

REV	DATE

ROOM TYPE	OCCUPANCY SENSOR					TIME CLOCK		WALL SWITCH		DAYLIGHT SENSOR	NOTES	
	OCCUPANCY MODE (AUTO ON)	VACANCY MODE	DUAL TECHNOLOGY	OCCUPIED LEVEL (%)	PARTIAL OFF (%)	SCHEDULE ON TIME	SCHEDULE OFF TIME	SCHEDULE OVERRIDE SWITCH	MANUAL CONTROL (LOCAL SWITCH)	LOCKABLE SWITCH COVER		SCENE CONTROL
BREAKROOMS/KITCHENS	X	X	X	100	7.5	10	10		X		X	X
CLASSROOMS	X	X	X	50	7.5	10	10		X	X	X	
CONFERENCE ROOMS	X	X	X	50	7.5	10	10		X	X	X	
COPY ROOMS	X	X	X	100	7.5	10	10		X		X	
CORRIDORS/STAIRWELLS	X			100	7.5	10	10		X	X	X	
EXTERIOR				100				DUSK	DAWN			**
LABS	X	X	X	100	17.5	10	20		X	X	X	
MULTIPURPOSE ROOMS	X	X	X	50	7.5	10	10		X		X	
OPEN OFFICE AREAS > 300 SQ FT	X	X	X	100	7.5	10	10		X		X	***
PARKING GARAGE	X			100	10	10	12.5		X		X	
RESTAURANT/STORES				100				TBD	TBD	X	X	*
RESTROOMS	X	X	X	100	7.5	10	10		X	X	X	
OFFICES < 300 SQ FT	X	X	X	50	7.5	10	10		X		X	
STORAGE ROOMS > 100 SQ FT	X			100	7.5	10	10		X		X	
WAREHOUSES	X			100	10	50	12.5	TBD	TBD	X		X

NOTES:
 * 5 MINUTES BEFORE THE LIGHTING IS SCHEDULED TO TURN OFF, THE LIGHTS WILL TURN OFF FOR 1 SECOND AND THEN GO BACK TO ITS PREVIOUS DIMMING LEVEL. THIS BLINK WARNING PREVENTS FALSE OFFS AND GIVES AUTHORIZED PERSONNEL A WARNING TO PRESS WALL SWITCH TO ACTIVATE A 2-HOUR OVERRIDE. OWNER TO VERIFY TIME SCHEDULES.
 ** AUTOMATIC SCHEDULING CONTROLS SHALL BE CAPABLE OF LIGHTING SETBACK CONTROL IN ACCORDANCE TO C405.2.6.2 FOR DECORATIVE FIXTURES AND C405.6.2.3 FOR NON-DECORATIVE FIXTURES.
 *** LIGHTING IN OPEN OFFICE AREAS GREATER THAN 300 SQUARE FEET, LIGHTING SHALL BE CONTROLLED SEPARATELY IN CONTROL ZONES NOT GREATER THAN 600 SQUARE. THE FIXTURES IN THE OCCUPIED CONTROL ZONES WILL BE ON AT 100% FULL BRIGHT AND THE FIXTURES IN THE UNOCCUPIED (AFTER 7.5 MINUTES OF NO DETECTED MOVEMENT) CONTROL ZONES WILL BE AT 20% FULL BRIGHT. IF ALL AREAS ARE UNOCCUPIED (AFTER 10 MINUTES OF NO DETECTED MOVEMENT IN ALL CONTROL ZONES) THEN THE LIGHTS WILL TURN OFF.

GENERAL NOTES:

- DETAILS AND DESIGN IS BASED ON AN LIGHT LIGHTING CONTROLS SYSTEM.
- DETAILS ARE DIAGNOSTIC AND FOR REFERENCE OF SYSTEM AND ROOM TYPE REQUIREMENTS TO MEET BASIS OF DESIGN. REFER TO MANUFACTURERS SHOP DRAWINGS FOR QUANTITIES AND DEVICES USED FOR EACH SPACE AND NETWORK.
- LIGHTING CONTROL SUBMITTALS FOR NETWORKED SYSTEM SHALL BE PROVIDED BY THE MANUFACTURER OR FACTORY REPRESENTATIVE AND SHALL INCLUDE THE FOLLOWING DOCUMENTATION (NOT LIMITED TO FOLLOWING):
 - SHOP DRAWINGS SHOWING QUANTITY AND LOCATION OF ALL DEVICES.
 - STANDALONE NETWORK SINGLE LINE DIAGRAM (BASIS OF DESIGN) PROGRAMMING OPERATION FOR EACH ROOM TYPE.
 - DEVICE CUTSHEETS.
 - MANUFACTURER OR FACTORY REPRESENTATIVE TO INCLUDE STARTUP AND COMMISSIONING OF THE LIGHTING CONTROL SYSTEM. MUST INCLUDE A SITE VISIT FOR THE FOLLOWING:
 - A PRE-CONSTRUCTION MEETING TO CONFIRM DESIGN AND FIELD INSTALLATION REQUIREMENTS.
 - PROGRAMMING AND COMMISSIONING OF THE LIGHTING CONTROL SYSTEM TO MEET THE BASIS OF DESIGN AND IEC REQUIREMENTS.
 - MAINTENANCE / OWNER WALK THROUGH FOR MAKING FINAL ADJUSTMENTS TO PROGRAMMING.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING CONTROL DEVICES, CABLES, ACCESSORIES AS REQUIRED BY MANUFACTURERS RECOMMENDATION TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL COMPLIANT IEC SYSTEM.
- CONTRACTOR SHALL TEST ALL LOW VOLTAGE NETWORK CABLES IN THE FIELD TO THE VERIFICATION AND REQUIREMENTS BY THE MANUFACTURER PRIOR TO SYSTEM STARTUP.
- ALL DEVICES SHALL BE MOUNTED AND INSTALLED IN ACCESSIBLE CEILING LOCATIONS. CONTRACTOR WILL VERIFY BEST FIT LOCATIONS IN THE FIELD.
- CONTRACTOR TO VERIFY COMPATIBILITY BETWEEN DIMMING POWERPACKS AND INSTALLED FIXTURES.
- CONTACT HILA FOR COMPLETE nLIGHT LIGHTING CONTROLS BOM, CONTROL@HILA.LTG.COM - PHONE # 888-683-9344.

LIGHTING CONTROLS LEGEND AND DESCRIPTIONS

- OS** EXTENDED RANGE 360° SENSOR/CEILING MOUNT, LOW VOLTAGE, PASSIVE DUAL TECHNOLOGY (PDT)
- DP** DETECTION TECHNOLOGY SHALL BE SELECTABLE AS FOLLOWS: PIR/CAM/PIR/CS BOTH
OS - CIMS PDT 10 G2
- TS** AUTOMATIC DIMMING CONTROL, PHOTOCELL- CEILING MOUNT, LOW VOLTAGE
DS - CIMS PDT 10 G2
- DP1** 16 AMP (120/277V) POWERRELAY PACK WITH 0-10V DIMMING CONTROL, CHASE NIPPLE MOUNTING
DP - rPP20 24V EFF G2
- PL1** 20 AMP (120V) RELAY PACK FOR PLUG LOAD CONTROL, CHASE NIPPLE MOUNTING
PL - rPP20 24V G2
- PCD1** 16 AMP (120/277V) POWERRELAY PACK PHASE DIMMING CONTROL, CHASE NIPPLE MOUNTING
PCD - rPP20 24V EFF G2
- SS1** 16 AMP (120/277V) POWERRELAY PACK PHASE DIMMING CONTROL, CHASE NIPPLE MOUNTING
SS - rPP20 24V EFF G2
- SS2** 16 AMP (120/277V) POWERRELAY PACK PHASE DIMMING CONTROL, CHASE NIPPLE MOUNTING
SS - rPP20 24V EFF G2
- SS4** 16 AMP (120/277V) POWERRELAY PACK PHASE DIMMING CONTROL, CHASE NIPPLE MOUNTING
SS - rPP20 24V EFF G2
- CS1** LOW VOLTAGE DIMMING TOGGLE SWITCH WITH DIMMING
1-ZONE = S1 - rPODLA 4S DX MVOLT XX G2
2-ZONE = S2 - rPODLA 4S DX MVOLT XX G2
- CS2** LOW VOLTAGE DIMMING TOGGLE SWITCH WITH DIMMING
1-ZONE = S1 - rPODLA 4S DX MVOLT XX G2
2-ZONE = S2 - rPODLA 4S DX MVOLT XX G2
- CS4** LOW VOLTAGE DIMMING TOGGLE SWITCH WITH DIMMING
1-ZONE = S1 - rPODLA 4S DX MVOLT XX G2
2-ZONE = S2 - rPODLA 4S DX MVOLT XX G2
- CSX** LOW VOLTAGE DIMMING TOUCHSCREEN CONTROLLER, INCLUDES 16-ZONES AND 16-SCENES WITH DIMMING
GFXK - rPPD TOUCH XX
SUBSCRIPT REFERENCES ZONE OF CONTROL.

BUILDING MANAGEMENT SYSTEMS INTEGRATION SPECIFICATIONS:

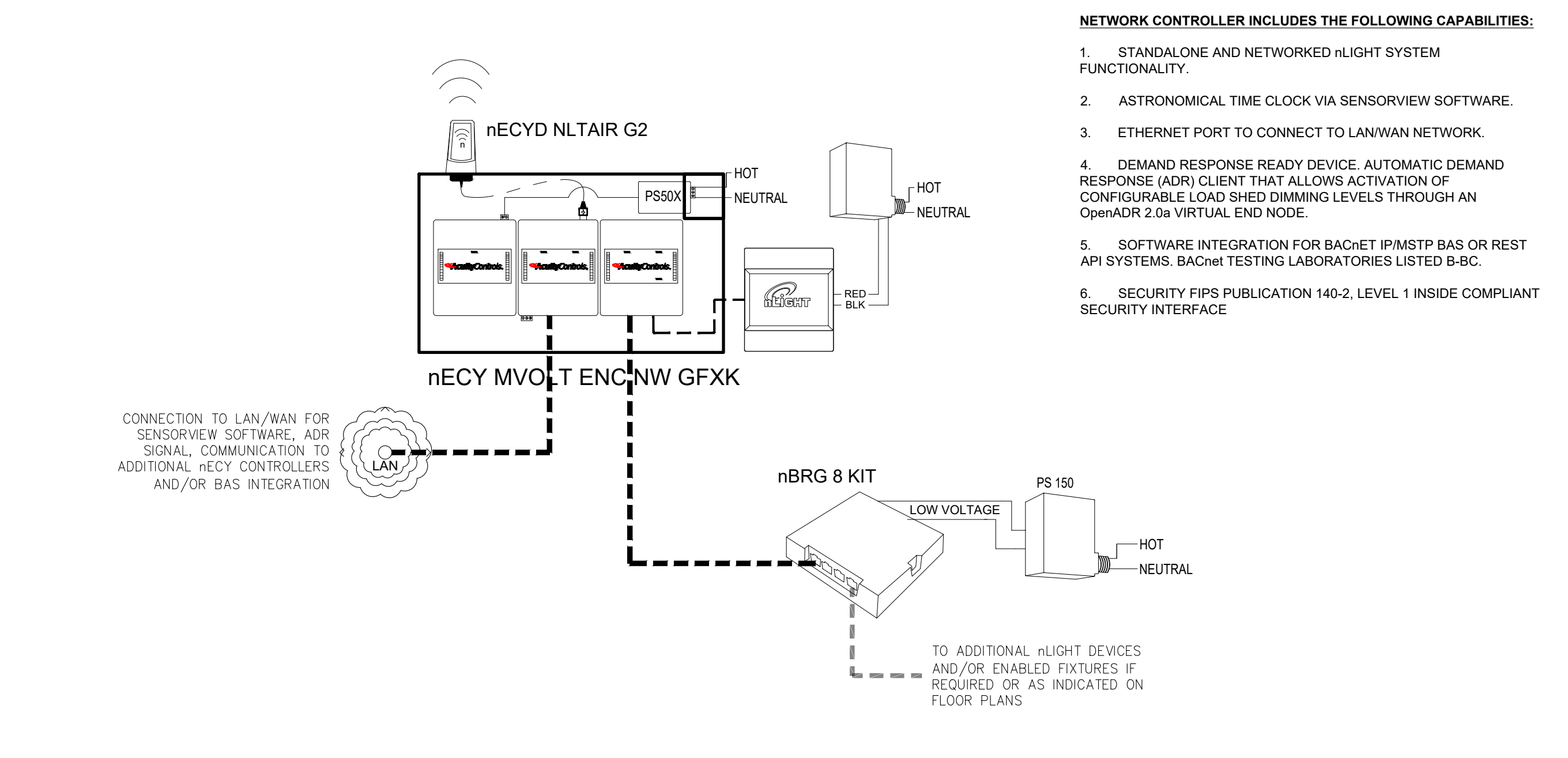
- BACKTESTING LABORATORIES (BTL) LISTED AS A BACKTESTING CONTROLLER (B-BC)
- OPTIONAL AUTOMATIC DEMAND RESPONSE CLIENT OPTION ALLOWS ACTIVATION OF CONFIGURABLE LOAD SHED DIMMING LEVELS THROUGH AN OPERATOR 2 DA VIRTUAL END NODE. REQUIRES OUTBOUND CONNECTION TO UTILITY GRAS.
- ENHANCED SECURITY PROVIDED BY BOTH:
 - HTTPS SERVER
 - U.S. GOVERNMENT SECURITY STANDARD OF FEDERAL INFORMATION PROCESSING STANDARD (FIPS) PUBLICATION 140-2, LEVEL 1, INSIDE (VALIDATION CERTIFICATE PENDING)
- THE INSTALLING CONTRACTOR WILL BE RESPONSIBLE FOR THE FOLLOWING WHEN INTEGRATING LIGHTING CONTROL SYSTEM TO THE BUILDING MANAGEMENT SYSTEM:
 - PROVIDING A PHYSICAL CONNECTION FROM LIGHTING CONTROL SYSTEM TO BMS VIA BACKTESTING CONTROLLER.
 - TO COORDINATE WITH THE BMS INSTALLER ON SPECIAL LABELING CONFIGURATIONS THAT THE LIGHTING CONTROLS PROGRAMMER WILL NEED TO FOLLOW FOR SEAMLESS INTEGRATION OF THE TWO SYSTEMS.
 - TO COORDINATE ONSITE MEETING WITH LIGHTING CONTROLS PROGRAMMER & BMS CONTRACTOR.
- CONTACT HILA FOR FOR INTERGRATION WITH BMS, CONTROL@HILA.LTG.COM - PHONE # 888-683-9344.

SYSTEM OPERATIONS TRAINING OPTIONS, PER SECTION 120.8(1):

- 24-HOUR ONSITE OR REMOTE TRAINING.
- 2-DAY IN PERSON OR REMOTE TRAINING @ HILA, AT CUSTOMER LOCATION, OR VIDEOCONFERENCE SOFTWARE.
- VIDEO TRAINING GIVEN TO EVERYONE WHO PARTICIPATES IN THE 2-DAY IN PERSON OR REMOTE TRAINING.
- CONTACT HILA FOR TRAINING, CONTROL@HILA.LTG.COM - PHONE # 888-683-9344.

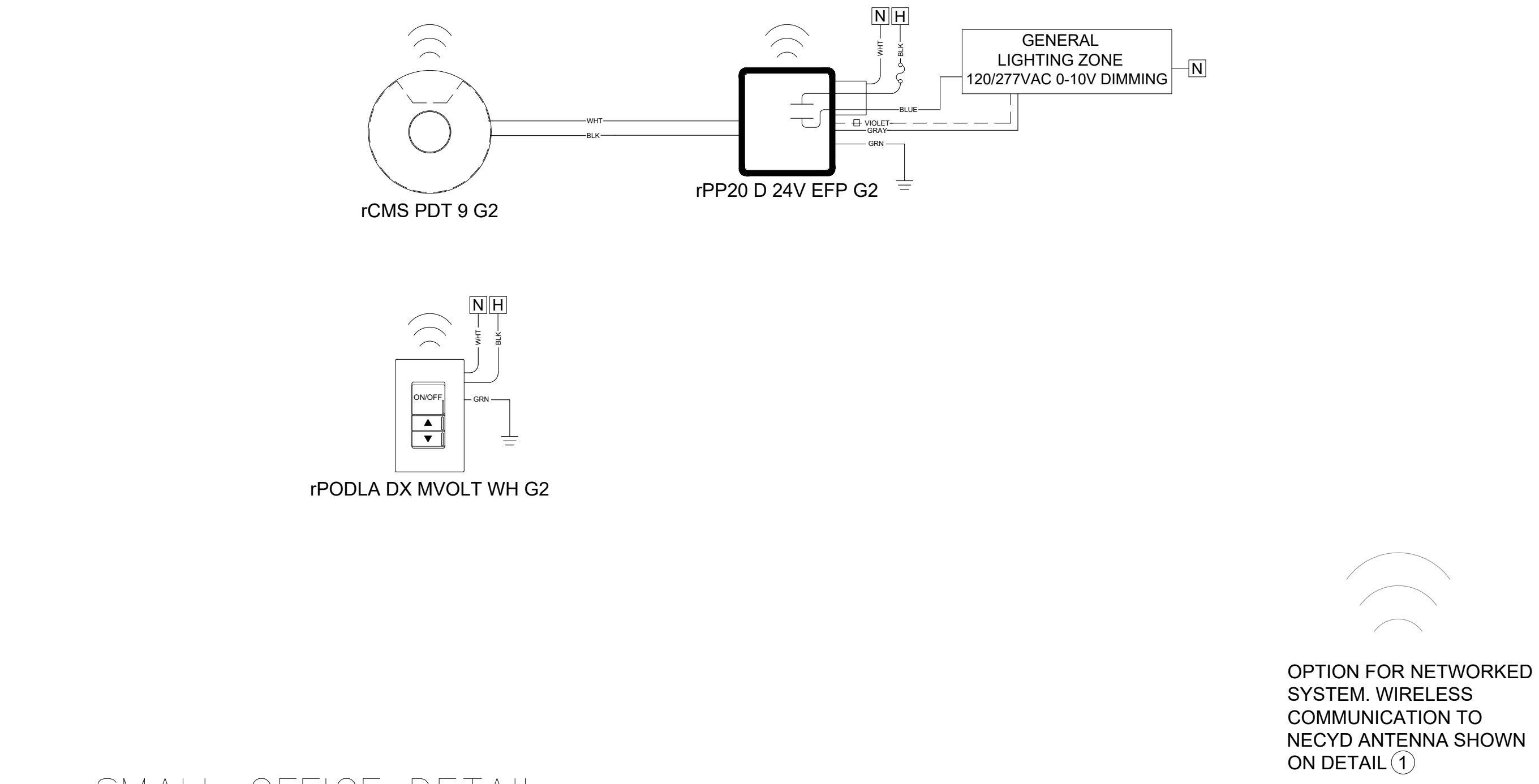
GRAPHIC VISUALIZATION FLOORPLAN INTERFACES:

- SYSTEM SHALL PROVIDE WEB-BASED VISUALIZATION INTERFACE THAT DISPLAYS GRAPHICAL FLOORPLANS.
- GRAPHICAL FLOORPLAN SHALL OFFER THE FOLLOWING TYPES OF SYSTEM VISUALIZATION:
 - FULL DEVICE OPTIONS - A MASTER GRAPHIC OF ENTIRE BUILDING BY FLOOR, SHOWING EACH CONTROL DEVICE INSTALLED IN THE PROJECT WITH ZONES OUTLINE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - CONTROLS EMBEDDED LIGHT FIXTURES, CONTROLS SWITCHDIMMERS, SCENE CONTROLLERS, NETWORK RELAYS, NETWORK BRIDGES, CENTRALIZED SYSTEM CONTROLLERS, WIRE RELAY PANELS, AND GROUP OUTLINES.
 - GROUP ONLY OPTION - A MASTER GRAPHIC OF THE ENTIRE BUILDING, BY FLOOR, SHOWING ONLY CONTROL GROUPS OUTLINED.
 - ALLOW FOR PAN AND ZOOM COMMANDS SO SMALLER AREAS CAN BE DISPLAYED ON A LARGER SCALE SIMPLY BY PANNING AND ZOOMING EACH FLOOR'S MASTER GRAPHIC.
 - A MOUSE CLICK ON ANY CONTROL DEVICE SHALL DISPLAY THE FOLLOWING INFORMATION (IF APPLICABLE):
 - THE DEVICE CATALOG NUMBER, THE DEVICE NAME AND CUSTOM LABEL, DEVICE DIAGNOSTIC INFORMATION, INFORMATION ABOUT THE DEVICE STATUS OR CURRENT CONFIGURATION AVAILABLE WITH AN ADDITIONAL MOUSE CLICK.
 - CUSTOMIZATION TOOLS INCLUDING WIDGET FOR DEVICE STATUSES AND OVERDRIVING DIM LEVELS, HEAT MAP SHOWING DIM LEVEL OR OCCUPANCY, CALLOUTS, TOGGLES, AND WEATHER.
 - FEATURES INCLUDING SYSTEM SCHEDULING, ALARM MONITORING, REPORT CUSTOMIZATION, AND PLAYBACK.
- CONTACT HILA FOR GRAPHIC VISUALIZATION FLOORPLAN INTERFACES, CONTROL@HILA.LTG.COM - PHONE # 888-683-9344.

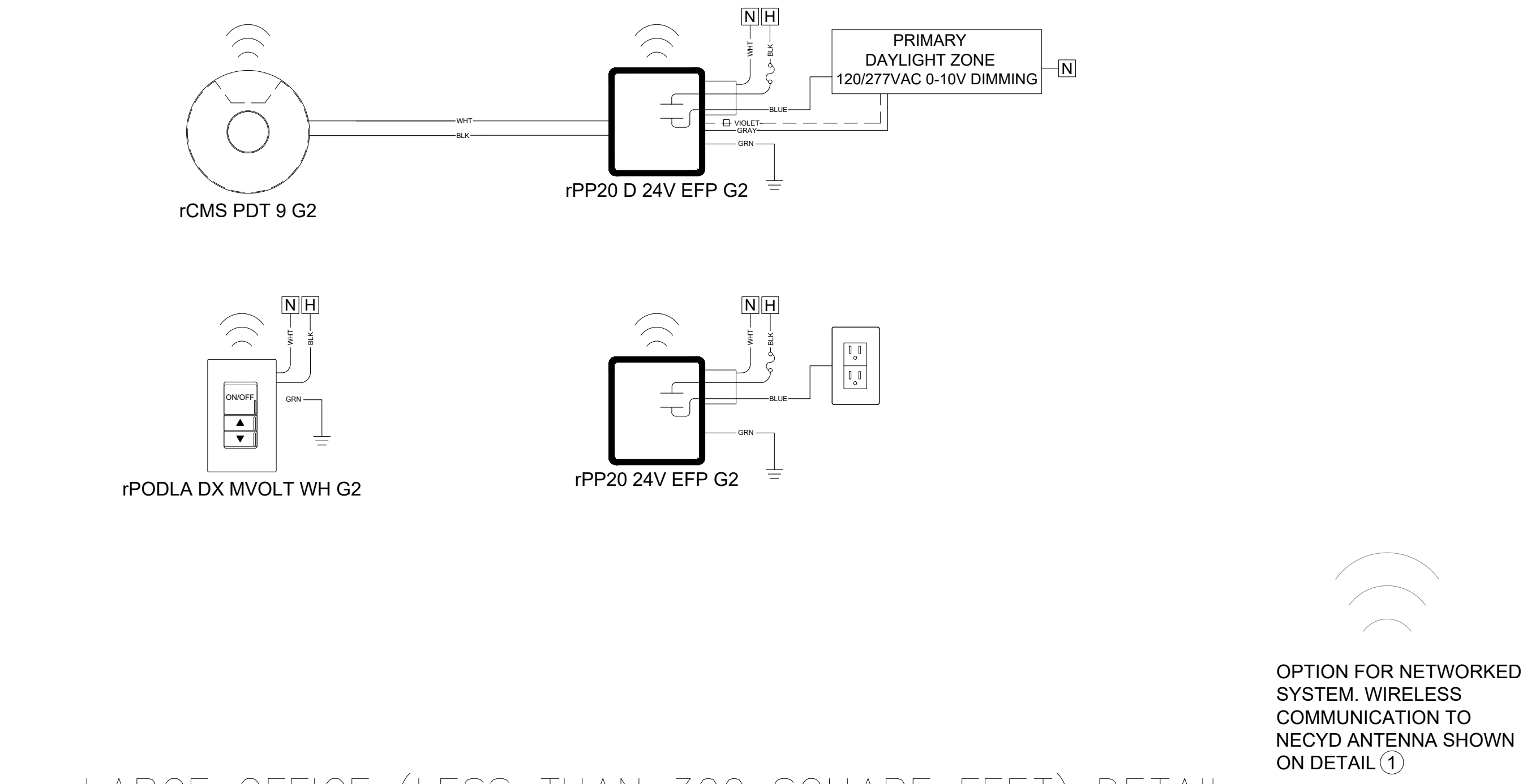


1 nLIGHT BACKBONE NETWORK DETAIL
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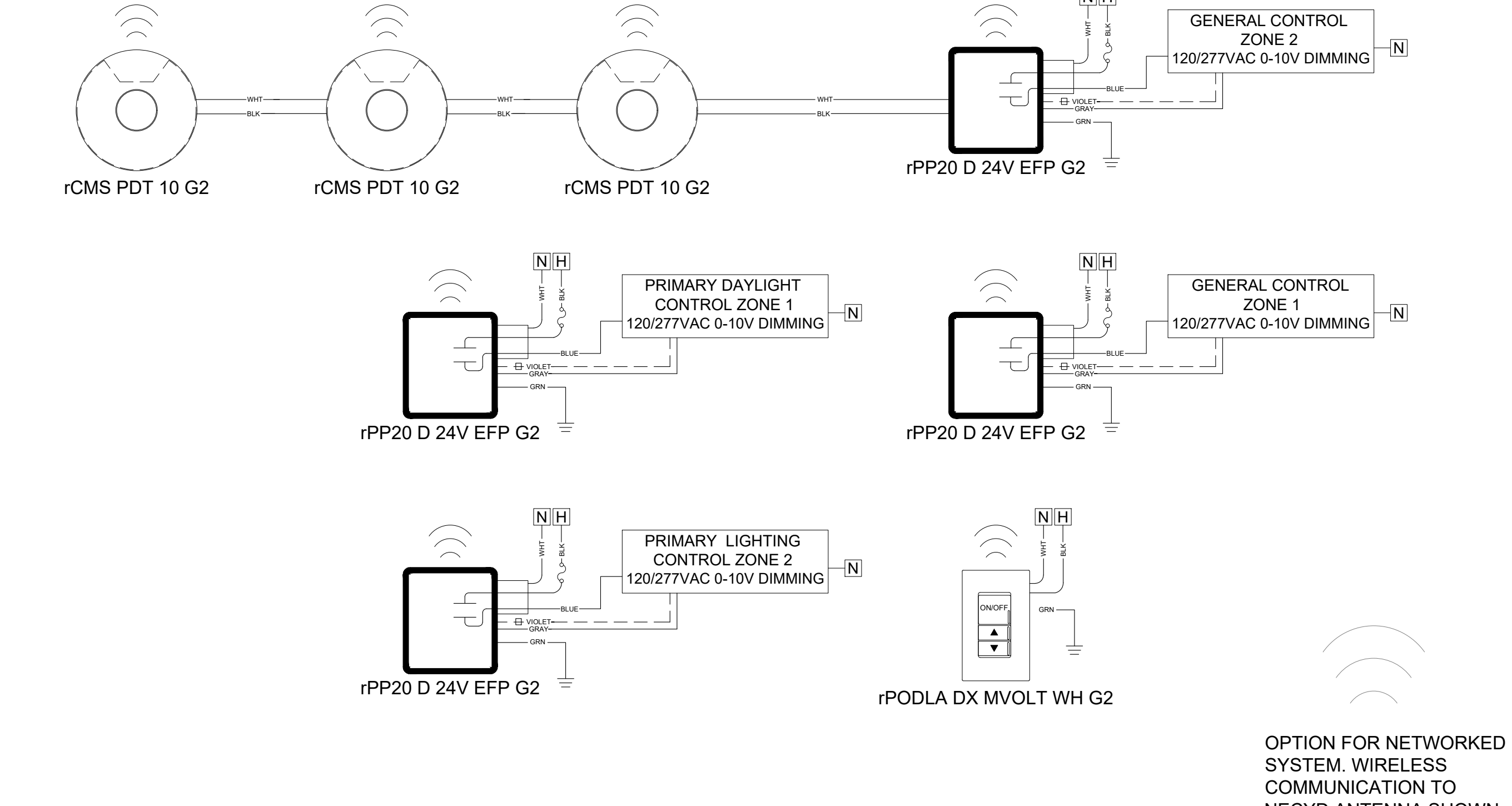
2 SEQUENCE OF OPERATION / BASIS OF DESIGN TABLE
N.T.S.



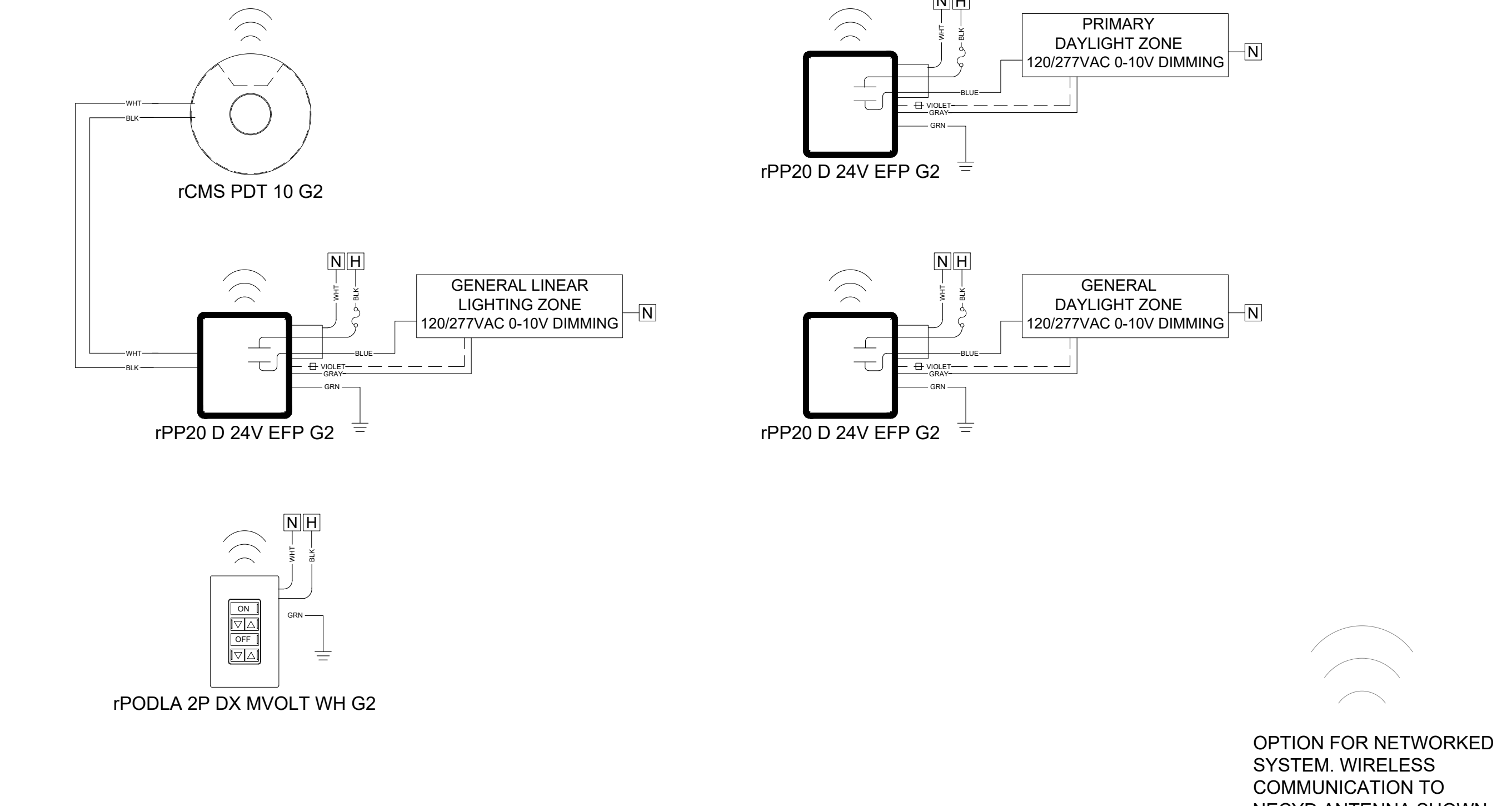
3 SMALL OFFICE DETAIL
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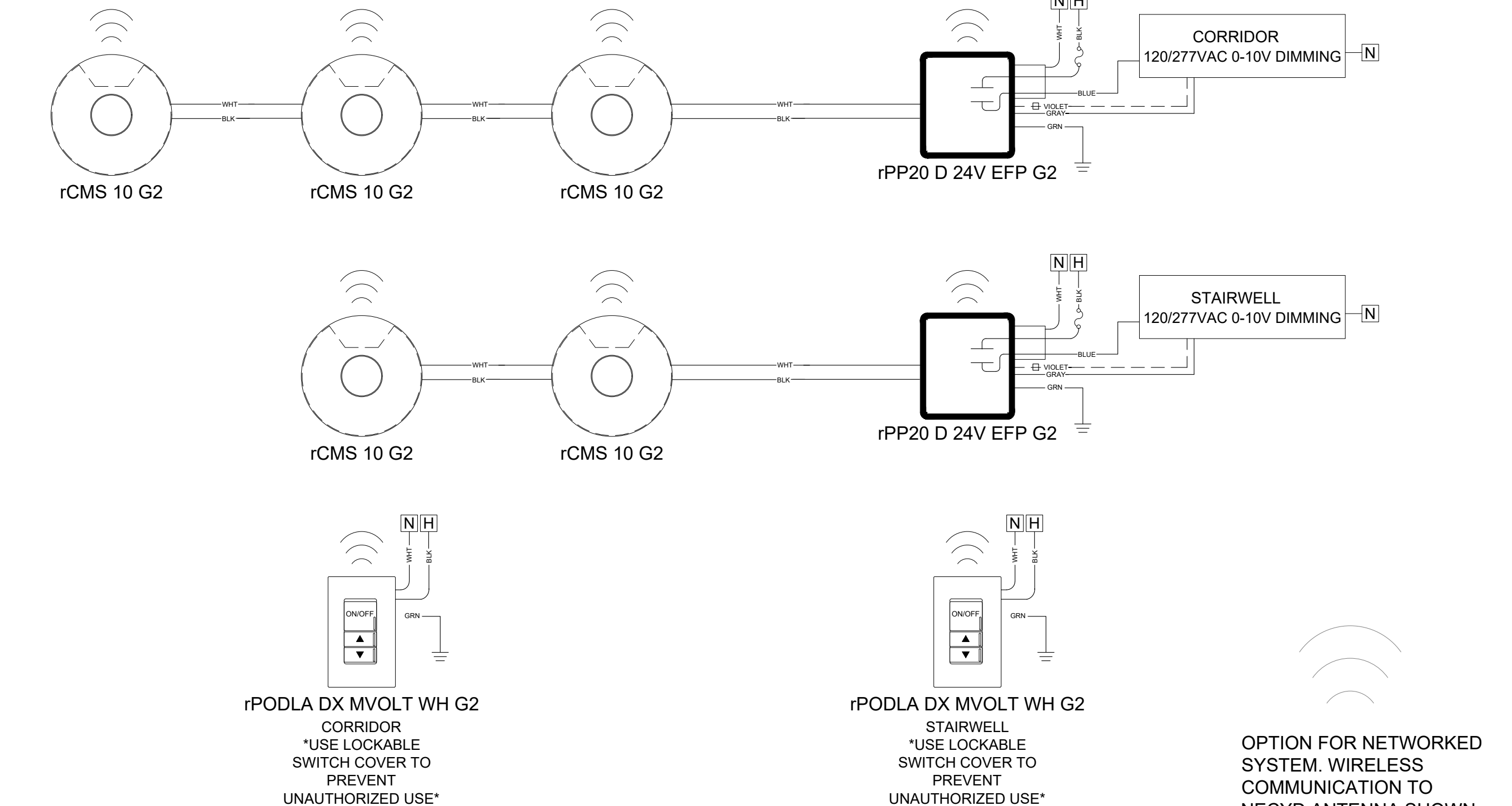
4 LARGE OFFICE (LESS THAN 300 SQUARE FEET) DETAIL
N.T.S.



5 OPEN OFFICE (GREATER THAN 300 SQUARE FEET) DETAIL
N.T.S.



6 CONFERENCE DETAIL
N.T.S.



7 CORRIDOR/STAIRWELL DETAIL
N.T.S.

IF BATTERY POWERED SENSORS ARE PREFERRED, CONTACT HILA FOR DETAILS AND/OR COMPLETE nLIGHT AIR BOM



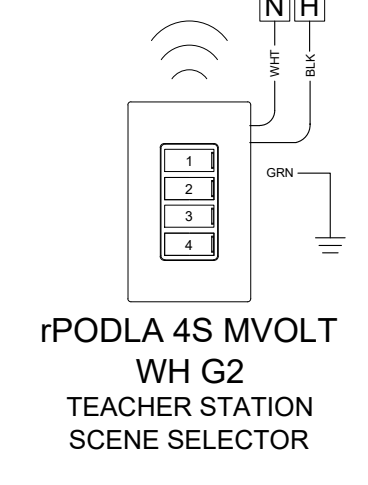
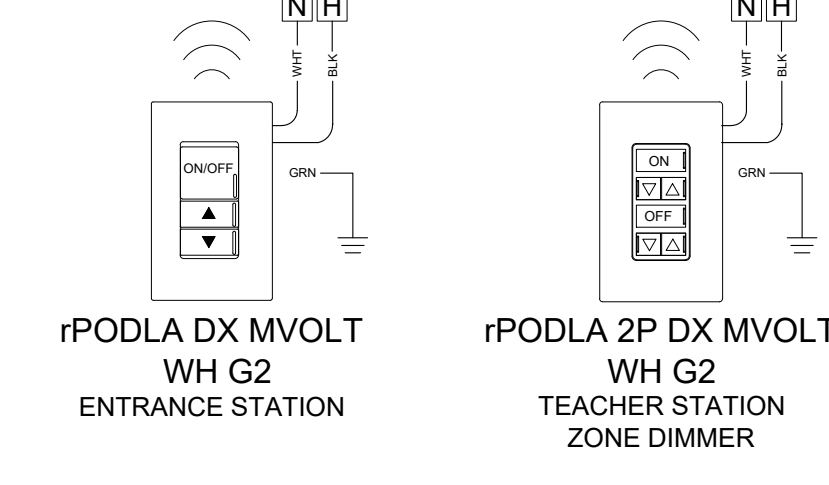
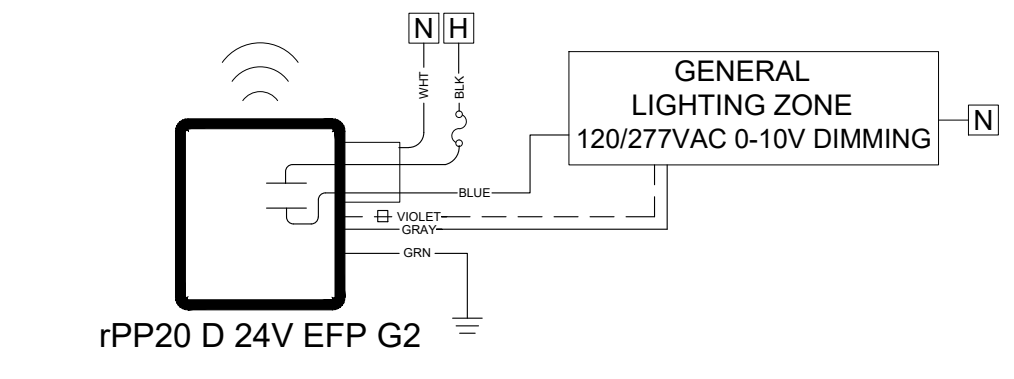
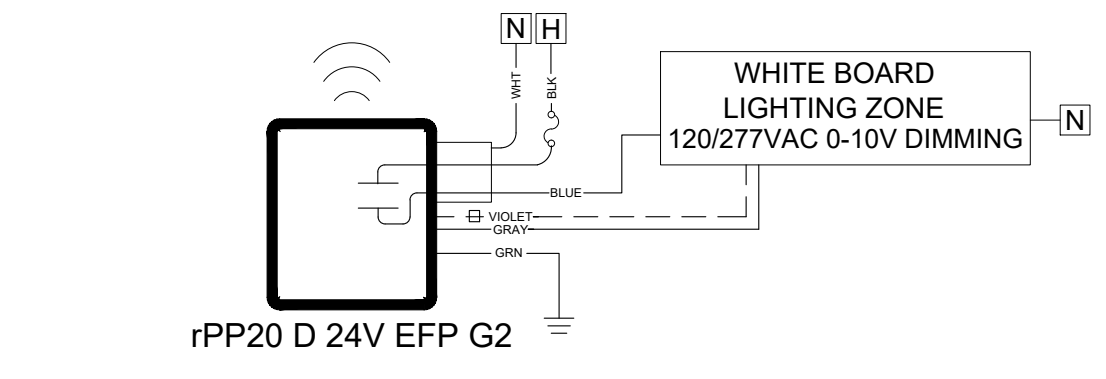
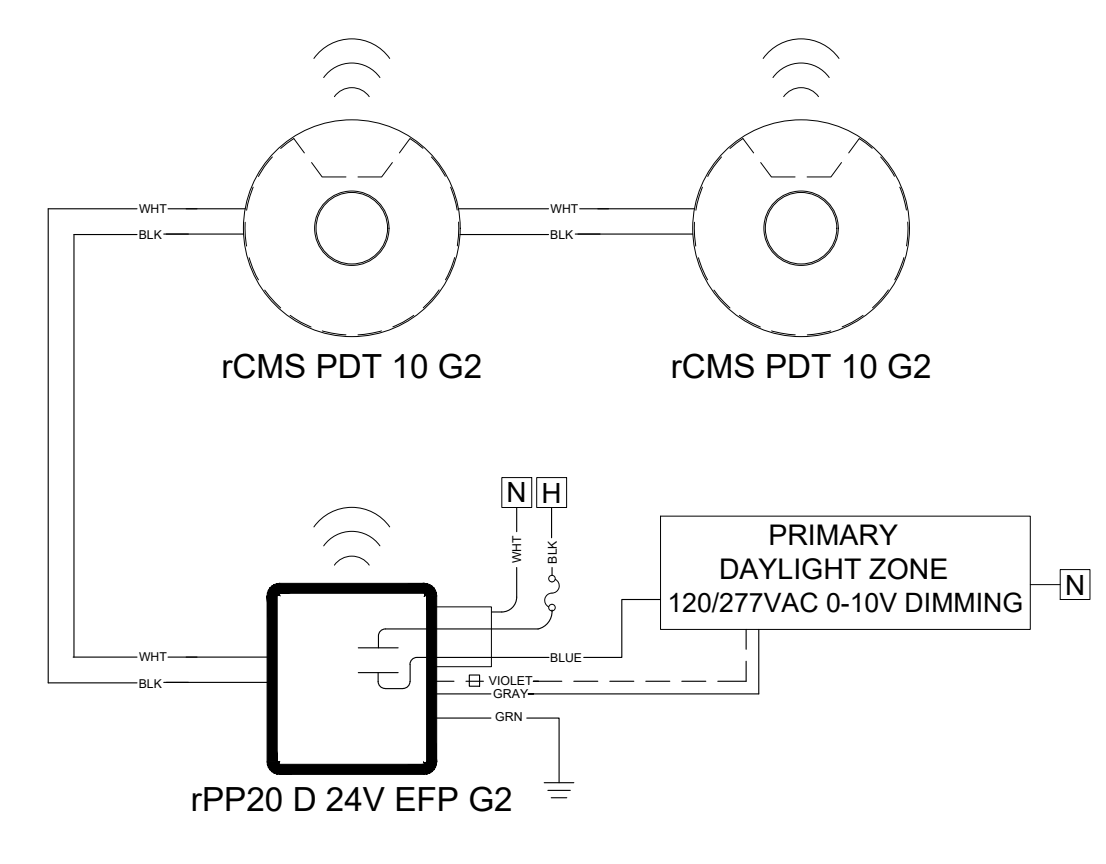
PROJECT NAME
CITY, STATE (PROVINCE)

DRAWING TYPE:
CONTROL LAYOUT (SUBMITTAL)

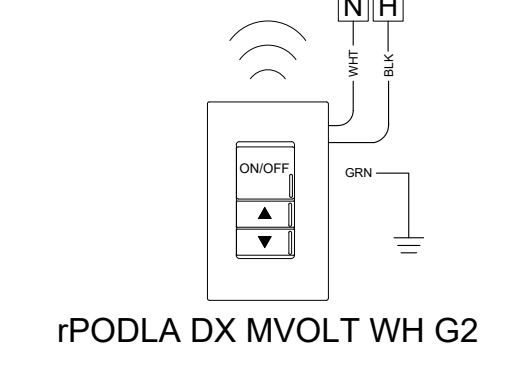
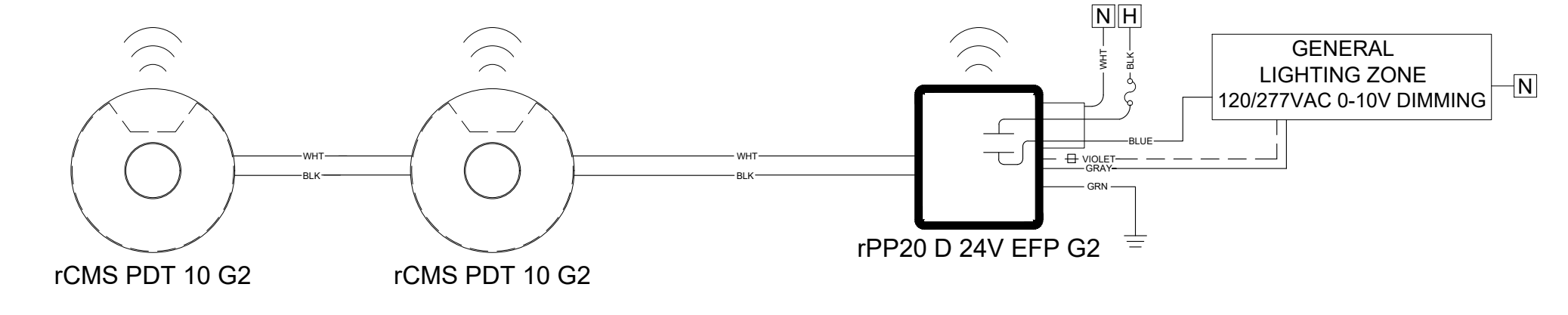
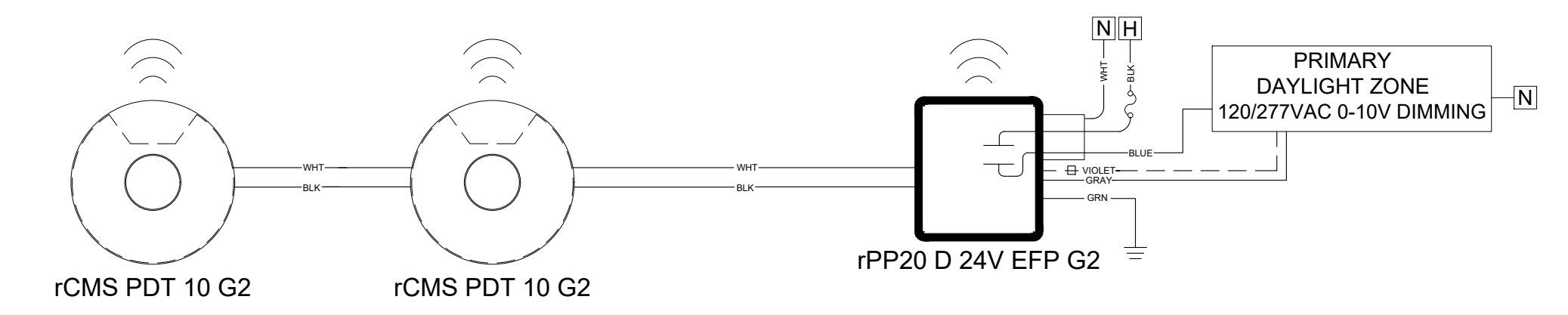
REV	DATE

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Drawn By: CMC
Quote #: XXXXX
DWG Ref:
Sheet: DETAILS (2)

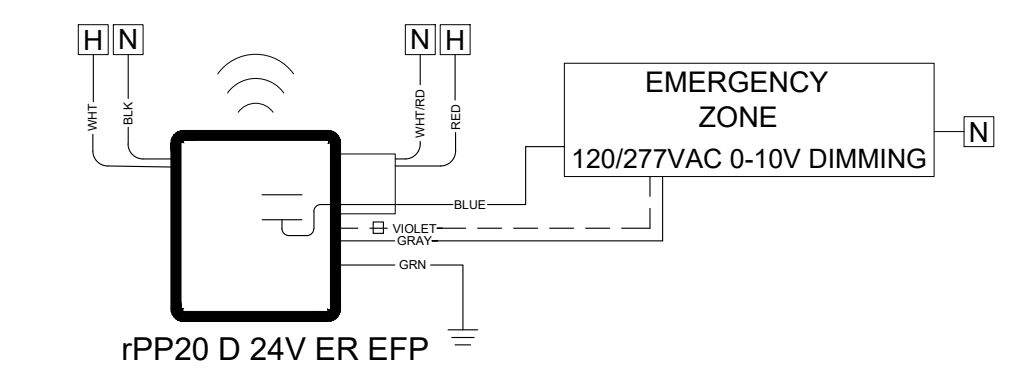
SCENE SELECTOR	
SCENES	LIGHTING LEVELS
1	100%
2	A/V MODE
3	25%
4	OFF



OPTION FOR NETWORKED SYSTEM. WIRELESS COMMUNICATION TO NECYD ANTENNA SHOWN ON DETAIL (1)



OPTION FOR NETWORKED SYSTEM. WIRELESS COMMUNICATION TO NECYD ANTENNA SHOWN ON DETAIL (1)

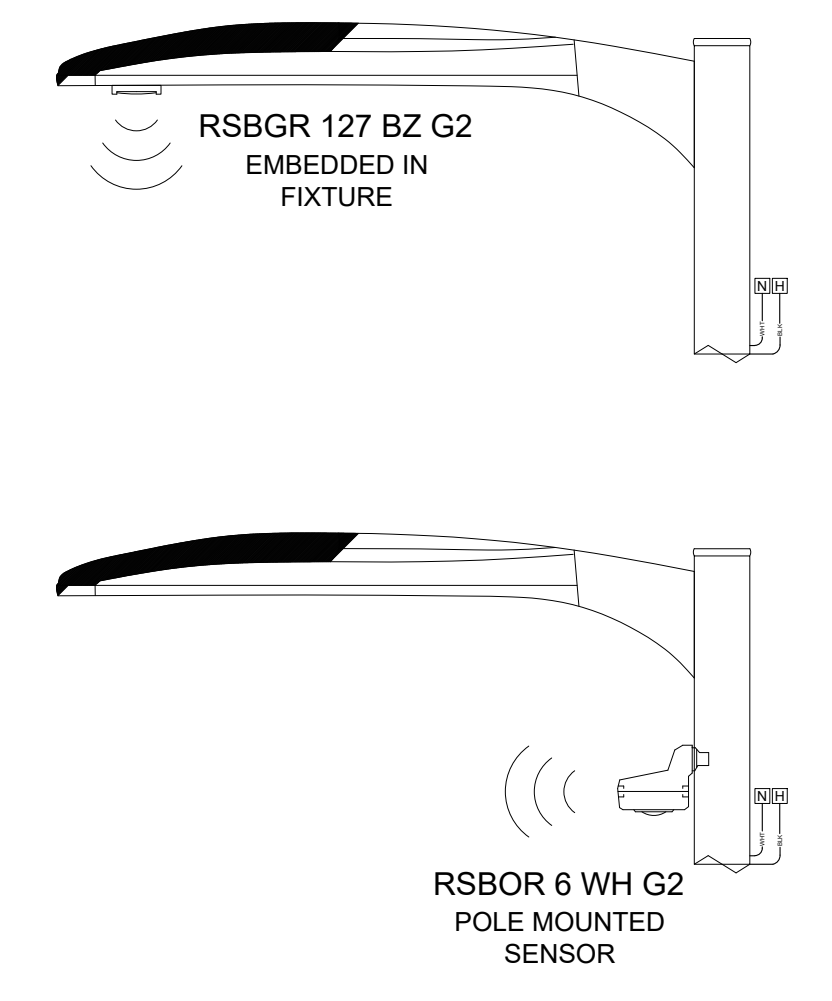
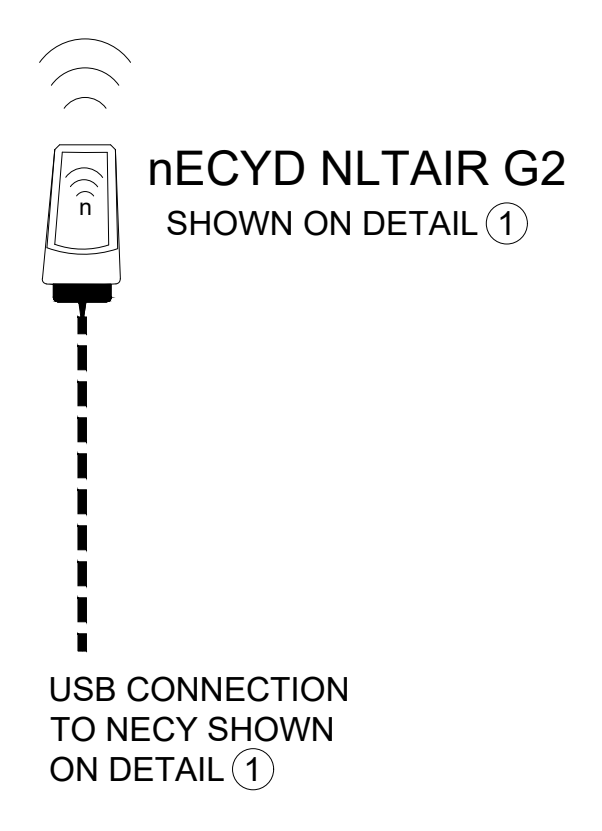


WIRELESS COMMUNICATION TO ADDITIONAL LIGHT DEVICES WITHIN SPACE

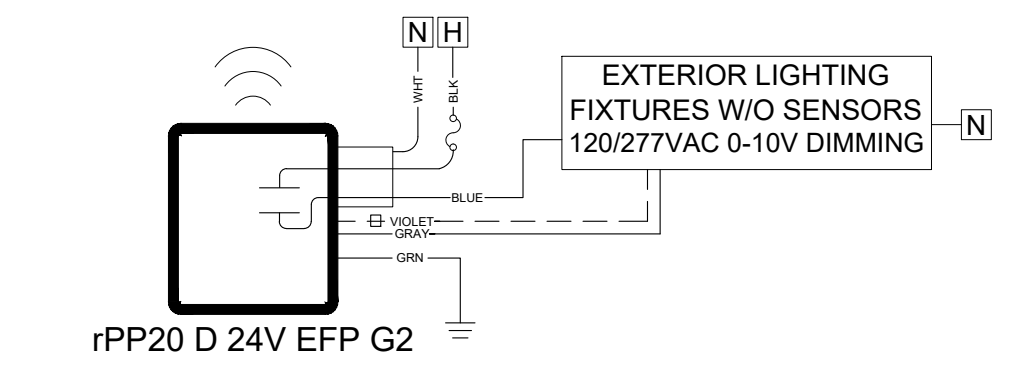
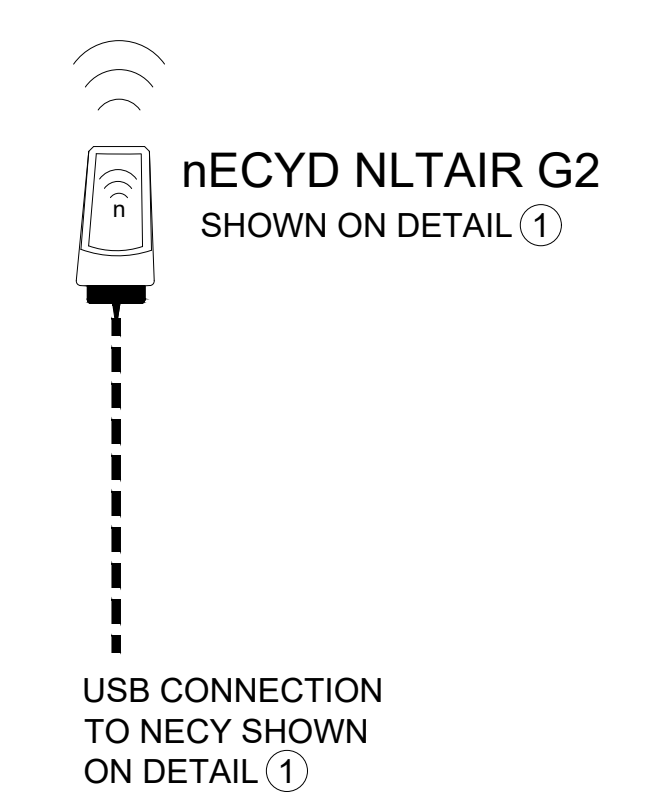
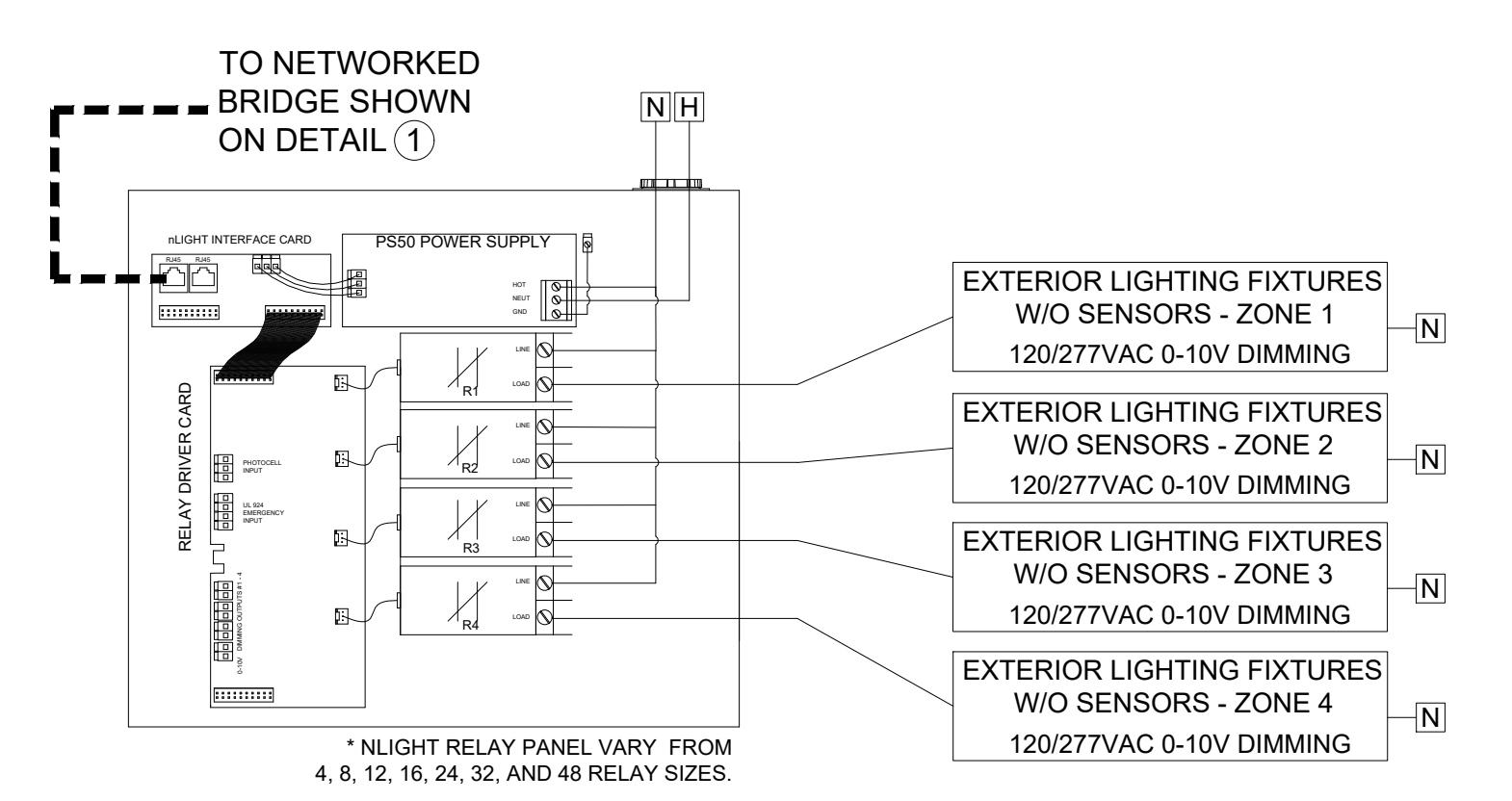
8 CLASSROOM DETAIL
N.T.S.

9 LAB DETAIL
N.T.S.

10 EMERGENCY POWERPACK TYPICAL
N.T.S.



WIRELESS COMMUNICATION TO NECYD ANTENNA SHOWN ON DETAIL (1)

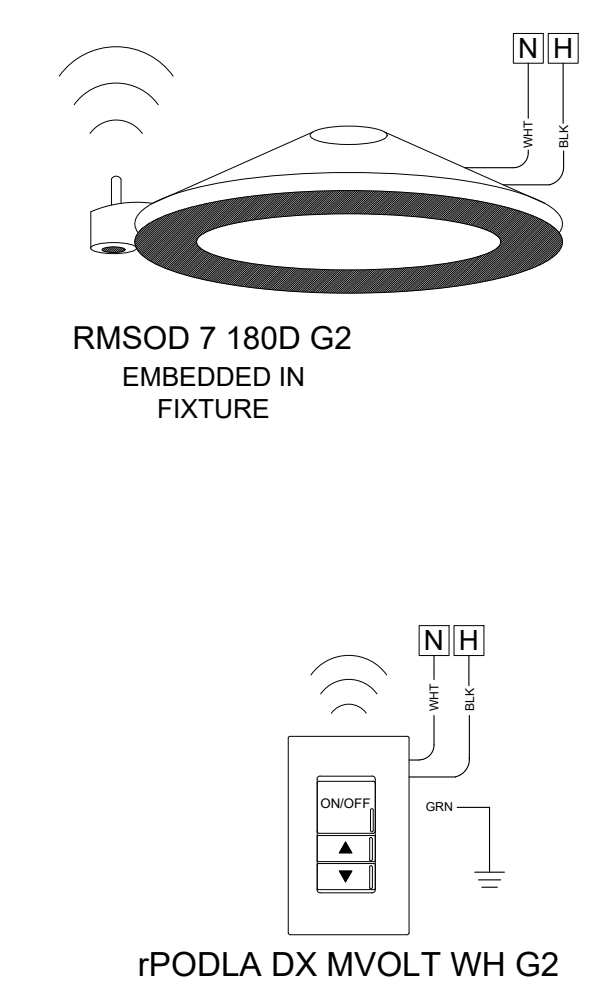
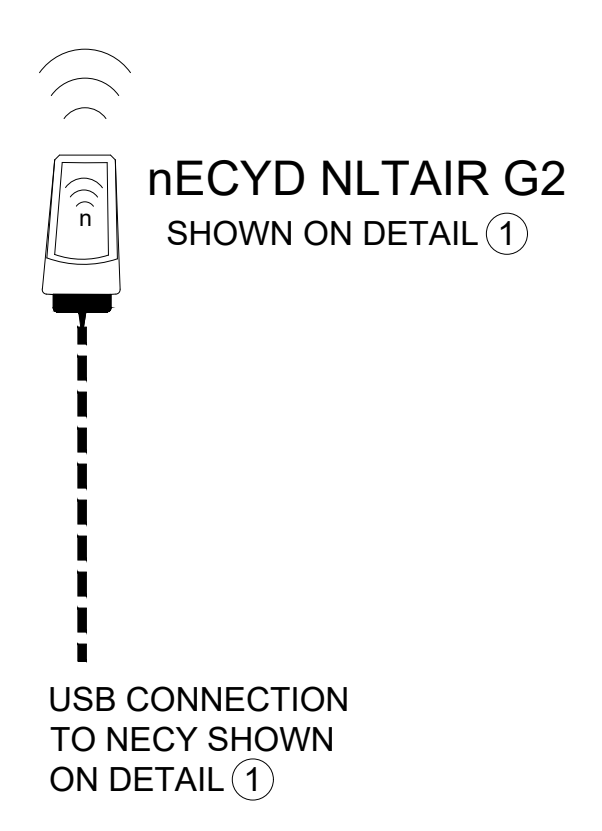


WIRELESS COMMUNICATION TO NECYD ANTENNA SHOWN ON DETAIL (1)

11 EXTERIOR DETAIL A
N.T.S.

12 EXTERIOR DETAIL B
N.T.S.

13 EXTERIOR DETAIL C
N.T.S.



WIRELESS COMMUNICATION TO NECYD ANTENNA SHOWN ON DETAIL (1)

14 GARAGE DETAIL
N.T.S.

IF BATTERY POWERED SENSORS ARE PREFERRED, CONTACT HILA FOR DETAILS AND/OR COMPLETE nLIGHT AIR BOM