REV DATE

Scale: NOT TO SCALE

Drawn By: Quote #: DWG Ref:

DETAILS

WALL SWITCH DAYLIGHT SENSOR TIME CLOCK OCCUPANCY SENSOR OFF ROOM TYPE BREAKROOMS/KITCHENS X X 100 7.5 10 10 CLASSROOMS X X 50 7.5 10 10 X CONFERENCE ROOMS X 50 7.5 10 10 COPY ROOMS X X 100 7.5 10 10 | X | CORRIDORS/STAIRWELLS 100 | 7.5 | 10 | 10 | X | X DAWN DUSK EXTERIOR 100 X | 100 | 17.5 | 10 | 20 MULTIPURPOSE ROOMS X 50 7.5 10 10 OPEN OFFICE AREAS > 300 SQ FT X | 100 | 7.5 | 10 | 10

NETWORK CONTROLLER INCLUDES THE FOLLOWING CAPABILITIES:

2. ASTRONOMICAL TIME CLOCK VIA SENSORVIEW SOFTWARE.

4. DEMAND RESPONSE READY DEVICE. AUTOMATIC DEMAND

5. SOFTWARE INTEGRATION FOR BACNET IP/MSTP BAS OR REST

6. SECURITY FIPS PUBLICATION 140-2, LEVEL 1 INSIDE COMPLIANT

CONFIGURABLE LOAD SHED DIMMING LEVELS THROUGH AN

API SYSTEMS. BACnet TESTING LABORATORIES LISTED B-BC.

3. ETHERNET PORT TO CONNECT TO LAN/WAN NETWORK.

RESPONSE (ADR) CLIENT THAT ALLOWS ACTIVATION OF

OpenADR 2.0a VIRTUAL END NODE.

SECURITY INTERFACE

TO ADDITIONAL nLIGHT DEVICES

REQUIRED OR AS INDICATED ON

AND/OR ENABLED FIXTURES IF

FLOOR PLANS

1. STANDALONE AND NETWORKED nLIGHT SYSTEM

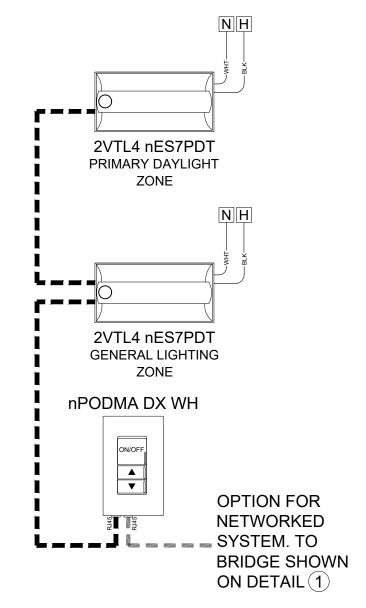
FUNCTIONALITY.

* 5 MINUTES BEFORE THE LIGHTING IS SCHEDULED TO TURN OFF, THE LIGHTS WILL TURN OFF FOR 1 SECOND AND THEN GO BACK TO IT'S PREVIOUS DIMMING LEVEL. THIS BLINK WARNING PREVENTS FALSE OFFS AND GIVES AUTHORIZED PERSONNEL A WARNING TO PRESS

** AUTOMATIC SCHEDULING CONTROLS SHALL BE CAPABLE OF LIGHTING SETBACK CONTROL IN ACCORDANCE TO C405.2.6.2 FOR

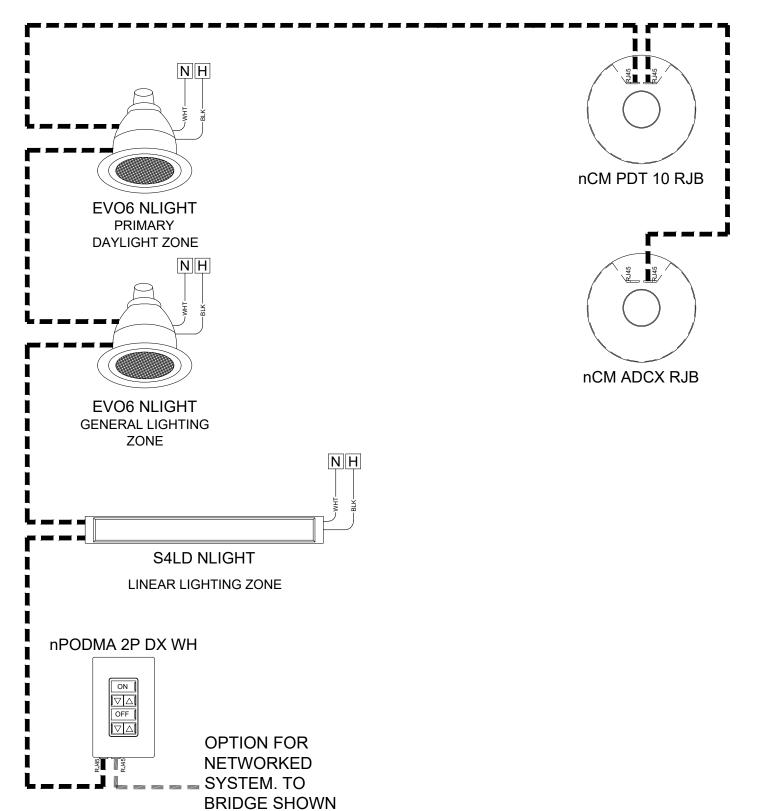
*** LIGHTING IN OPEN OFFICE AREAS GREATER THAN 300 SQUARE FEET, LIGHTING SHALL BE CONTROLLED SEPARATELY IN CONTROL ZONES NOT GREATER THAN 600 SQUARE. THE FIXTURES IN THE OCCUPIED CONTROL ZONES WILL BE ON AT 100% FULL BRIGHT AND THE FIXTURES IN THE UNOCCUPIED (AFTER 7.5 MINUTES OF NO DETECTED MOVEMENT) CONTROL ZONES WILL BE AT 20% FULL BRIGHT. IF ALL AREAS ARE

SEQUENCE OF OPERATION / BASIS OF DESIGN TABLE



4 LARGE OFFICE (LESS THAN 300 SQUARE FEET) DETAIL

N.T.S.



ON DETAIL (1)

6 CONFERENCE DETAIL

N.T.S.

PARKING GARAGE | 100 | 10 | 10 | 12.5 RESTAURANTS/STORES TBD TBD 100 | 10 | | X | X | RESTROOMS X | X | 100 | 7.5 | 10 | 10 XX OFFICES < 300 SQ FT X 50 7.5 10 10 STORAGE ROOMS > 100 SQ FT 100 | 7.5 | 10 | 10 WAREHOUSES 100 | 10 | 50 | 12.5 | TBD | TBD

WALL SWITCH TO ACTIVATE A 2-HOUR OVERRIDE. OWNER TO VERIFY TIME SCHEDULES.

DECORATIVE FIXTURES AND C405.6.2.3 FOR NON-DECORATIVE FIXTURES. UNOCCUPIED (AFTER 10 MINUTES OF NO DETECTED MOVEMENT IN ALL CONTROL ZONES) THEN THE LIGHTS WILL TURN OFF.

nECYD NLTAIR G2

nECY MVOLT ENC NW GFXK

CONNECTION TO LAN/WAN FOR

ADDITIONAL nECY CONTROLLERS

SENSORVIEW SOFTWARE, ADR (

AND/OR BAS INTEGRATION

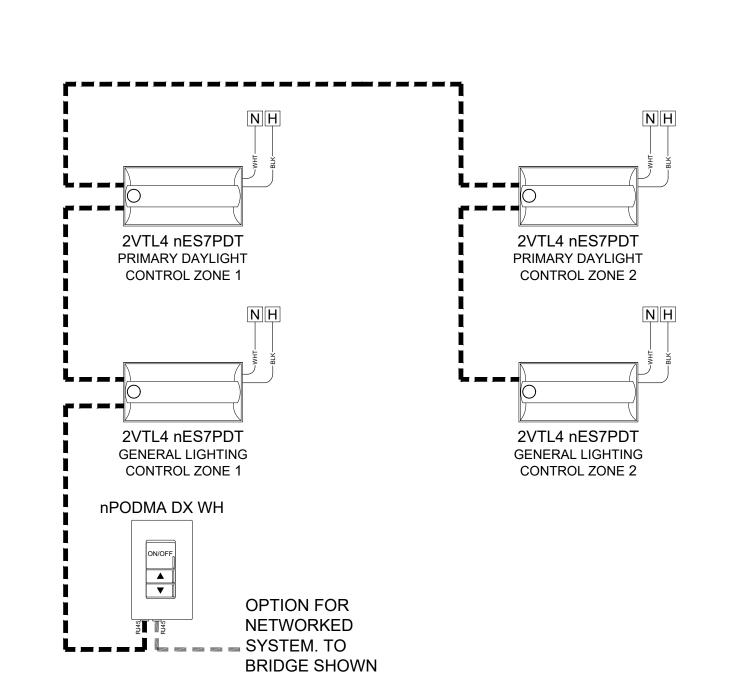
nPODMA DX WH

_____ 2VTL4 nES7PDT GENERAL LIGHTING ZONE **OPTION FOR NETWORKED** SYSTEM. TO **BRIDGE SHOWN**

ON DETAIL (1)

SMALL OFFICE DETAIL

N.T.S.



OPEN OFFICE (GREATER THAN 300 SQUARE FEET) DETAIL

N.T.S.

ON DETAIL (1)

2. DETAILS ARE DIAGRAMMATIC 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.

3. LIGHTING CONTROL SUBMITTALS FOR NETWORKED SYSTEM SHALL BE PROVIDED BY THE MANUFACTURER OR FACTORY

REPRESENATIVE AND SHALL INCLUDE THE FOLLOWING DOCUMENTS(NOT LIMITED TO FOLLOWING):

1. DETAILS AND DESIGN IS BASED ON AN nLIGHT LIGHTING

GENERAL NOTES:

CONTROLS SYSTEM.

3.1. SHOP DRAWINGS SHOWING QUANTITY AND LOCATION OF ALL DEVICES. 3.2. STANDALONE/NETWORK SINGLE LINE DIAGRAM. 3.3. BASIS OF DESIGN PROGRAMMING OPERATION FOR EACH ROOM TYPE.

3.4. DEVICE CUTSHEETS. 4. MANUFACTURER OR FACTORY REPRESENTATIVE TO INCLUDE STARTUP AND COMMISSIONING OF THE LIGHTING CONTROL SYSTEM. MUST INCLUDE A SITE VISIT FOR THE FOLLOWING:

4.1. A PRE-CONSTRUCTION MEETING TO CONFIRM DESIGN AND FIELD INSTALLATION REQUIREMENTS. 4.2. PROGRAMMING AND COMMISSIONING OF THE LIGHTING CONTROL SYSTEM TO MEET THE BASIS OF DESIGN AND IECC REQUIREMENTS.

4.3. MAINTENANCE / OWNER WALK THROUGH FOR MAKING FINAL ADJUSTMENTS TO PROGRAMMING. 5. CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING

CONTROL DEVICES, CABLES, ACCESSORIES AS REQUIRED BY MANUFACTURER'S RECOMMENDATION TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL COMPLIANT IECC SYSTEM. 6. CONTRACTOR SHALL TEST ALL LOW VOLTAGE NETWORK

CABLES IN THE FIELD TO THE VERIFICATION AND REQUIREMENTS BY THE MANUFACTURER PRIOR TO SYSTEM STARTUP.

7. ALL DEVICES SHALL BE MOUNTED AND INSTALLED IN ACCESSIBLE CEILING LOCATIONS. CONTRACTOR WILL VERIFY BEST FIT LOCATIONS IN THE FIELD.

8. CONTRACTOR TO VERIFY COMPATIBILITY BETWEEN DIMMING POWERPACKS AND INSTALLED FIXTURES.

9. CONTACT HILA FOR COMPLETE nLIGHT LIGHTING CONTROLS BOM, CONTROLS@HI-LTG.COM - PHONE # 808-683-9344.

IECC 2018 COMPLIANCE:

1. OCCUPANT SENSOR CONTROLS, SECTION C405.2.1

2. TIME-SWITCH CONTROLS, **SECTION C405.2.2**.

3. DAYLIGHT-RESPONSIVE CONTROLS, SECTION C405.2.3. 4. SPECIFIC APPLICATION CONTROLS, **SECTION C405.2.4**.

MANUAL CONTROLS, SECTION C405.2.5

6. EXTERIOR LIGHTING CONTROLS, **SECTION C405.2.6**.

7. ENHANCED DIGITAL LIGHTING CONTROLS, SECTION C406.4

8. FUNCTIONAL TESTING OF LIGHTING CONTROLS, SECTION C408.3 9. CONTACT HILA FOR COMPLETE nLIGHT LIGHTING CONTROLS BOM, CONTROLS@HI-LTG.COM - PHONE # 808-683-9344.

nLIGHT REST API SPECIFICATIONS:

ACUITY BRANDS SYSTEM - nLIGHT CONTROLLER SHALL BE COMPATIBLE WITH REST API OVER AN ENCRYPTED HTTPS CONNECTION. READ AND WRITE CONNECTION SHALL BE SECURABLE WITH A USERNAME/PASSWORD PAIR. PASSWORDS TO HAVE ADJUSTABLE COMPLEXITY TO COMPLY WITH CUSTOMER PASSWORD REQUIREMENTS

 WRITE ACCESS OF END DEVICES CONNECTED TO THE SYSTEM CONTROLLER SHALL BE MADE AVAILABLE THROUGH:

1.1. WRITE ACCESS SHALL INCLUDE COMMAND OF DEVICE-RELAY-STATE, DEVICE-DIM-LEVEL, GROUP-RELAY-STATE, AND GROUP-DIM-LEVEL.

1.2. GROUPING OF DEVICES FOR GROUP-RELAY-STATE AND GROUP-DIM-LEVEL WRITE ACCESS SHALL BE AUTOMATICALLY GENERATED BY THE SYSTEM CONTROLLER AND SHALL NOT REQUIRE CREATION BY THIRD PARTY SYSTEMS.

1.3. GROUP-RELAY-STATE AND GROUP-DIM-LEVEL RESPONSE TO REST API SHALL BE AVAILABLE WITHOUT REQUIRING MULTIPLE POST COMMANDS.

2. READ ACCESS OF END DEVICES (EMBEDDED nLIGHT FIXTURES) CONNECTED TO THE SYSTEM CONTROLLER SHALL BE MADE

2.1. READ ACCESS SHALL INCLUDE DEVICE-ONLINE/OFFLINE STATUS, DEVICE-OCCUPANCY-STATE, GROUP-OCCUPANCY-STATE, MEASURED-LIGHT-LEVEL, DEVICE-RELAY-STATE, DEVICE-DIM-LEVEL,

GROUP-RELAY-STATE, AND GROUP-DIM-LEVEL 2.2. GROUP OF DEVICES FOR GROUP-OCCUPANCY-STATE, GROUP-RELAY-STATE, AND GROUP-DIM-LEVEL READ ACCESS SHALL BE AUTOMATICALLY GENERATED BY THE SYSTEM CONTROLLER AND SHALL NOT REQUIRE CREATION

BY THIRD PARTY SYSTEMS. 3. CONTACT HILA SETUP OF REST API, CONTROLS@HI-LTG.COM -PHONE # 808-683-9344.

1. BACnet TESTING LABORATORIES (BTL) LISTED AS A BACnet BUILDING CONTROLLER (B-BC).

> 2. OPTIONAL AUTOMATIC DEMAND RESPONSE CLIENT OPTION ALLOWS ACTIVATION OF CONFIGURABLE LOAD SHED DIMMING LEVELS THROUGH AN OpenADR 2.0a VIRTUAL END NODE. REQUIRES OUTBOUND IP CONNECTION TO UTILITY DRAS. 3. ENHANCED SECURITY PROVIDED BY BOTH:

SPECIFICATIONS:

3.1. HTTPS SERVER 3.2. U.S. GOVERNMENT SECURITY STANDARD OF FEDERAL INFORMATION PROCESSING STANDARD (FIPS) PUBLICATION 140-2, LEVEL 1, INSIDE (VALIDATION CERTIFICATE PENDING).

LIGHTING CONTROLS LEGEND AND DESCRIPTIONS

LOW VOLTAGE

DS - nCM ADCX RJB

DP - nPP16 D EFP

NIPPLE MOUNTING

PCD - nPP PCD EFP

1-ZONE = S1 - nPODMA DX XX

2-ZONE = S2 - nPODMA 2P DX XX

4-ZONE = S4 - nPODMA 4P DX XX

2-SCENE = SS2 - nPODMA 4S DX XX

4-SCENE = SS4 - nPODMA 4S DX XX

GFXX - nPOD TOUCH XX

WS - nWSXA PDT LV DX XX

BUILDING MANAGEMENT SYSTEMS INTEGRATION

SUBSCRIPT REFERENCES ZONE OF CONTROL

16-ZONES AND 16-SCENES WITH DIMMING

LOW VOLTAGE SCENE SELECTOR WITH DIMMING

LOW VOLTAGE GRAPHIC TOUCHSCREEN CONTROLLER, INCLUDES

LOW VOLTAGE WALL SWITCH OCCUPANCY SENSOR WITH

ON/OFF/RAISE/LOWER, PASSIVE DUAL TECHNOLOGY (PDT)

PL - nPP20 PL

EXTENDED RANGE 360° SENSOR-CEILING MOUNT, LOW VOLTAGE,

4. THE INSTALLING CONTRACTOR WILL BE RESPONSIBLE FOR THE FOLLOWING WHEN INTEGRATING LIGHTING CONTROL SYSTEM

TO THE BUILDING MANAGEMENT SYSTEM: 4.1. PROVIDING A PHYSICAL CONNECTION FROM LIGHTING CONTROL SYSTEM TO BMS VIA BACnet I/P. 4.2. 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. 4.3. TO COORDINATE ONSITE MEETING WITH LIGHTING CONTROLS PROGRAMMER & BMS/CONTROLS CONTRACTOR. 5. CONTACT HILA FOR FOR INTEGRATION WITH BMS,

CONTROLS@HI-LTG.COM - PHONE # 808-683-9344.

SYSTEM OPERATIONS TRAINING OPTIONS, PER SECTION

1. 2-HOUR ONSITE OR REMOTE TRAINING.

2. 2-DAY IN PERSON OR REMOTE TRAINING @ HILA, AT CUSTOMER LOCATION, OR VIDEOCONFERENCING SOFTWARE. 3. VIDEO TRAINING GIVEN TO EVERYONE WHO PARTICIPATES IN

4. CONTACT HILA FOR TRAINING, CONTROLS@HI-LTG.COM - PHONE

THE 2-DAY IN PERSON OR REMOTE TRAINING.

GRAPHIC VISUALIZATION FLOORPLAN INTERFACES:

1. SYSTEM SHALL PROVIDE WEB-BASED VISUALIZATION INTERFACE THAT DISPLAYS GRAPHICAL FLOORPLANS.

2. GRAPHICAL FLOORPLAN SHALL OFFER THE FOLLOWING TYPES OF SYSTEM VISUALIZATION:

2.1. 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: 2.1.1. CONTROLS EMBEDDED LIGHT FIXTURES, CONTROLS DEVICES NOT EMBEDDED IN THE FIXTURES, DAYLIGHT SENSORS, OCCUPANCY SENSORS, WALL

CONTROLLERS, WIRE RELAY PANELS, AND GROUP 2.2. GROUP ONLY OPTION - A MASTER GRAPHIC OF THE ENTIRE BUILDING, BY FLOOR, SHOWING ONLY CONTROL GROUPS

SWITCH/DIMMERS, SCENE CONTROLLERS, NETWORK

RELAYS, NETWORK BRIDGES, CENTRALIZED SYSTEM

2.3. ALLOW FOR PAN AND ZOOM COMMANDS SO SMALLER AREAS CAN BY DISPLAYED ON A LARGER SCALE SIMPLY BY PANNING AND ZOOMING EACH FLOOR'S MASTER GRAPHIC.

2.4. A MOUSE CLICK ON ANY CONTROL DEVICE SHALL DISPLAY THE FOLLOWING INFORMATION (AS APPLICABLE): 2.4.1. THE DEVICE CATALOG NUMBER, THE DEVICE NAME AND CUSTOM LABEL, DEVICE DIAGNOSTIC INFORMATION, INFORMATION ABOUT THE DEVICE STATUS OR CURRENT CONFIGURATION AVAILABLE WITH AN

2.5. CUSTOMIZATION TOOLS INCLUDING WIDGET FOR DEVICE STATUSES AND OVERRIDING DIM LEVELS, HEAT MAP SHOWING DIM LEVEL OR OCCUPANCY, CALLOUTS, TOGGLES, AND WEATHER.

ADDITIONAL MOUSE CLICK

2.6. FEATURES INCLUDING SYSTEM SCHEDULING, ALARM MONITORING, REPORT CUSTOMIZATION, AND PLAYBACK. 3. CONTACT HILA FOR GRAPHIC VISUALIZATION FLOORPLAN

INTERFACES, CONTROLS@HI-LTG.COM - PHONE # 808-683-9344.

nPOD KEY WH 2VTL4 nES7 CORRIDOR ____ BLWP4 nES7 STAIRWELL nPOD KEY WH

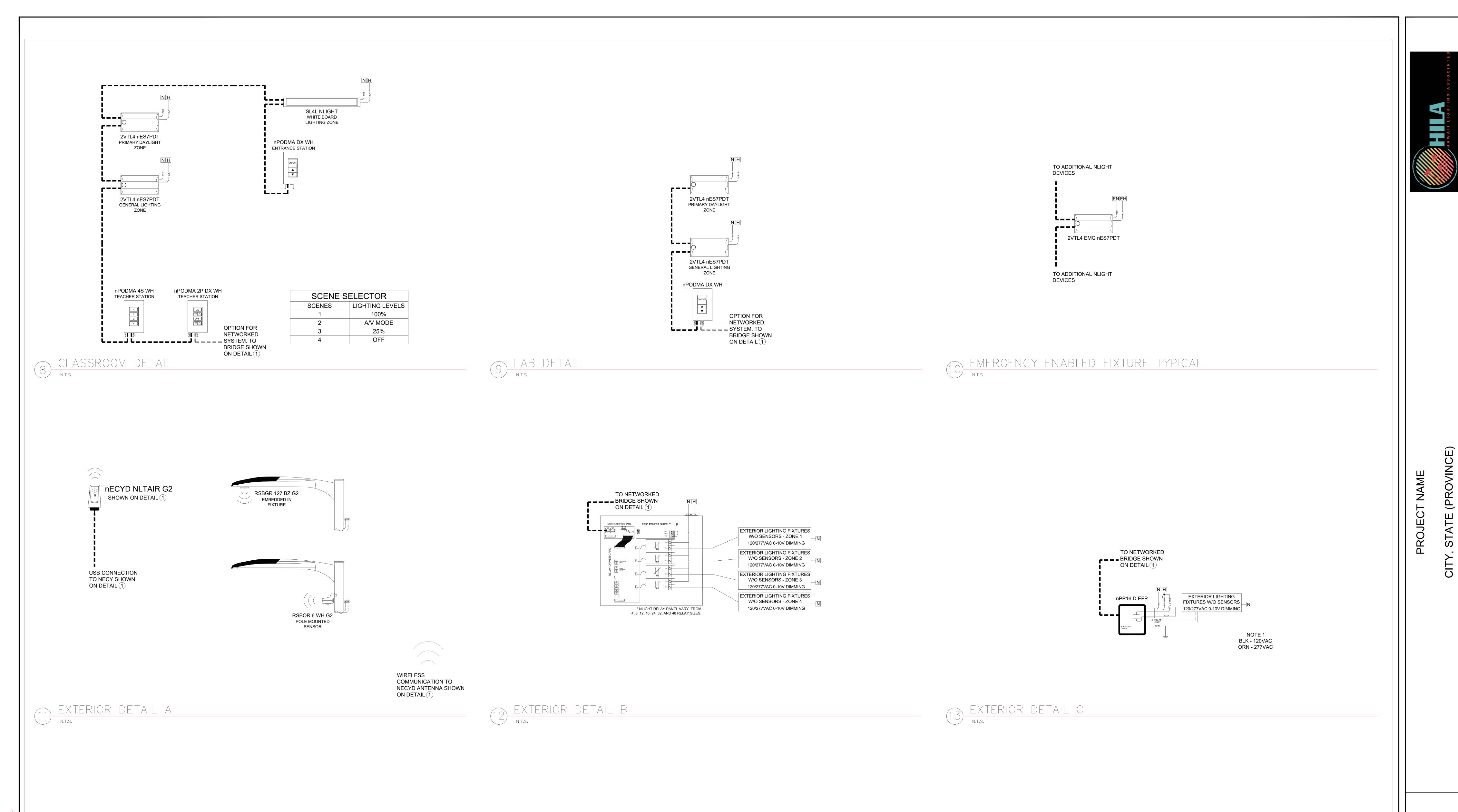
OPTION FOR

NETWORKED

ON DETAIL (1)

BRIDGE SHOWN

OCCURIDOR/STAIRWELL DETAIL



nECYD NLTAIR G2
SHOWN ON DETAIL 1

USB CONNECTION
TO NECY SHOWN
ON DETAIL 1

I PODBA DX WH G2

GARAGE DETAIL

N.T.S.



DRAWING CONTROL LAYOU

REV DATE

Date: XX/XX/2015

Scale: NOT TO SCALE

Drawn By: CNC

Quote #: XXXXX

Sheet: DETAILS (2)

DWG Ref: