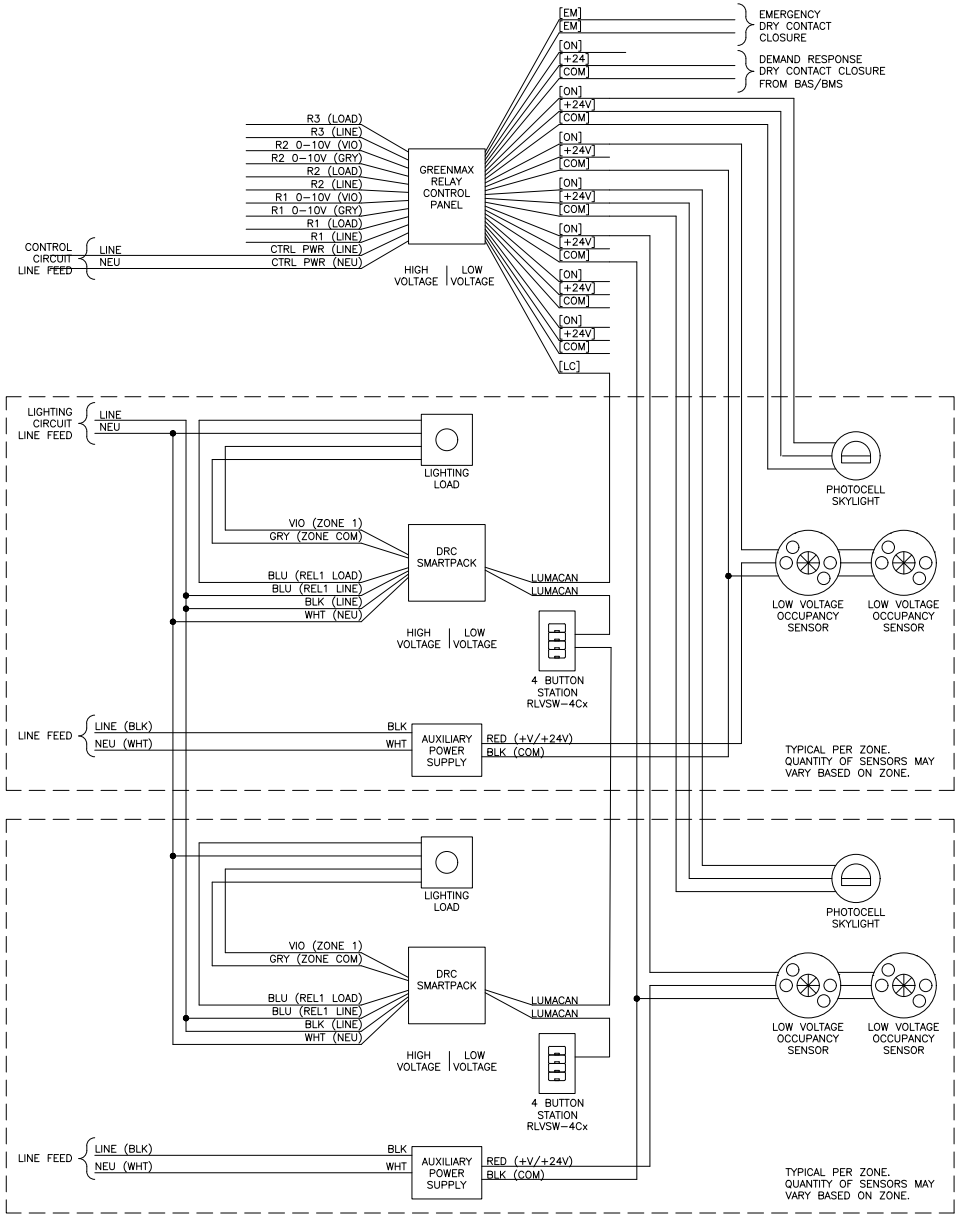
NOTES:

1. OCCUPANCY SENSORS: OSWHB FOR ROW CONTROL, OR OSFHP-ILW FOR FIXTURE CONTROL.

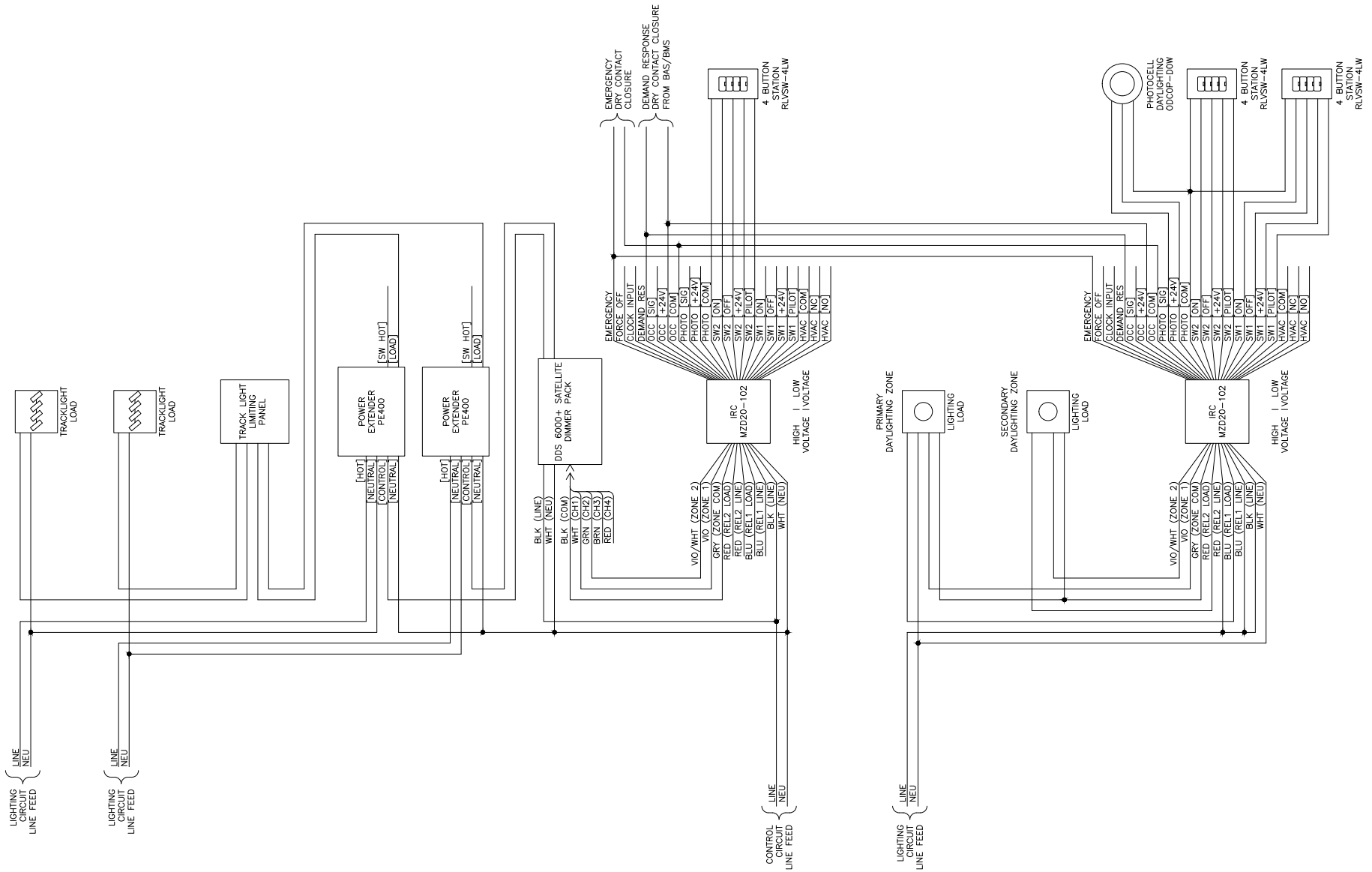
WAREHOUSE—IRC



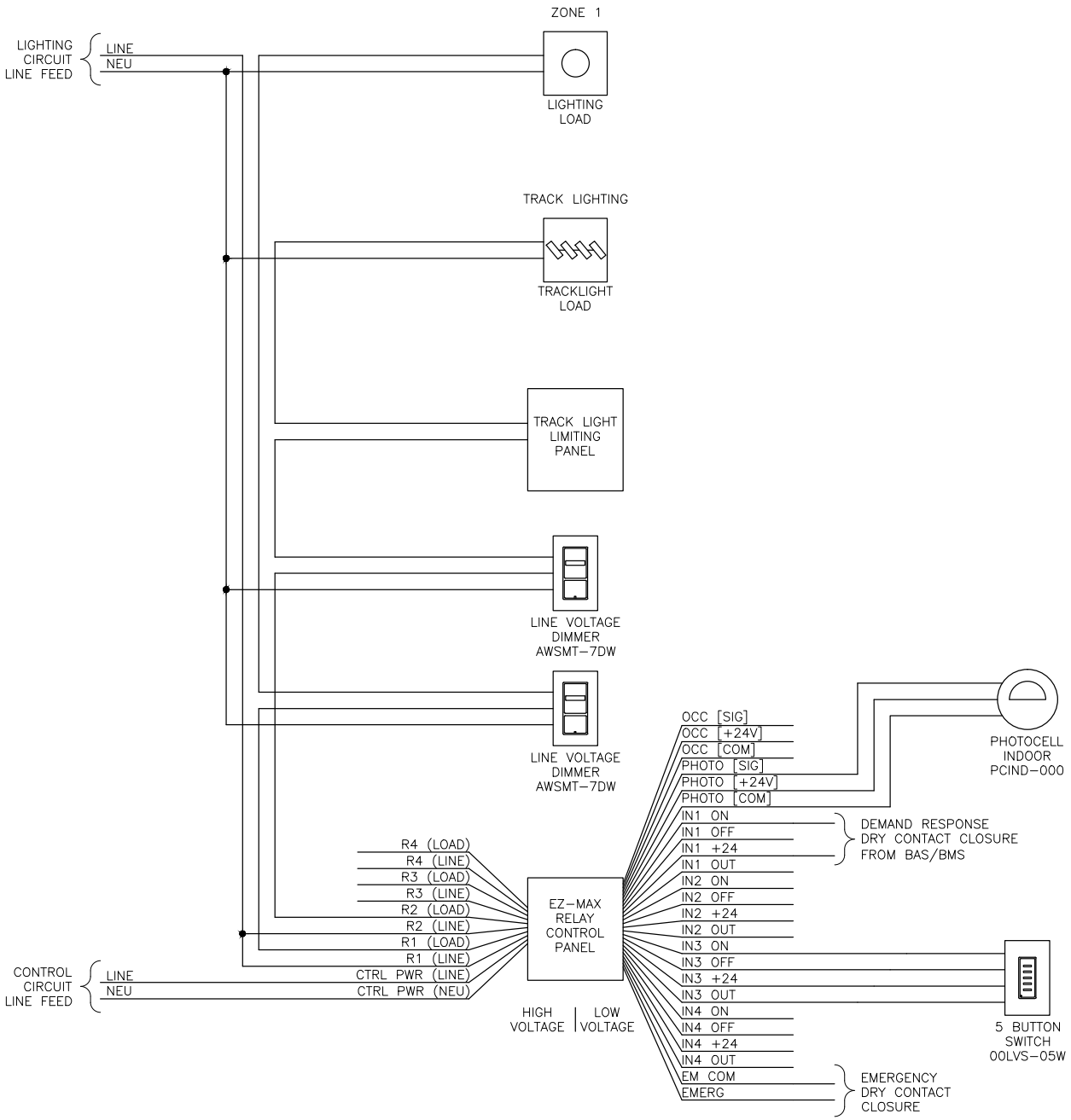
WAREHOUSE—OSF20-ILW/OSFHP-ILW/DRC



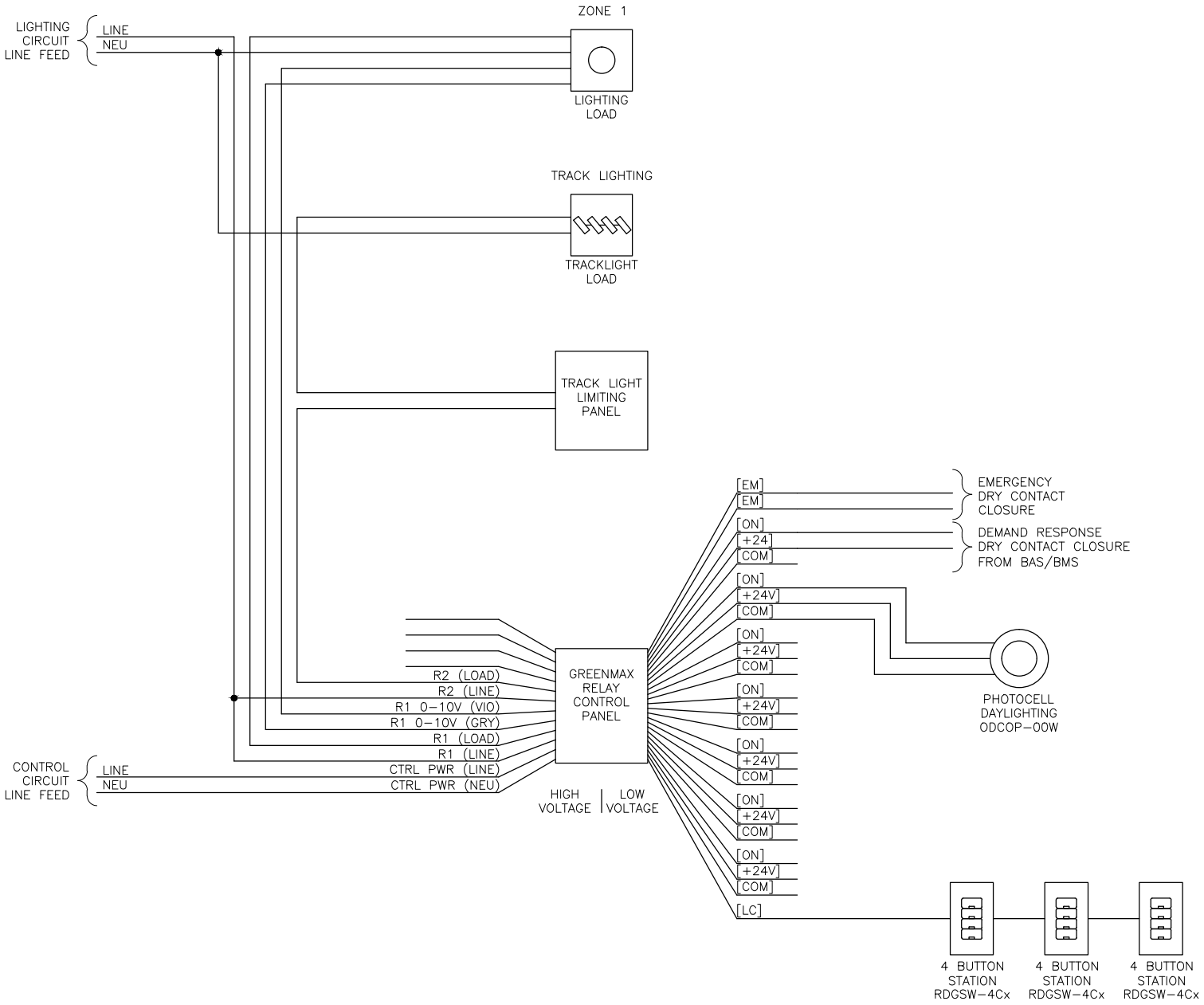
RETAIL SPACE—IRC



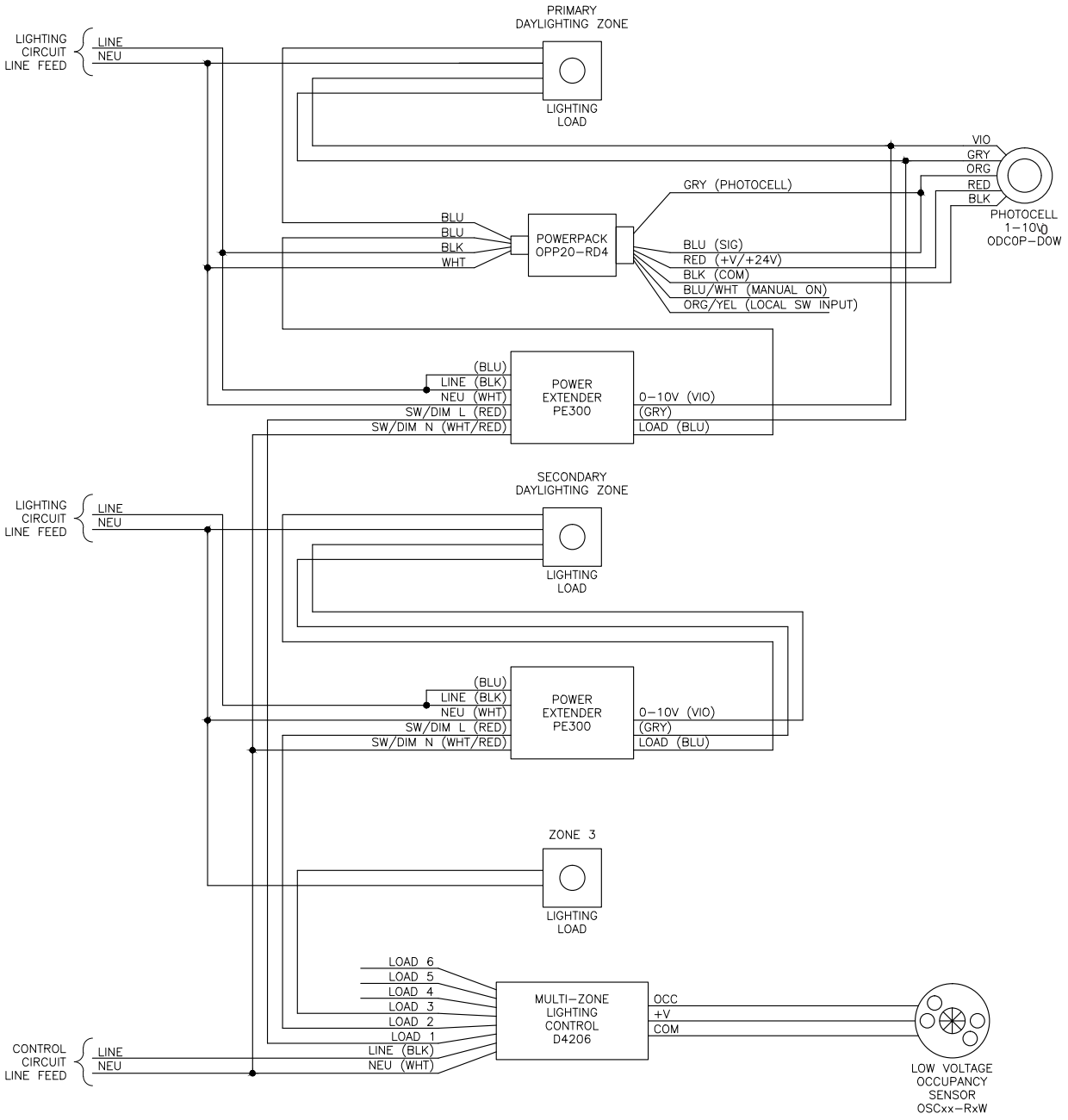
RETAIL SPACE—EZ-MAX PLUS



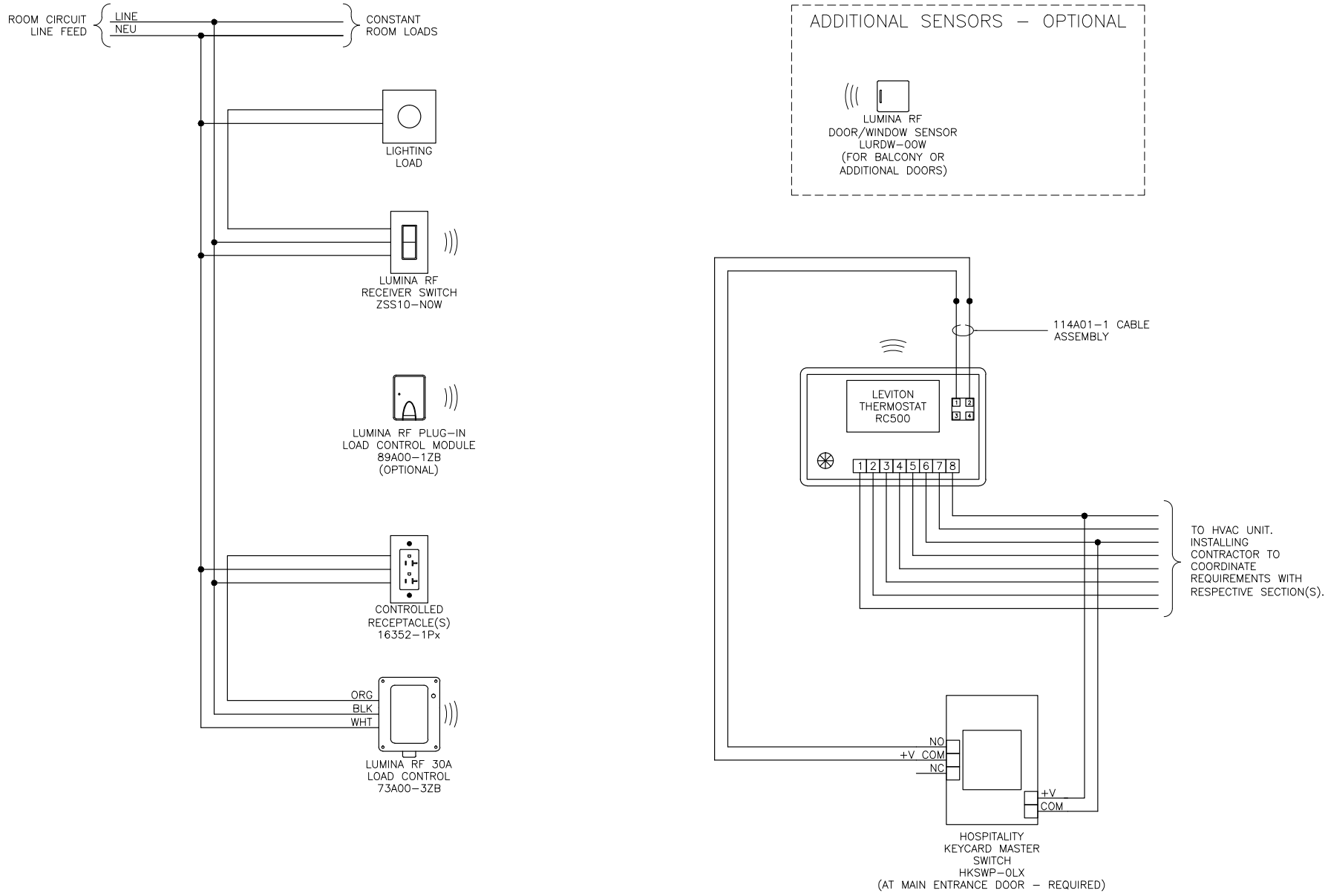
RETAIL SPACE—GREENMAX



RESTAURANT—D4000



HOSPITALITY—LUMINA RF AND KEY CARD SWITCH



NOTES:

1. MINIMUM SYSTEM REQUIREMENTS FOR AUTOMATED OCCUPANCY/VACANCY ROOM CONTROL: OMNISTAT 3 (RC500), HARD–WIRED KEYCARD SWITCH (HKSWP)

Leviton Manufacturing Co., Inc. Energy Management, Controls and Automation
20497 SW Teton Avenue, Tualatin, OR 97062 **tel** 800-736-6682 **fax** 503-404-5594 **tech line** (6:00AM-4:00PM PT Mon-Fri) 800-959-6004

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