TITLE PAGE

SLOT NUMBER: BX#E6475 JOB NUMBER: 2018-612

TITLE: Oncology Center Primary Care Additions

CITY: Sequim STATE: WA

BID DATE: 9/11/18 TIME: 3:00 PM

PLACE OF BID: Olympic Medical Center
939 Caroline Street
Port Angeles, WA 98362

PRIOR APPROVAL: 7 Days
COST ESTIMATE: $7,000,000
COMPLETION DATE:
LIQUID DAMAGES:
BUY AMERICAN:
PREVAILING WAGE: Prevailing Wage Rates Apply
DATE RECEIVED: 8/13/18

ARCHITECT: Coates Design Architects
900 Winslow Way E., Suite 210
Bainbridge Island, WA 98110
PHONE: 206-780-0876 Contact: Bob Miller Rhees
E-Mail: bob@coatesdesign.com

MECHANICAL ENGINEER: Sazan Group
600 Stewart Street, Suite 1400
Seattle, WA 98101
PHONE: 206-267-1700 Contact: Greg Boggie
E-Mail: gboggie@sazan.com

ELECTRICAL ENGINEER: Sazan Group
600 Stewart Street, Suite 1400
Seattle, WA 98101
PHONE: 206-267-1700 Contact: Niels Fallisgaard
E-Mail: nfallisgaard@sazan.com

REMARK: Work consists of additions of approximately 4,000 SF to the Oncology Center and 7,900 SF addition to The Primary Care building.

****TAKE-OFF IS BASED ON MATERIAL AVAILABLE FROM DESIGN AND SPECIFICATIONS PROVED BY THE ARCHITECTS AND ENGINEERS. WE ARE UNABLE TO ACCEPT ANY LIABILITY OR RESPONSIBILITY AS TO THE ACCURACY, COUNT, OR COMPATIBILITY, OF THE MATERIALS SHOWN FOR THE ABOVE PROJECTS.*

CUSTOM SURVEYS INC. 31811 PACIFIC HIGHWAY SOUTH, #B304, FEDERAL WAY, WA 98003
PHONE; 206-768-27700 E-MAIL: CARPENTER@CUSTOMSURVEYSINC.COM

6. **Utilities and runs.** The Bidder should assume that the exact locations of any underground or hidden utilities, underground fuel tanks, and any plumbing and electrical runs may be somewhat different from any location indicated in the surveys or Contract Documents.

7. **Division of Contract Documents.** The Contract Documents may be divided into parts, divisions, and sections for convenient organization and reference. Generally, there has been no attempt to divide the Specification sections into Work performed by the various building trades, any Work by separate contractors, or any Work required for separate facilities in of phases of the Project.

C SUBSTITUTIONS

1. **Standard.** The materials, products, procedures and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality that must be met by any proposed substitution.

2. **Substitution procedure.** No substitution will be considered prior to receipt of Bids unless the Architect receives a written request for approval on the Owner's Substitution Request form for the Project, with all data requested on the form completed, at least seven (7) days prior to the date for receipt of Bids. Each such request shall be submitted with a Request for Substitution form identical to or equivalent in content to the form found in the Project Manual, and shall include the name of the material or equipment proposed to be replaced and a complete description of the proposed substitute, including drawings, cuts, performance and test data, warranty information, and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or other Work that incorporation of the substitute would require shall be included. The proposer has the burden to prove the merit of the proposed substitute; by proposing the substitution, the Bidder represents that it has personally investigated the proposed material or product and determined that it is equal or better in all respects to that specified, that the same or better warranty will

be provided for the substitution, that complete cost data, including all direct and indirect costs of any kind, has been presented, that the Contract Time will not be increased, and that it will coordinate the installation of the substitute if accepted and make all associated changes in the Work. The Architect's decision to approve or disapprove a proposed substitution shall be final. Written requests for approval shall constitute a guarantee by the Bidder that the articles or materials are in all respects, including warranty and installation, equal or superior to those specified, unless otherwise noted. To the extent the proposed substitution will require additional services by the Architect or its consultants after Bid award, the Bidder, if successful, will be required to pay the Architect or its consultants for these services at their customary hourly rates.

3. **Addendum.** If the Architect approves a proposed substitution prior to receipt of Bids, the approval will be set forth in a written Addendum. Bidders shall not rely upon approvals made in any other manner. Substitution request forms returned by the Architect are a courtesy only, and Bidders/Sub-bidders shall rely solely on substitution approvals listed in an Addenda.

4. **Post-Bid substitutions.** After the Contract has been executed, the Owner and the Architect may consider a written request for the substitution of material or products in place of those specified in the Contract Documents only under the circumstances as specified therein.

D. ADDENDA

1. **Written.** All Addenda will be written. They will be mailed, emailed, faxed delivered, and/or posted electronically with notice to those the Architect knows to have received a complete set of Bidding Documents.

2. **Copies.** Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

3. **Verification and acknowledgment of receipt.** Prior to bidding, each Bidder shall ascertain that it has received all Addenda issued. Each Bidder shall acknowledge its receipt of all Addenda in its Bid.

1.4 BIDDING PROCEDURE

A. FORM AND STYLE OF BIDS

1. **Form.** Bids (including any required attachments) shall be submitted on forms identical to the form included with the Bidding Documents. No oral, email, or telephonic responses or modifications will be considered to be Bids.

2. **Entries on the Bid form.** All blanks on the Bid form shall be filled in by typewriter or manually in ink.

3. **Words and figures.** Where so indicated by the makeup of the Bid form, sums shall be expressed in both words and figures; in case of discrepancy between the two, *the amount written in figures shall govern and the words shall be used to determine any ambiguities in the figures.* Portions of the Bid form may require the addition of component bids to a total or the identification of component amounts within a total. In case of discrepancy between component amounts listed and their sum(s), the component amounts listed shall govern.

4. **Initial changes.** Any interlineation, alteration or erasure must be initialed by an authorized representative of the Bidder.

5. **Alternates and Unit Prices.** All requested Alternates and unit prices should be bid. The Owner reserves the right, but is not obligated, to reject any Bid on which all requested Alternates or unit

SECTION 016000 – PRODUCT REQUIREMENTS:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. General product requirements.
B. Transportation, handling, storage and protection.
C. Product option requirements.
D. Substitution limitations and procedures.
E. Spare parts and maintenance materials.

1.2 RELATED SECTIONS

A. Section 00 21 13 - Instructions to Bidders.
B. Section 01 33 00 - Submittal Procedures.
C. Section 01 60 50 - Substitution Request Form: Form to be completed and submitted to Architect for pre-bid and post-bid substitution requests.

1.3 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
B. Shop Drawing Submittals: Prepared specifically for this Project.
C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
    1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.
D. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

PART 2 PRODUCTS

2.1 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

2.2 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.3 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Provide spare parts, maintenance, and extra products of types and in quantities specified in individual specification sections.
B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.1 SUBSTITUTION PROCEDURES

A. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

B. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension which may subsequently become apparent.
   5. Will reimburse Owner and Owner's Consultants for review or redesign services associated with re-approval by authorities.

C. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

D. Substitution Submittal Procedure:
   1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
   2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
   3. The Owner's Project Manager will notify Contractor in writing of decision to accept or reject request.

3.2 APPROVAL OF ALTERNATIVE & SUBSTITUTE MATERIALS AND PRODUCTS

A. General: If a bidder or the Contractor desires approval of some material or product other than that specified, it may submit a written request for approval of the alternate or substitute item in accordance with the requirements of this Article.
   1. All approvals are at the discretion of the Owner and its consultants.
   2. Substitution Requests will not be considered unless submitted in accordance with this Article.
   3. Substitution Requests will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

B. Requests for Approval: Every request for approval of alternative or substitute materials or products shall be accompanied by its reference in the Contract Documents and complete catalog, technical and other information and, if applicable, samples showing comparison of physical and other pertinent characteristics as required to establish equivalence or acceptability for the proposed application.
   1. Where specific test results are required by the Contract Documents, the comparison data for the proposed item shall be based upon the same test methods as those specified, or be correlated to clearly demonstrate comparability.

C. **During Bid Period**: Submit written requests on the Substitution Request Form in Section 01 60 50 for approval of alternative materials or products.
   1. **All requests must be received by the Owner's Project Manager not later than ten (10) days prior to scheduled time for receipt of bids in order to receive consideration.**
   2. Bidders will be informed by addendum of additional materials and products approved for use.
   3. No other form of approval will be given during the bid period and bidders shall not rely upon any approval not incorporated into the documents in this manner.
   4. A request for substitution during the Bid Period constitutes a representation that the submitter:
      a. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
      b. Will provide the same warranty for the substitution as for the specified product.
      c. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
      d. Waives claims for additional costs or time extension which may subsequently become apparent.

D. **After Receipt of Bid**: Submit written requests on the Substitution Request Form in Section 01 60 50 for approval of alternative materials or products. Requests for approval of substitute materials or products will not be considered except under one or more of the following conditions. With their request, the Contractor shall indicate which condition it believes applies:
   1. Unavailability: A substitution is required because the specified item is not available due to factors beyond the control of the Contractor.
   2. Unsuitability: Subsequent information or changes disclose inability of the specified item to perform as intended.
   3. Regulatory requirements: Final interpretation of Code, regulatory requirements, safety requirements, or insurance requirements necessitates a change due to inability of the specified item to conform.
   4. Warranty: Manufacturer or fabricator cannot certify or warrant performance of specified item as required.
   5. Owner's benefit: In the judgment of the Owner's Project Manager, acceptance of the proposed substitution is clearly in the Owner's best interest because of cost, quality, or other consideration. In requesting a substitution under this clause, the Contractor shall furnish substantiation of any such reason.

   A request for substitution after receipt of Bid constitutes a representation that the submitter:
      a. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
      b. Will provide the same warranty for the substitution as for the specified product.
      c. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
      d. Waives claims for additional costs or time extension which may subsequently become apparent.

e. Will reimburse Owner and its Consultants for review or redesign services associated with re-approval by authorities.

E. Redesign and Coordination: In making request for approval of alternative or substitute materials, the Bidder/Contractor agrees to the following.
   1. Bidder/Contractor will coordinate all trades including changes thereto as may be required.
   2. Bidder/Contractor waives all claims for additional costs which subsequently become apparent as a consequence of the substitution
   3. Bidder/Contractor will bear all costs related thereto, including costs of Owner's Consultants' services for redesign if deemed necessary.

END OF SECTION 016000

SECTION 016050 – SUBSTITUTION REQUEST FORM:

SUBSTITUTION REQUEST FORM
RE: SUBMITTAL NO.

We hereby submit for consideration, the following product instead of specified item for above project:
SECTION PARAGRAPH SPECIFIED ITEM

_____

Proposed substitution:_____

_____

Attach complete dimensional information and technical data, including laboratory tests, if applicable. Include complete information on changes to Drawings and Specifications that proposed substitution will require for its proper installation.
Submit with request all necessary samples and substantiating data to prove equal quality, performance, and appearance to-that specified. Indicate laboratory tests, if applicable. Clearly mark Manufacturer's literature to indicate equality in performance. Indicate differences in quality of materials and construction.
Fill in Blanks Below:
Does the substitution affect dimensions shown on Drawings? Yes_____ No_____ If yes, clearly indicate changes.

Will the undersigned pay for change to the building design, including engineering and detailing costs caused by the requested substitution?:

What affect does substitution have on other trades, other contracts, and contract completion date?:

What affect does substitution have on applicable code requirements?

Difference between proposed substitution and specified item?:

Manufacturer's guarantees of the proposed and specified items are: Same ____Different _____(explain)

List the names and addresses of 3 similar projects on which product was used, date of installation, and Architect's name and address:

What is the approximate delivery time from approval of shop drawings?

What are differences in maintenance procedures?
Are spare parts and maintenance available in U.S.A.? _____Where? (For equipment submittals)

Cost impact:

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

Undersigned attests function and quality equivalent or superior to specified items.

Submitted By:

Signature_____

Firm:

Address:

Telephone:

Signature must be by person having authority to legally bind his/her firm to the above term.

****

For Use by Owner:

Accepted_____

Not Accepted_____

Accepted as Noted Received Too Late_____

Received Too Late_____

END OF SECTION 016050

SECTION 004213 – BID FORM:

Bids Due: September 11, 2018
Eric Lewis, Chief Executive Officer
939 Caroline Street
Port Angeles, WA 98362

Proposal For
Olympic Medical Center
Oncology Center / Primary Care Additions
The undersigned, having carefully examined all of the Contract Documents, the site of the proposed Work, and being familiar with all of the conditions relating to the Work of the proposed project, including the availability of materials and labor, hereby proposes to furnish, within the requirements of the schedule for completion of the Work of the Project, including all labor, supervision, materials, services, equipment and warranties required for the construction or modification of the Work as indicated for the Oncology Center Addition, and to perform all Work in accordance with the Contract Documents for the stipulated sum of:

1.1 TOTAL BASIC BID

_____

_____DOLLARS

(_____)

Basic bid does not include Washington State Sales Tax.

1.2 TIMES FOR COMMENCEMENT AND COMPLETION

The undersigned hereby agrees to substantially complete all of the Work under the Base Bid pursuant to the terms of the contract in **360 calendar days** from Notice to Proceed.

ADDENDUM RECEIPT

Receipt of the following addenda to the Contract Documents is acknowledged:

Addendum No. 1_____Date_____
Addendum No. 2_____Date_____
Addendum No. 3_____Date_____

A. 1.3 NOTIFICATION

If written notice of acceptance of this bid is mailed, telegraphed or delivered to the undersigned within the time limit noted in the Instructions to Bidders after the date of bid opening, or any time thereafter before this bid is withdrawn, the undersigned will, within ten (10) days after the date of such mailing, telegraphing or delivering of such notice, execute and deliver a Contract on the Forms set forth in the Bid Documents to the Owner, together with a satisfactory Performance Bond and a satisfactory Labor and Material Payment Bond in the forms currently issued by the American Institute of Architects (or prior approved equivalent) each in an amount equal to one hundred percent (100%) of the contract sum (including Washington State Sales Tax).

The undersigned hereby designates as his office address, to which such notice of acceptance may be mailed or delivered.

1.5 BID SECURITY

Enclosed is a Bid Bond, certified check or cashier's check in the amount shown below which is at least 5% of the total bid.

_____DOLLARS
(_____)

1.6 LABOR AND INDUSTRIES FEES

In compliance with WAC 296-127 Contractor(s) shall pay to the Department of Labor and Industries required fee with each Statement of Intent to Pay Prevailing Wages or Affidavit of Wages Paid submitted to that department for certification and these costs shall be included in their bid.

NAME OF FIRM:_____
SIGNED BY:_____
OFFICIAL CAPACITY:_____
ADDRESS:_____
CITY AND STATE:_____ZIP:_____

DATE:_____
TELEPHONE: _____
FAX: _____
TAX I.D.#: _____

STATE OF WASHINGTON CONTRACTOR'S LICENSE NO.: _____
NOTE: If bidder is a corporation, write State of Incorporation; if a partnership, give full names and addresses of all parties below.

CAUTION: Do not include any bids for other work in the envelope.

CCPHD RESERVES THE RIGHT TO REJECT ANY BID OR ALL BIDS AND TO WAIVE ANY INFORMALITY OR IRREGULARITY IN ANY BID. ANY CONTRACT AWARDED WILL BE LET TO THE LOWEST RESPONSIVE AND RESPONSIBLE BIDDER.

END OF SECTION 004213

SECTION 260923 - LIGHTING CONTROL DEVICES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Occupancy sensors.

B. Outdoor motion sensors.

C. Time switches.

D. In-wall time switches.

E. Outdoor photo controls.

F. Daylighting controls.

G. Lighting contactors.

H. Control accessories.

1.2 RELATED REQUIREMENTS

A. Section 260529 - Hangers and Supports for Electrical Systems.

B. Section 260533.16 - Boxes for Electrical Systems.

C. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

D. Section 262726 - Wiring Devices: Devices for manual control of lighting, including wall switches, wall dimmers, and fan speed controllers.

1. Includes finish requirements for wall controls specified in this section.

E. Section 265100 - Interior Lighting.

F. Section 265600 - Exterior Lighting.

1.3 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2010.

C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.

D. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts; 2000 (R2005), with errata, 2008.

E. NEMA ICS 5 - Industrial Control and Systems: Control Circuit and Pilot Devices; 2000 (R2010).

F. NEMA ICS 6 - Industrial Control and Systems: Enclosures; 1993 (R2011).

G. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

H. UL 773A - Nonindustrial Photoelectric Switches for Lighting Control; Current Edition, Including All Revisions.

I. UL 916 - Energy Management Equipment; Current Edition, Including All Revisions.

J. UL 917 - Clock-Operated Switches; Current Edition, Including All Revisions.

K. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.

L. UL 60947-1 - Low-Voltage Switchgear and Controlgear - Part 1: General Rules; Current Edition, Including All Revisions.

M. UL 60947-4-1 - Low-Voltage Switchgear and Controlgear - Part 4-1: Contactors and Motor-starters - Electromechanical Contactors and Motor-starters; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.

2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.

3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage installed under other sections or by others.

4. Coordinate the placement of photo sensors for daylighting controls with windows, skylights, and luminaires to achieve optimum operation. Coordinate placement with ductwork, piping, equipment, or other potential obstructions to light level measurement installed under other sections or by others.

5. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

B. Sequencing:

1. Do not install lighting control devices until final surface finishes and painting are complete.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.

1. Occupancy Sensors: Include detailed motion detection coverage range diagrams.

C. Shop Drawings:

1. Occupancy Sensors: Provide lighting plan indicating location, model number, and orientation of each occupancy sensor and associated system component.

2. Daylighting Controls: Provide lighting plan indicating location, model number, and orientation of each photo sensor and associated system component.

D. Field Quality Control Reports.

E. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

F. Operation and Maintenance Data: Include detailed information on device programming and setup.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

H. Project Record Documents: Record actual installed locations and settings for lighting control devices.

1.6 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.7 DELIVERY, STORAGE, AND PROTECTION

A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.8 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.9 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide five year manufacturer warranty for all occupancy sensors.

C. Provide two year manufacturer warranty for all daylighting controls.

PART 2 PRODUCTS

2.1 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled as suitable for the purpose intended.

B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.

2.2 OCCUPANCY SENSORS

A. Basis of Design: Wattstopper.

B. Manufacturers:

1. Hubbell Building Automation, Inc: www.hubbellautomation.com
2. Lutron Electronics Company, Inc: www.lutron.com/sle.
3. Sensor Switch Inc: www.sensorswitch.com.
4. WattStopper: www.wattstopper.com.
5. Substitutions: See Section 016000 - Product Requirements.
6. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

C. All Occupancy Sensors:

1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
2. Sensor Technology:
    a. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.
5. Dual Technology Occupancy Sensors: Field configurable turn-on and hold-on activation with settings for activation by either or both sensing technologies.
6. Turn-Off Delay: Field adjustable, with time delay settings up to 30 minutes.
7. Sensitivity: Field adjustable.
8. Adaptive Technology: Field selectable; capable of self-adjusting sensitivity and time delay according to conditions.
9. Integral Photocell: For field selectable and adjustable inhibition of automatic turn-on of load when ambient lighting is above the selected level.
10. Compatibility (Non-Dimming Sensors): Suitable for controlling incandescent lighting, low-voltage lighting with electronic and magnetic transformers, fluorescent lighting with electronic and magnetic ballasts, and fractional motor loads, with no minimum load requirements.
11. Load Rating for Line Voltage Occupancy Sensors: As required to control the load indicated on the drawings.
12. Isolated Relay for Low Voltage Occupancy Sensors: SPDT dry contacts, ratings as required for interface with system indicated.

D. Wall Switch Occupancy Sensors:
    1. All Wall Switch Occupancy Sensors:
        a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
        b. Unless otherwise indicated or required to control the load indicated on the drawings, provide line voltage units with self-contained relay.

c. Where indicated, provide two-circuit units for control of two separate lighting loads, with separate manual controls and separately programmable operation for each load.

d. Operation: Field selectable to operate either as occupancy sensor (automatic on/off) or as vacancy sensor (manual-on/automatic off).

e. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.

f. Finish: Match finishes specified for wiring devices in Section 262726, unless otherwise indicated.

2. Passive Infrared/Ultrasonic Dual Technology Wall Switch Occupancy Sensors: Capable of detecting motion within an area of 900 square feet.

E. Wall Dimmer Occupancy Sensors:

1. General Requirements:

a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated dimming control capability , and no leakage current to load in off mode.

b. Operation: Field selectable to operate either as occupancy sensor (automatic on/off) or as vacancy sensor (manual-on/automatic off).

c. Manual-Off Override Control Capability: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.

d. Dimmer: Solid-state with continuous full-range even control following square law dimming curve, integral radio frequency interference filtering, power failure preset memory, air gap switch accessible without removing wall plate, and listed as complying with UL 1472; type and rating suitable for load controlled.

e. Provide field adjustable dimming preset for occupied state.

f. Finish: Match finishes specified for wiring devices in Section 262726, unless otherwise indicated.

2. Passive Infrared (PIR) Wall Dimmer Occupancy Sensors: Capable of detecting motion within an area of 900 square feet.

F. Ceiling Mounted Occupancy Sensors:

1. All Ceiling Mounted Occupancy Sensors:

a. Description: Low profile occupancy sensors designed for ceiling installation.

b. Unless otherwise indicated or required to control the load indicated on the drawings, provide low voltage units, for use with separate compatible accessory power packs.

c. Provide field selectable setting for disabling LED motion detector visual indicator.

d. Occupancy sensor to be field selectable as either manual-on/automatic-off or automatic on/off.

e. Finish: White unless otherwise indicated.

2. Passive Infrared/Ultrasonic Dual Technology Ceiling Mounted Occupancy Sensors:

a. Standard Range Sensors: Capable of detecting motion within an area of 450 square feet at a mounting height of 9 feet, with a field of view of 360 degrees.

b. Extended Range Sensors: Capable of detecting motion within an area of 1,200 square feet at a mounting height of 9 feet, with a field of view of 360 degrees.

G. Directional Occupancy Sensors:

1. All Directional Occupancy Sensors: Designed for wall or ceiling mounting, with integral swivel for field adjustment of motion detection coverage.

a. Unless otherwise indicated or required to control the load indicated on the drawings, provide low voltage units, for use with separate compatible accessory power packs.

b. Provide field selectable setting for disabling LED motion detector visual indicator.

c. Finish: White unless otherwise indicated.

2. Passive Infrared/Ultrasonic Dual Technology Directional Occupancy Sensors: Capable of detecting motion within a distance of 40 feet at a mounting height of 10 feet.

H. Power Packs for Low Voltage Occupancy Sensors:

1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.

2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on the drawings.

3. Input Supply Voltage: Dual rated for 120/277 V ac.

4. Load Rating: As required to control the load indicated on the drawings.

2.3 OUTDOOR MOTION SENSORS

A. Manufacturers:

1. Hubbell Lighting, Inc; _____: www.hubbelllighting.com.

2. Lithonia Lighting; _____: www.lithonia.com.

3. WattStopper; _____: www.wattstopper.com.

4. Substitutions: See Section 016000 - Product Requirements.

5. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

B. Description: Factory-assembled wet location listed device suitable for wall or ceiling/eave mounting, with integral swivel for field adjustment of coverage, capable of detecting motion for automatic control of load indicated.

C. Sensor Technology: Passive Infrared (PIR) designed to detect occupancy by sensing movement of thermal energy between zones.

D. Operation: Unless otherwise indicated, motion sensor to turn load on when motion is detected and to turn load off when no motion is detected during an adjustable turn-off delay time interval.

E. Turn-Off Delay: Field adjustable, with time delay settings available up to 15 minutes.

F. Integral Photocell: For dusk to dawn operation.

G. Manual Override: Activated by switching power off to unit and then back on.

H. Load Rating: 1,000 W incandescent and fluorescent load at 120 V ac.

I. Coverage: Capable of detecting motion within a distance of 50 feet at a mounting height of 8 feet, with a field of view of 270 degrees.

J. Finish: Color to be selected by Architect.

2.4 TIME SWITCHES

A. Manufacturers:

1. Intermatic, Inc; _____: www.intermatic.com.
2. Tork, a division of NSI Industries LLC; _____: www.tork.com.
3. Substitutions: See Section 016000 - Product Requirements.
4. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

B. Digital Electronic Time Switches:

1. Description: Factory-assembled solid state programmable controller with LCD display, listed and labeled as complying with UL 916 or UL 917.
2. Program Capability:
   a. Astronomic Time Switches: Single channel, capable of different schedule for each day of the week with additional holiday schedule available to override normal schedule for selected days and field-configurable astronomic feature to automatically adjust for seasonal changes in sunrise and sunset times.
3. Schedule Capacity: Not less than 16 programmable on/off operations.
4. Provide automatic daylight savings time and leap year compensation.

5. Provide power outage backup to retain programming and maintain clock.
6. Manual override: Capable of overriding current schedule both permanently and temporarily until next scheduled event.
7. Provide remote photocell input with light level adjustment.
8. Input Supply Voltage: As indicated on the drawings.
9. Output Switch Configuration: As required to control the load indicated on the drawings.
10. Output Switch Contact Ratings:
    a. Resistive Load: Not less than 30 A at 120-277 V ac.
    b. Inductive Load: Not less than 30 A at 120-277 V ac.
    c. Motor Load: Not less than 1 HP at 120 V ac or 2 HP at 240 V ac.
11. Provide lockable enclosure; environmental type per NEMA 250 as specified for the following installation locations:
    a. Indoor clean, dry locations: Type 1.

2.5 IN-WALL TIME SWITCHES

A. Manufacturers:
1. Intermatic, Inc; _____: www.intermatic.com.
2. Tork, a division of NSI Industries LLC; _____: www.tork.com.
3. Substitutions: See Section 016000 - Product Requirements.
4. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

B. Digital Electronic In-Wall Time Switches:
1. Description: Factory-assembled solid state programmable controller with LCD display, suitable for mounting in standard wall box, and listed and labeled as complying with UL 916 or UL 917.
2. Program Capability:
    a. Astronomic Time Switches: Capable of different schedule for each day of the week and field-configurable astronomic feature to automatically adjust for seasonal changes in sunrise and sunset times.
3. Schedule Capacity: Not less than 40 programmable on/off operations.
4. Provide automatic daylight savings time compensation.
5. Provide power outage backup to retain programming and maintain clock.

6. Manual override: Capable of overriding current schedule both permanently and temporarily until next scheduled event.
7. Switch Configuration: Suitable for use in either SPST or 3-way application.
8. Contact Ratings:
   a. Resistive Load: Not less than 15 A at 120-277 V ac.
   b. Tungsten Load: Not less than 15 A at 120 V ac.
   c. Motor Load: Not less than 1 HP at 120 V ac or 2 HP at 240 V ac.

2.6 OUTDOOR PHOTO CONTROLS

A. Manufacturers:
   1. Intermatic, Inc; _____: www.intermatic.com.
   2. Tork, a division of NSI Industries LLC; _____: www.tork.com.
   3. Substitutions: See Section 016000 - Product Requirements.
   4. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

B. Stem-Mounted Outdoor Photo Controls:
   1. Description: Direct-wired photo control unit with threaded conduit mounting stem and field-adjustable swivel base, listed and labeled as complying with UL 773A.
   2. Housing: Weatherproof, impact resistant polycarbonate.
   3. Photo Sensor: Cadmium sulfide.
   4. Provide external sliding shield for field adjustment of light level activation.
   5. Light Level Activation: 1 to 5 footcandles turn-on and 3 to 1 turn-off to turn-on ratio with delayed turn-off.
   6. Voltage: As required to control the load indicated on the drawings.
   7. Failure Mode: Fails to the on position.
   8. Load Rating: As required to control the load indicated on the drawings.
   9. Provide accessory wall-mounting bracket where indicated or as required to complete installation.

2.7 DAYLIGHTING CONTROLS

A. Manufacturers:
   1. Hubbell Building Automation, Inc; _____: www.hubbellautomation.com

2. Lutron Electronics Company, Inc; _____: www.lutron.com/sle.
3. Sensor Switch Inc; _____: www.sensorswitch.com.
4. WattStopper; _____: www.wattstopper.com.
5. Substitutions: See Section 016000 - Product Requirements.
6. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

B. System Description: Control system consisting of photo sensors and compatible control modules and power packs, contactors, or relays as required for automatic control of load indicated according to available natural light; capable of integrating with occupancy sensors and manual override controls.

C. Daylighting Control Photo Sensors: Low voltage class 2 photo sensor units with output signal proportional to the measured light level and provision for zero or offset based signal.

1. Sensor Type: Filtered silicon photo diode.
2. Sensor Range:
   a. Indoor Photo Sensors: 5 to 100 footcandles.
   b. Outdoor Photo Sensors: 5 to 250 footcandles.
   c. Skylight Photo Sensors: 1,000 to 6,000 footcandles.
   d. Open Loop Photo Sensors: 3 to 6,000 footcandles.
3. Finish: White unless otherwise indicated.

D. Dimming Photo Sensors: Photo sensor units with integral controller compatible with specified dimming ballasts, for direct continuous dimming of up to 50 ballasts.

E. Daylighting Control Switching Modules for Low Voltage Sensors: Low voltage class 2 control unit compatible with specified photo sensors, for switching of compatible power packs, contactors, or relays in response to changes in measured light levels according to selected settings.

1. Operation: Unless otherwise indicated, load to be turned on when light level is below selected low set point and load to be turned off when light level is above selected high set point, with a no switching dead band between set points to prevent unwanted cycling.
2. Input Delay: To prevent unwanted cycling due to intermittent light level fluctuations.
3. Control Capability:
   a. Single Zone Switching Modules: Capable of controlling one programmable channel.
   b. Multi-Zone Switching Modules: Capable of controlling up to three separately programmable channels.

F. Daylighting Control Dimming Modules for Low Voltage Sensors: Low voltage class 2 control unit compatible with specified photo sensors and with specified dimming ballasts, for both continuous dimming of compatible dimming ballasts and switching of compatible power packs, contactors, or relays in response to changes in measured light levels according to selected settings.

1. Operation: Unless otherwise indicated, specified load to be continuously brightened as not enough daylight becomes available and continuously dimmed as enough daylight becomes available.
2. Load to be turned off when available daylight is sufficient to fully dim the load, after the selected time delay.
3. Control Capability: Capable of controlling up to three separately programmable channels, with up to 50 ballasts per channel.
4. Dimming and Fade Rates: Adjustable from 5 to 60 seconds.
5. Cut-Off Delay: Selectable and adjustable from 0 to 20 minutes.

G. Power Packs for Low Voltage Daylighting Control Modules:

1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage daylighting control modules for switching of line voltage loads. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on the drawings.
2. Input Supply Voltage: Dual rated for 120/277 V ac.
3. Load Ratings: As required to control the load indicated on the drawings.

H. Accessories:

1. Where indicated, provide compatible accessory wall switches for manual override control.
2. Where indicated, provide compatible accessory wireless controls for manual override control.

2.8 LIGHTING CONTACTORS

A. Manufacturers:

1. Eaton Corporation: www.eaton.com.
2. General Electric Company: www.geindustrial.com.
3. Rockwell Automation Inc; Allen-Bradley Products; _____: ab.rockwellautomation.com.
4. Schneider Electric; Square D Products: www.schneider-electric.us.
5. Siemens Industry, Inc; _____: www.usa.siemens.com.

6. Substitutions: See Section 016000 - Product Requirements.

B. Description: Magnetic lighting contactors complying with NEMA ICS 2, and listed and labeled as complying with UL 60947-1 and UL 60947-4-1; noncombination type unless otherwise indicated; ratings, configurations and features as indicated on the drawings.

C. Combination Contactors: NEMA ICS 2, Class A combination controllers with magnetic contactor(s) and externally operable disconnect.

1. Disconnects: Circuit breaker type.

a. Provide externally operable handle with means for locking in the OFF position. Provide safety interlock to prevent opening the cover with the disconnect in the ON position with capability of overriding interlock for testing purposes.

b. Provide auxiliary interlock for disconnection of external control power sources where applicable.

D. Short Circuit Current Rating:

1. Provide contactors with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.

E. Enclosures:

1. Comply with NEMA ICS 6.

2. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:

a. Indoor Clean, Dry Locations: Type 1 or Type 12.

b. Outdoor Locations: Type 3R or Type 4.

3. Finish: Manufacturer's standard unless otherwise indicated.

2.9 CONTROL ACCESSORIES

A. Auxiliary Contacts:

1. Comply with NEMA ICS 5.

2. Provide number and type of contacts indicated or required to perform necessary functions, including holding (seal-in) circuit and interlocking, plus one normally open (NO) and one normally closed (NC) spare contact for each lighting contactor, minimum.

B. Pilot Devices:

1. Comply with NEMA ICS 5; heavy-duty type.

2. Pushbuttons: Unless otherwise indicated, provide momentary, non-illuminated type with flush button operator; normally open or normally closed as indicated or as required.

3. Selector Switches: Unless otherwise indicated, provide maintained, non-illuminated type with knob operator; number of switch positions as indicated or as required.
4. Indicating Lights: Push-to-test type unless otherwise indicated.
5. Provide LED lamp source for indicating lights and illuminated devices.

C. Control and Timing Relays:

1. Comply with NEMA ICS 5.
2. Provide number and type of relays indicated or required to perform necessary functions.
3. Timing Relays: Electronic or pneumatic as indicated.
   a. Adjustable Timing Range: As indicated on drawings.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.

C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.

D. Verify that final surface finishes are complete, including painting.

E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.

F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.

G. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

A. Install lighting control devices in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.

B. Coordinate locations of outlet boxes provided under Section 260533.16 as required for installation of lighting control devices provided under this section.

1. Mounting Heights: Unless otherwise indicated, as follows:

a. Wall Switch Occupancy Sensors: 48 inches above finished floor.

b. In-Wall Time Switches: 48 inches above finished floor.

c. In-Wall Interval Timers: 48 inches above finished floor.

2. Orient outlet boxes for vertical installation of lighting control devices unless otherwise indicated.

3. Locate wall switch occupancy sensors on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.

C. Install lighting control devices in accordance with manufacturer's instructions.

D. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

E. Install lighting control devices plumb and level, and held securely in place.

F. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 262726.

G. Provide required supports in accordance with Section 260529.

H. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

I. Identify lighting control devices in accordance with Section 260553.

J. Occupancy Sensor Locations:

1. Location Adjustments: Locations indicated are diagrammatic and only intended to indicate which rooms or areas require devices. Provide quantity and locations as required for complete coverage of respective room or area based on manufacturer's recommendations for installed devices.

2. Locate ultrasonic and dual technology passive infrared/ultrasonic occupancy sensors a minimum of 4 feet from air supply ducts or other sources of heavy air flow and as per manufacturer's recommendations, in order to minimize false triggers.

K. Outdoor Photo Control Locations:

1. Where possible, locate outdoor photo controls with photo sensor facing north. If north facing photo sensor is not possible, install with photo sensor facing east, west, or down.

2. Locate outdoor photo controls so that photo sensors do not face artificial light sources, including light sources controlled by the photo control itself.

L. Install outdoor photo controls so that connections are weatherproof. Do not install photo controls with conduit stem facing up in order to prevent infiltration of water into the photo control.

M. Daylighting Control Photo Sensor Locations:

1. Location Adjustments: Locations indicated are diagrammatic and only intended to indicate which rooms or areas require devices. Provide quantity and locations as required for proper control of respective room or area based on manufacturer's recommendations for installed devices.

2. Unless otherwise indicated, locate photo sensors for closed loop systems to accurately measure the light level controlled at the designated task location, while minimizing the measured amount of direct light from natural or artificial sources such as windows or pendant luminaires.

3. Unless otherwise indicated, locate photo sensors for open loop systems to accurately measure the level of daylight coming into the space, while minimizing the measured amount of lighting from artificial sources.

N. Combination Enclosed Lighting Contactors:

1. Except where indicated to be mounted adjacent to the equipment they supply, mount lighting contactors such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.

O. Lamp Burn-In: Operate lamps at full output for minimum of 100 hours or prescribed period per manufacturer's recommendations prior to use with any dimming controls. Replace lamps that fail prematurely due to improper lamp burn-in.

P. Unless otherwise indicated, install power packs for lighting control devices above accessible ceiling or above access panel in inaccessible ceiling near the sensor location.

Q. Where indicated, install separate compatible wall switches for manual control interface with lighting control devices or associated power packs.

R. Unless otherwise indicated, install switches on load side of power packs so that switch does not turn off power pack.

S. Where indicated or required, provide cabinet or enclosure in accordance with Section 260533.16 for mounting of lighting control device system components.

3.4 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Inspect each lighting control device for damage and defects.

C. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.

D. Test time switches to verify proper operation.

E. Test outdoor photo controls to verify proper operation, including time delays where applicable.

F. Test daylighting controls to verify proper operation, including light level measurements and time delays where applicable. Record test results in written report to be included with submittals.

G. Correct wiring deficiencies and replace damaged or defective lighting control devices.

3.5 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.

C. Adjust position of directional occupancy sensors and outdoor motion sensors to achieve optimal coverage as required.

D. Where indicated or as directed by Architect, install factory masking material or adjust integral blinders on passive infrared (PIR) and dual technology occupancy sensor lenses to block undesired motion detection.

E. Adjust time switch settings to achieve desired operation schedule as indicated or as directed by Architect. Record settings in written report to be included with submittals.

F. Adjust external sliding shields on outdoor photo controls under optimum lighting conditions to achieve desired turn-on and turn-off activation as indicated or as directed by Architect.

G. Adjust daylighting controls under optimum lighting conditions after all room finishes, furniture, and window treatments have been installed to achieve desired operation as indicated or as directed by Architect. Record settings in written report to be included with submittals. Readjust controls calibrated prior to installation of final room finishes, furniture, and window treatments that do not function properly as determined by Architect.

3.6 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.7 COMMISSIONING

A. See Section 019113 - General Commissioning Requirements for commissioning requirements.

3.8 CLOSEOUT ACTIVITIES

A. See Section 017800 - Closeout Submittals, for closeout submittals.

B. See Section 017900 - Demonstration and Training, for additional requirements.

C. Demonstration: Demonstrate proper operation of lighting control devices to Architect, and correct deficiencies or make adjustments as directed.

D. Training: Train Owner's personnel on operation, adjustment, programming, and maintenance of lighting control devices.

1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.

2. Provide minimum of two hours of training.

3. Instructor: Manufacturer's authorized service representative.

4. Location: At project site.

END OF SECTION

SECTION 265100 - INTERIOR LIGHTING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Interior luminaires.

B. Emergency lighting units.

C. Exit signs.

D. Ballasts and drivers.

E. Lamps.

F. Luminaire accessories.

1.2 RELATED REQUIREMENTS

A. Section 260533.16 - Boxes for Electrical Systems.

B. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

C. Section 260918 - Remote Control Switching Devices: Remote controls for lighting, including network lighting controls, programmable relay panels, and remote control switching relays.

D. Section 260919 - Enclosed Contactors: Lighting contactors.

E. Section 260923 - Lighting Control Devices: Automatic controls for lighting including occupancy sensors, outdoor motion sensors, time switches, outdoor photo controls, and daylighting controls.

F. Section 262726 - Wiring Devices: Manual wall switches and wall dimmers.

G. Section 265600 - Exterior Lighting.

1.3 REFERENCE STANDARDS

A. IESNA LM-63 - ANSI Approved Standard File Format for Electronic Transfer of Photometric Data and Related Information; 2002 (Reaffirmed 2008).

B. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; 2008.

C. IES LM-80 - Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules; 2015.

D. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

E. NECA/IESNA 500 - Standard for Installing Indoor Commercial Lighting Systems; 2006.

F. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts; 2015.

G. NEMA LE 4 - Recessed Luminaires, Ceiling Compatibility; 2012.

H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

I. NFPA 101 - Life Safety Code; 2015.

J. UL 924 - Emergency Lighting and Power Equipment; Current Edition, Including All Revisions.

K. UL 1598 - Luminaires; Current Edition, Including All Revisions.

L. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.

2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.

3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.

4. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:

1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.

2. Provide photometric calculations where luminaires are proposed for substitution upon request.

C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.

1. LED Luminaires:

a. Include estimated useful life, calculated based on IES LM-80 test data.

b. Include IES LM-79 test report upon request.

2. Provide electronic files of photometric data certified by a National Voluntary Laboratory Accreditation Program (NVLAP) lab or independent testing agency in IESNA LM-63 standard format upon request.

D. Samples:

1. Provide one sample(s) of each custom luminaire upon request.

2. Provide one sample(s) of each luminaire proposed for substitution upon request.

E. Field quality control reports.

F. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

G. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

I. Project Record Documents: Record actual connections and locations of luminaires and any associated remote components.

1.6 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.7 DELIVERY, STORAGE, AND PROTECTION

A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting), NECA/IESNA 502 (industrial lighting), and manufacturer's written instructions.

B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.8 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.9 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.1 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings.

B. Substitutions: See Section 016000 - Product Requirements, except where individual luminaire types are designated with substitutions not permitted.

2.2 LUMINAIRES

A. Provide products that comply with requirements of NFPA 70.

B. Provide products that are listed and labeled as complying with UL 1598, where applicable.

C. Provide products listed, classified, and labeled as suitable for the purpose intended.

D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.

E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.

F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

G. LED Luminaires:

1. Components: UL 8750 recognized or listed as applicable.
2. Tested in accordance with IES LM-79 and IES LM-80.
3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

H. Luminaires Mounted in Continuous Rows: Provide quantity of units required for length indicated, with all accessories required for joining and aligning.

2.3 EMERGENCY LIGHTING UNITS

A. Description: Emergency lighting units complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.

B. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.

C. Battery:

1. Size battery to supply all connected lamps, including emergency remote heads where indicated.

D. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.

E. Provide low-voltage disconnect to prevent battery damage from deep discharge.

F. Self-Diagnostics: Provide units that self-monitor functionality and automatically perform testing required by NFPA 101 where indicated; provide indicator light(s) to report test and diagnostic status.

G. Accessories:

1. Provide compatible accessory mounting brackets where indicated or required to complete installation.
2. Where indicated, provide emergency remote heads that are compatible with the emergency lighting unit they are connected to and suitable for the installed location.

2.4 EXIT SIGNS

A. Manufacturers - Powered and Self-Luminous Signs:

1. As noted on drawings..
2. Substitutions: See Section 016000 - Product Requirements.

B. Description: Internally illuminated exit signs with LEDs unless otherwise indicated; complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.

1. Number of Faces: Single or double as indicated or as required for the installed location.

2. Directional Arrows: As indicated or as required for the installed location.

2.5 BALLASTS AND DRIVERS

A. Ballasts/Drivers - General Requirements:

1. Provide ballasts containing no polychlorinated biphenyls (PCBs).

2. Minimum Efficiency/Efficacy: Provide ballasts complying with all current applicable federal and state ballast efficiency/efficacy standards.

B. Dimmable LED Drivers:

1. Dimming Range: Continuous dimming from 100 percent to five percent relative light output unless dimming capability to lower level is indicated, without flicker.

2. Control Compatibility: Fully compatible with the dimming controls to be installed.

a. Wall Dimmers: See Section 262726.

b. Daylighting Controls: See Section 260923.

2.6 LAMPS

A. Lamps - General Requirements:

1. Unless explicitly excluded, provide new, compatible, operable lamps in each luminaire.

2. Verify compatibility of specified lamps with luminaires to be installed. Where lamps are not specified, provide lamps per luminaire manufacturer's recommendations.

3. Minimum Efficiency: Provide lamps complying with all current applicable federal and state lamp efficiency standards.

4. Color Temperature Consistency: Unless otherwise indicated, for each type of lamp furnish products which are consistent in perceived color temperature. Replace lamps that are determined by the Architect to be inconsistent in perceived color temperature.

2.7 ACCESSORIES

A. Stems for Suspended Luminaires: Steel tubing, minimum 1/2" size, factory finished to match luminaire or field-painted as directed.

B. Provide accessory plaster frames for luminaires recessed in plaster ceilings.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.

C. Verify that suitable support frames are installed where required.

D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 260533.16 as required for installation of luminaires provided under this section.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install products in accordance with manufacturer's instructions.

D. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).

E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

F. Suspended Ceiling Mounted Luminaires:

1. Do not use ceiling tiles to bear weight of luminaires.
2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.
3. Secure surface-mounted and recessed luminaires to ceiling support channels or framing members or to building structure.
4. Secure pendant-mounted luminaires to building structure.

5. Secure lay-in luminaires to ceiling support channels using listed safety clips at four corners.
6. In addition to ceiling support wires, provide two galvanized steel safety wire(s), minimum 12 gage, connected from opposing corners of each recessed luminaire to building structure.
7. See appropriate Division 9 section where suspended grid ceiling is specified for additional requirements.

G. Recessed Luminaires:

1. Install trims tight to mounting surface with no visible light leakage.
2. Non-IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.
3. Luminaires Recessed in Fire-Rated Ceilings: Install using accessories and firestopping materials to meet regulatory requirements for fire rating.

H. Suspended Luminaires:

1. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.

I. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.

J. Install accessories furnished with each luminaire.

K. Bond products and metal accessories to branch circuit equipment grounding conductor.

L. Emergency Lighting Units:

1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.

M. Exit Signs:

1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.

N. Identify luminaires connected to emergency power system in accordance with Section 260553.

O. Install lamps in each luminaire.

P. Lamp Burn-In: Operate lamps at full output for prescribed period per manufacturer's recommendations prior to use with any dimming controls. Replace lamps that fail prematurely due to improper lamp burn-in.

3.4 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Inspect each product for damage and defects.

C. Operate each luminaire after installation and connection to verify proper operation.

D. Test self-powered exit signs, emergency lighting units, and fluorescent emergency power supply units to verify proper operation upon loss of normal power supply.

E. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

3.5 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.

B. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Architect or authority having jurisdiction.

C. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

3.6 CLEANING

A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.7 CLOSEOUT ACTIVITIES

A. See Section 017800 - Closeout Submittals, for closeout submittals.

B. See Section 017900 - Demonstration and Training, for additional requirements.

C. Demonstration: Demonstrate proper operation of luminaires to Architect, and correct deficiencies or make adjustments as directed.

3.8 PROTECTION

A. Protect installed luminaires from subsequent construction operations.

END OF SECTION

SECTION 265600 - EXTERIOR LIGHTING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Exterior luminaires.

B. Poles and accessories.

C. Luminaire accessories.

1.2 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete: Materials and installation requirements for concrete bases for poles.

B. Section 260526 - Grounding and Bonding for Electrical Systems.

C. Section 260533.16 - Boxes for Electrical Systems.

D. Section 260923 - Lighting Control Devices: Automatic controls for lighting including outdoor motion sensors, time switches, and outdoor photo controls.

E. Section 262726 - Wiring Devices: Receptacles for installation in poles.

F. Section 262813 - Fuses.

G. Section 265100 - Interior Lighting.

1.3 REFERENCE STANDARDS

A. AASHTO LTS - Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals; American Association of State Highway and Transportation Officials; 6th Edition, with 2015 Interim Revisions.

B. IEEE C2 - National Electrical Safety Code; 2012.

C. IESNA LM-63 - ANSI Approved Standard File Format for Electronic Transfer of Photometric Data and Related Information; 2002 (Reaffirmed 2008).

D. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; 2008.

E. IES LM-80 - Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules; 2015.

F. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

G. NECA/IESNA 501 - Standard for Installing Exterior Lighting Systems; 2006.

H. NEMA LE 4 - Recessed Luminaires, Ceiling Compatibility; 2012.

I. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

J. UL 1598 - Luminaires; Current Edition, Including All Revisions.

K. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate placement of poles and associated foundations with utilities, curbs, sidewalks, trees, walls, fences, striping, etc. installed under other sections or by others. Coordinate elevation to obtain specified foundation height.

2. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:

1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.

2. Provide photometric calculations where luminaires are proposed for substitution upon request.

3. Provide structural calculations for each pole proposed for substitution.

C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.

1. LED Luminaires:

a. Include estimated useful life, calculated based on IES LM-80 test data.

b. Include IES LM-79 test report upon request.

2. Provide electronic files of photometric data certified by a National Voluntary Laboratory Accreditation Program (NVLAP) lab or independent testing agency in IESNA LM-63 standard format upon request.

3. Lamps: Include rated life and initial and mean lumen output.

4. Poles: Include information on maximum supported effective projected area (EPA) and weight for the design wind speed.

D. Certificates for Poles and Accessories: Manufacturer's documentation that products are suitable for the luminaires to be installed and comply with designated structural design criteria.

E. Field Quality Control Reports.

1. Include test report indicating measured illumination levels.

F. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

G. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 016000 - Product Requirements, for additional provisions.

I. Project Record Documents: Record actual connections and locations of pole foundations, luminaires, and any pull or junction boxes.

1.6 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.

B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.8 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.1 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings.

B. Substitutions: See Section 016000 - Product Requirements.

2.2 LUMINAIRES

A. Provide products that comply with requirements of NFPA 70.

B. Provide products that are listed and labeled as complying with UL 1598, where applicable.

C. Provide products listed, classified, and labeled as suitable for the purpose intended.

D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.

E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.

F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

G. Provide luminaires listed and labeled as suitable for wet locations unless otherwise indicated.

H. Recessed Luminaires:

1. Ceiling Compatibility: Comply with NEMA LE 4.

2. Luminaires Recessed in Insulated Ceilings: Listed and labeled as IC-rated, suitable for direct contact with insulation and combustible materials.

3. Luminaires Recessed in Sloped Ceilings: Provide suitable sloped ceiling adapters.

I. LED Luminaires:

1. Components: UL 8750 recognized or listed as applicable.

2. Tested in accordance with IES LM-79 and IES LM-80.

3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

J. Exposed Hardware: Stainless steel.

2.3 POLES

A. Manufacturers:

1. As specified on drawings..
2. Substitutions: See Section 016000 - Product Requirements.

B. All Poles:

1. Provide poles and associated support components suitable for the luminaire(s) and associated supports and accessories to be installed.
2. Structural Design Criteria:
   a. Comply with AASHTO LTS.
   b. Wind Load: Include effective projected area (EPA) of luminaire(s) and associated supports and accessories to be installed.
      1) Design Wind Speed: 100 miles per hour, with gust factor of 1.3.
   c. Dead Load: Include weight of proposed luminaire(s) and associated supports and accessories.
   d. Include structural calculations demonstrating compliance with submittals.
3. Material: Steel, unless otherwise indicated.
4. Finish: Match luminaire finish, unless otherwise indicated.
5. Mounting: Install on concrete foundation, height as indicated on the drawings, unless otherwise indicated.
6. Unless otherwise indicated, provide with the following features/accessories:
   a. Top cap.
   b. Anchor bolts with leveling nuts or leveling shims.
   c. Anchor base cover.
   d. Provision for pole-mounted weatherproof GFI receptacle where indicated.
   e. Provision for security cameras where indicated..

C. Metal Poles: Provide ground lug, accessible from handhole or transformer base.

2.4 ACCESSORIES

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.

C. Verify that suitable support frames are installed where required.

D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 260533.16 as required for installation of luminaires provided under this section.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install products in accordance with manufacturer's instructions.

D. Install luminaires in accordance with NECA/IESNA 501.

E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

F. Recessed Luminaires:

1. Install trims tight to mounting surface with no visible light leakage.

2. Non-IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.

3. Luminaires Recessed in Fire-Rated Ceilings: Install using accessories and firestopping materials to meet regulatory requirements for fire rating.

G. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.

H. Pole-Mounted Luminaires:

1. Maintain the following minimum clearances:

a. Comply with IEEE C2.

b. Comply with utility company requirements.

2. Foundation-Mounted Poles:

a. Provide cast-in-place concrete fouudations for poles as indicated, in accordance with Section 033000.

1) Install anchor bolts plumb per template furnished by pole manufacturer.

2) Position conduits to enter pole shaft.

b. Install foundations plumb.

c. Install poles plumb, using leveling nuts or shims as required to adjust to plumb.

d. Tighten anchor bolt nuts to manufacturer's recommended torque.

e. Install non-shrink grout between pole anchor base and concrete foundation, leaving small channel for condensation drainage.

f. Install anchor base covers or anchor bolt covers as indicated.

3. Grounding:

a. Bond luminaires, metal accessories, metal poles, and foundation reinforcement to branch circuit equipment grounding conductor.

b. Provide supplementary ground rod electrode as specified in Section 260526 at each pole bonded to grounding system as indicated.

4. Install separate service conductors, 12 AWG copper, from each luminaire down to handhole for connection to branch circuit conductors.

5. Install weather resistant GFI duplex receptacle with weatherproof cover as specified in Section 262726 in designated poles.

I. Install accessories furnished with each luminaire.

J. Bond products and metal accessories to branch circuit equipment grounding conductor.

K. Install lamps in each luminaire.

3.4 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Inspect each product for damage and defects.

C. Operate each luminaire after installation and connection to verify proper operation.

D. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

E. Measure illumination levels at night with calibrated meters to verify conformance with performance requirements. Record test results in written report to be included with submittals.

3.5 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.

B. Luminaires with Field-Rotatable Optics: Position optics according to manufacturer's instructions to achieve lighting distribution as indicated or as directed by Architect.

3.6 CLEANING

A. Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.7 CLOSEOUT ACTIVITIES

A. See Section 017800 - Closeout Submittals, for closeout submittals.

B. Demonstration: Demonstrate proper operation of luminaires to Architect, and correct deficiencies or make adjustments as directed.

3.8 PROTECTION

A. Protect installed luminaires from subsequent construction operations.

END OF SECTION

		Lighting Fixture Counts
	TYPE	Ocology Facility and Primary Care Additions
		Ocology Facility
3	EL1	
-	EL2	
-	HL1	
2	HL2	
6	PL1	
-	PL1-A	
-	PL1-B	
-	RL1	
22	RL2	
5	RL3	
-	RL4	
25	RL5	
17	RL6	
7	RL7	
4	RL8	2R-2
12	RL9	5R-2
-	RL10	
-	RL11	
-	RL12	
-	RL13	
-	RL14	
2	SL1	-3', 2-4'
10	UL1	
3	WL1	
11	WL2	
9	WL3	
3	WL4	
4	WL5	
-	WL6	
21	OS	
		Primary Care
7	EL1	
1	EL2	
4	HL1	
-	HL2	
-	PL1	
-	PL1-A	
-	PL1-B	
11	RL1	
-	RL2	
21	RL3	
6	RL4	
53	RL5	
27	RL6	
-	RL7	
-	RL8	
-	RL9	
6	RL10	-6', 2-5', 2-16', 2-6'6"
11	RL11	
19	RL12	
10	RL13	

4	RL14	
6	SL1	-4'
16	UL1	
8	WL1	
-	WL2	
20	WL3	
2	WL4	
-	WL5	
1	WL6	-17'
31	OS	

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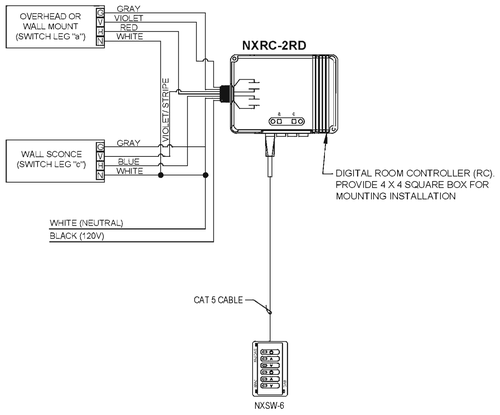
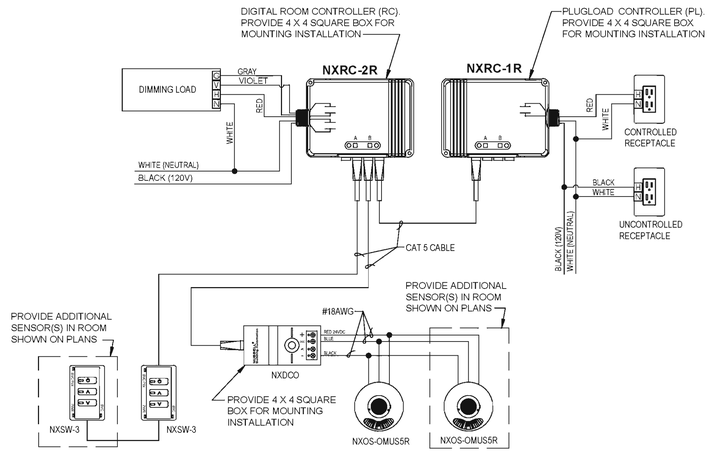


S_{LVA}

DIMMING SWITCH CONTROL WIRING DIAGRAM

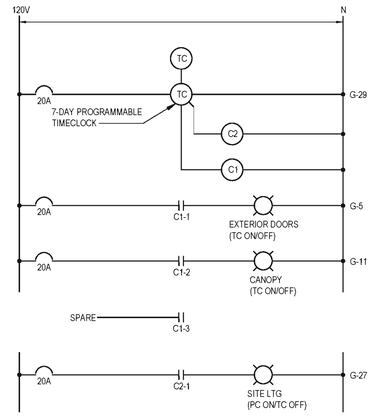
SCALE :: NONE



S_{LVB}

COMBINATION DIMMING SWITCH, ROOM OCCUPANCY SENSOR AND CONTROLLED RECEPTACLE WRING DIAGRAM

SCALE :: NONE



EXTERIOR LIGHTING CONTROL DIAGRAM

SCALE :: NONE

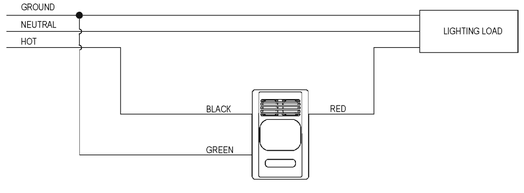
NOTES:

1. CONTROLLED RECEPTACLE BODY COLOR SELECTION SHALL BE BY ARCHITECT. COVER PLATE SHALL BE PERMANENTLY LABELED AS "CONTROLLED".

S_{LVC}

COMBINATION DIMMING SWITCH, ROOM OCCUPANCY SENSOR, PHOTO SENSOR AND CONTROLLED RECEPTACLE WIRING DIAGRAM

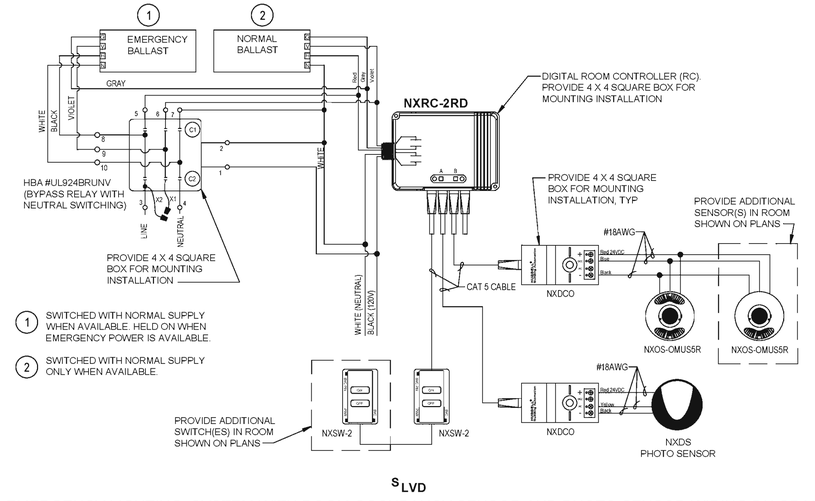
SCALE :: NONE



S_{OS}

COMBINATION WALL SWITCH/OCCUPANCY SENSOR WIRING DIAGRAM

SCALE :: NONE



S_{LVD}

EMERGENCY LIGHTING SYSTEM WITH ROOM OCCUPANCY SENSOR AND PHOTO SENSOR WIRING DIAGRAM

SCALE :: NONE

Project Number

ONCOLOGY CENTER ADDITION

COATES DESIGN ARCHITECTS
Responsible Architecture.
900 WINSLOW WAY E SUITE 210
BAINBRIDGE ISLAND WA 98110
P 206.780.0876

OLYMPIC MEDICAL CENTER

SÄZÄN GROUP
600 Stewart St., Ste 1400
Seattle, Washington 98101
Tel 206.267.1700
Fax 206.267.1701
SAZAN # 555-1808

ISSUED FOR: DATE:

CONSTRUCTION DOCUMENTS - 100% 08/06/2018

ONCOLOGY CENTER ADDITION

844 N. 5TH AVENUE, SEQUIM, WA 98382

WIRING DIAGRAMS

E7.01

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	LAMP TYPE	LUMEN OUTPUT/ CRI	BALLAST/DRIVER DIMMING TYPE	BALLAST/DRIVER VOLTAGE	INPUT WATTS	MANUFACTURER	SCHEDULE NOTES	SPECIAL SUBMITTALS	DRAWING LEGEND
EL1	CEILING MOUNTED EXIT SIGN, DIE CAST ALUMINUM HOUSING, INTERCHANGEABLE FACES AND UNIVERSAL DIRECTION ARROWS, RED LETTERING	LED			UNIV ELECTRONIC DRIVER	3W	LITHONIA "LQC" SERIES EMERGILITE "BAP" SERIES DUALITE "SE" SERIES	1		
EL2	CEILING MOUNTED COMBINATION EXIT SIGN, THERMOPLASTIC HOUSING, INTERCHANGEABLE FACES AND UNIVERSAL DIRECTION ARROWS, RED LETTERING, TWO LED LAMP HEADS	LED			UNIV ELECTRONIC DRIVER	3W	LITHONIA "LHQM" SERIES EMERGILITE "ELXN400" SERIES DUALITE "LT" SERIES	1		
HL1	PENDANT MOUNTED RECEPTION LUMINAIRE, SPUN METAL SHADE, STANDARD FINISH TO BE SELECTED BY ARCHITECT	LED 3500K	LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	10W	TECH "700-SIG" SERIES BRUCK "137220" SERIES			
HL2	PENDANT MOUNTED 4' LINEAR LUMINAIRE, 75/25 DIRECT/INDIRECT DISTRIBUTION, SINGLE PIECE STEEL HOUSING, PAINTED WHITE DIE FORMED STEEL REFLECTOR, RIGID SUPPORT	LED 3500K	3544 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	35W	PINNACLE "L6A-75" SERIES PEERLESS "BRM9L" SERIES ALERA "LP7-OA" SERIES			
PL1	POLE MOUNTED SITE LUMINAIRE, EXTRUDED ALUMINUM ENCLOSURE, DIE-CAST ALUMINUM HOUSING, IP66 RATING, INJECTION MOLDED OPTICS, STANDARD BRONZE ANODIZED FINISH, TYPE V DISTRIBUTION, TEMPERED GLASS LENS	LED 5700K	9126 LUMEN 70 CRI		UNIV ELECTRONIC DRIVER	96W	PHILIPS "EH14L" SERIES	4		
PL1-A PL1-B	4" SQUARE STEEL SITE POLE, POLYESTER POWDER COAT, PROVIDE BOLT COVERS WITH INTEGRAL RECEPTACLE WITH INTEGRAL RECEPTACLE AND CAMERA MOUNTING PLATE						JLS "SSA-5203" SERIES GSI "CPA-1" SERIES VALMONT "STS" SERIES			
RL1	RECESSED 4" DOWNLIGHT LUMINAIRE, GALVANIZED STAMPED STEEL MOUNTING FRAME, FORMED ALUMINUM HOUSING, ALUMINUM REFLECTOR, DIFFUSE LENS	LED 3500K	2000 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	25W	PORTFOLIO "LD4S" SERIES ALPHABET "NU4RD" SERIES INTENSE LIGHTING "IHOL-S4DR" SERIES			
RL2	RECESSED INFUSION ROOM 1X4 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	6500 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	54W	FOCAL POINT "FAM2-14" SERIES METALUX "14CZ" SERIES COLUMBIA "LSER14" SERIES			
RL3	RECESSED EXAM ROOM 2X4 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	6500 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	55W	METALUX "24RLN" SERIES FOCAL POINT "FAM2-24" SERIES COLUMBIA "LSER24" SERIES			
RL4	RECESSED PINHOLE LUMINAIRE, NOMINAL 2" APERTURE, STEEL GAUGE HOUSING, WET LOCATION RATED, ALUMINUM HEAT SINK, STANDARD FINISH TO BE SELECTED BY ARCHITECT, 45 DEGREE BEAM SPREAD	LED 3500K	900 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	13W	ALPHABET "NU2RD" SERIES PRESCOLITE "D2LED" SERIES			
RL5	RECESSED 2X4 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	3600 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	31W	METALUX "24RLN" SERIES FOCAL POINT "FAM2-24" SERIES COLUMBIA "LSER24" SERIES			
RL6	RECESSED 2X2 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	3000 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	28W	METALUX "22RLN" SERIES FOCAL POINT "FAM2-22" SERIES COLUMBIA "LSER22" SERIES			
RL7	RECESSED 2X4 CLEANROOM LUMINAIRE, 20 GAUGE FORMED STEEL HOUSING, INSET DOOR, FLAT WIPE DOWN ACRYLIC LENS, ISO 4 RATING, IP65 RATING, SILICONE GASKETS	LED 3500K	5500 LUMENS	0-10V	UNIV ELECTRONIC DRIVER	50W	NEW STAR "SCF22" SERIES LITHONIA "2SRTL" SERIES CERTOLUX "SAFR-4004" SERIES			
RL8	RECESSED LINEAR WALL WASH LUMINAIRE, EXTRUDED ALUMINUM HOUSING, DIE-FORMED, WHITE PAINTED REFLECTOR, REMOTE MOUNTED DRIVER, STANDARD FINISH TO BE SELECTED BY ARCHITECT, DIFFUSE ACRYLIC LENS	LED 3500K	343 LUMENS/FT 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	6W/FT	PINNACLE "EV3WW" SERIES FOCAL POINT "FSM2AL" SERIES LUMENWERX "VIA3R-WRO" SERIES	2		
RL9	RECESSED LINEAR LUMINAIRE, EXTRUDED ALUMINUM HOUSING, DIE-FORMED WHITE PAINTED REFLECTOR, REMOTE MOUNTED DRIVER, STANDARD FINISH TO BE SELECTED BY ARCHITECT, DIFFUSE ACRYLIC LENS	LED 3500K	406 LUMENS/FT 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	5W/FT	PINNACLE "EV3HE" SERIES FOCAL POINT "FSM2L" SERIES LUMENWERX "VIA3RF-HLO" SERIES	2		
RL10	RECESSED LINEAR COVE LUMINAIRE, KNIFE EDGE MOUNTING, STEEL HOUSING, FROSTED ACRYLIC DUST COVER	LED 3500K	590 LUMENS/FT 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	6W/FT	BARTCO "ADL210" SERIES ECOSENSE "TROV-SLIM COVE" SERES ELECTRIX "K5-FR" SERIES	2		
RL11	RECESSED PINHOLE LUMINAIRE, NOMINAL 2" APERTURE, STEEL GAUGE HOUSING, WET LOCATION RATED, ALUMINUM HEAT SINK, STANDARD FINISH TO BE SELECTED BY ARCHITECT, 45 DEGREE BEAM SPREAD	LED 3500K	900 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	13W	ALPHABET "NU2RD" SERIES TECH ELEMENT "E2R" SERIES PRESCOLITE "D2LED" SERIES			
RL12	RECESSED PINHOLE LUMINAIRE, NOMINAL 2" APERTURE, STEEL GAUGE HOUSING, WET LOCATION RATED, ALUMINUM HEAT SINK, STANDARD FINISH TO BE SELECTED BY ARCHITECT, 45 DEGREE BEAM SPREAD, IC-RATED	LED 3500K	900 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	13W	ALPHABET "NU2RD" SERIES TECH ELEMENT "E2R" SERIES PRESCOLITE "D2LED" SERIES			
RL13	RECESSED 2X2 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	4400 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	40W	METALUX "22RLN" SERIES FOCAL POINT "FAM2-22" SERIES COLUMBIA "LSER22" SERIES			
RL14	RECESSED ADJUSTABLE PINHOLE LUMINAIRE, NOMINAL 2" APERTURE, STEEL GAUGE HOUSING, WET LOCATION RATED, ALUMINUM HEAT SINK, STANDARD FINISH TO BE SELECTED BY ARCHITECT, 50 DEGREE BEAM SPREAD	LED 3500K	950 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	13W	ALPHABET "NU2RA" SERIES			
SL1	SURFACE MOUNTED STRIP LUMINAIRE, COLD ROLLED STEEL HOUSING, DIFFUSE ACRYLIC LENS, STANDARD FINISH TO BE SELECTED BY ARCHITECT	LED 3500K	3000 LUMENS 80 CRI		UNIV ELECTRONIC DRIVER	42W	LITHONIA "ZL2N" SERIES METALUX "SLST?" SERIES COLUMBIA "LCL4" SERIES			
UL1	UNDERCABINET LUMINAIRE, STEEL HOUSING, WHITE FINISH, ACRYLIC WHITE DIFFUSER, LINKABLE BETWEEN FIXTURES, INTEGRAL OCCUPANCY SENSOR	LED 3000K	388 LUMENS/FT 90 CRI		UNIV ELECTRONIC DRIVER	6W/FT	LITHONIA "UCEL" SERIES LUMINII "EL" SERIES AFX LIGHTING "NLLP40WH" SERIES	3		
WL1	SURFACE MOUNTED VANITY LUMINAIRE, MATTE WHITE ACRYLIC DIFFUSER	LED 3000K	1521 LUMENS 90 CRI	0-10V	UNIV ELECTRONIC DRIVER	12W	OXYGEN "3-547-20" SERIES MODERN FORMS "WS-21724" SERIES			
WL2	WALL MOUNTED DIRECT/INDIRECT LUMINAIRE, PLATED STEEL HOUSING, TRANSLUCENT ACRYLIC DIFFUSER	LED 3500K	1020 LUMENS 85 CRI	0-10V	120/277V ELECTRONIC DRIVER	12W	EUREKA "3415B" SERIES			
WL3	WALL MOUNTED CORRIDOR LUMINAIRE, EXTRUDED ALUMINUM HOUSING, FROSTED WHITE ACRYLIC LENS, NOMINAL 4" APERATURE, DIRECT/INDIRECT DISTRIBUTION, 2 CIRCUIT CONTROL FOR SEPARATE DIRECT/INDIRECT SWITCHING AND DIMMING	LED 3500K	3180 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	28W	NEO-RAY "S123DIW" SERIES FINELITE "HP-4" SERIES			
WL4	WALL MOUNTED EXTERIOR LUMINAIRE, SINGLE PIECE DIE-CAST ALUMINUM HOUSING, CRYSTAL GLASS ENCLOSURE LENS, SILICONE GASKETS, STANDARD BLACK POWDER COAT FINISH, IP65 RATING	LED 3000K	806 LUMENS 80 CRI	0-10V	120/277V ELECTRONIC DRIVER	18W	BEGA "33 385" SERIES MODERN FORMS "WA-W1412" SERIES SONNEMAN "7275.72-WL" SERIES			
WL5	WALL MOUNTED EXTERIOR INDIRECT/DIRECT LUMINAIRE, CAST ALUMINUM HOUSING, CRYSTAL GLASS LENS, SILICONE GASKETS, STANDARD FINISH TO BE SELECTED BY ARCHITECT, IP65, 60 DEG BEAM SPREAD	LED 3000K	4836 LUMENS 80 CRI	0-10V	120/277V ELECTRONIC DRIVER	54W	LIGMAN "UMV-30051" SERIES LUMINIS "SY602" SERIES			
WL6	WALL MOUNTED CORRIDOR LUMINAIRE, EXTRUDED ALUMINUM HOUSING, FROSTED WHITE ACRYLIC LENS, NOMINAL 4" APERATURE, DIRECT/INDIRECT DISTRIBUTION, 2 CIRCUIT CONTROL FOR SEPARATE DIRECT/INDIRECT SWITCHING AND DIMMING	LED 3500K	795 LUMENS/FT 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	7W/FT	NEO-RAY "S123DIW" SERIES FINELITE "HP-4" SERIES			

GENERAL NOTES:

A. CRI VALUES FOR ALL LEDS TO BE R1 - R8 AVERAGE OF 80 OR GREATER WITH AN R9 VALUE OF 50 OR GREATER.
B. LUMEN VALUES LISTED REPRESENT A MINIMUM ESTIMATED INITIAL OUTPUT FROM LUMINAIRE

SCHEDULE NOTES:

1. REFER TO ARCHITECTRUAL CODE PLAN FOR DIRECTION OF TRAVEL, MOUNTING LOCATIONS, AND NUMBER OF SIDES.
2. PROVIDE LENGTHS AS SHOWN ON PLANS.
3. PROVIDE LENGTHS AS SHOWN ON PLANS. COORDINATE FINAL LENGTHS WITH CABINETRY SHOP DRAWINGS.
4. REFER TO SHEET E2.01 FOR POLE TYPES

SPECIAL SUBMITTALS:

SD - SHOP DRAWINGS
FS - FINISH SAMPLE
PP - POINT BY POINT CALCULATIONS

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SAZAN # 555-1808

ISSUED FOR: DATE:

CONSTRUCTION DOCUMENTS - 100% 08/06/2018

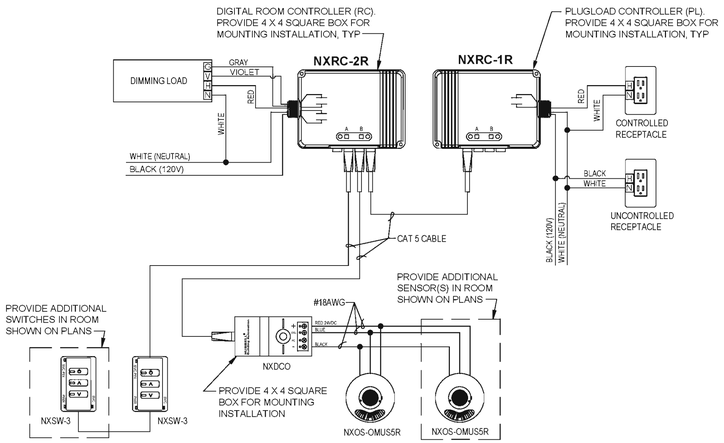
ONCOLOGY CENTER ADDITION

844 N. 5TH AVENUE
SEQUIM, WA 98382

LIGHTING SCHEDULE

E8.01

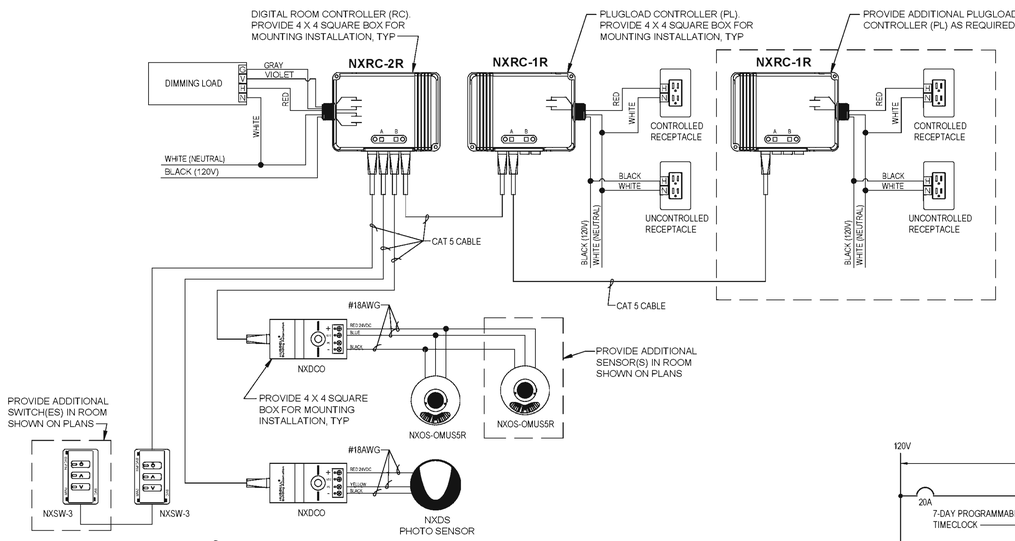
3/24/2017 12:06:05 PM



S_{LVB}

COMBINATION DIMMING SWITCH, ROOM OCCUPANCY SENSOR AND CONTROLLED RECEPTACLE WRING DIAGRAM

SCALE :: NONE



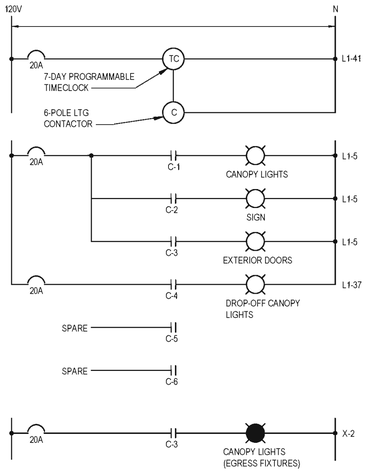
S_{LVC}

COMBINATION DIMMING SWITCH, ROOM OCCUPANCY SENSOR, PHOTO SENSOR AND CONTROLLED RECEPTACLE WIRING DIAGRAM

SCALE :: NONE

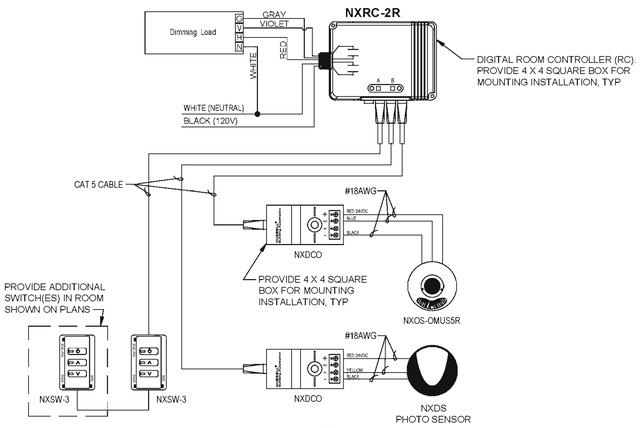
NOTES:

1. CONTROLLED RECEPTACLE BODY COLOR SELECTION SHALL BE BY ARCHITECT. COVER PLATE SHALL BE PERMANENTLY LABELED AS "CONTROLLED".



EXTERIOR LIGHTING CONTROL DIAGRAM

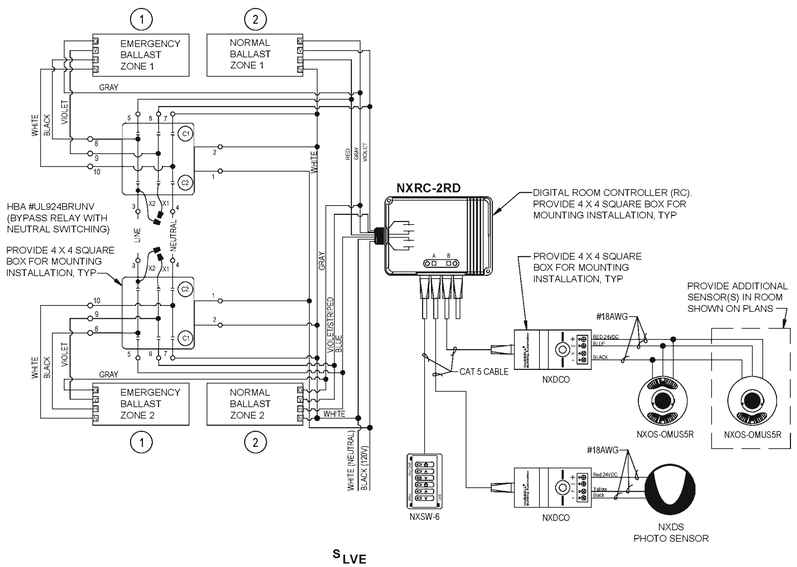
SCALE :: NONE



S_{LVD}

COMBINATION DIMMING SWITCH, ROOM OCCUPANCY SENSOR, PHOTO SENSOR AND CONTROLLED RECEPTACLE WIRING DIAGRAM

SCALE :: NONE



S_{LVE}

EMERGENCY LIGHTING SYSTEM WITH ROOM OCCUPANCY SENSOR AND PHOTO SENSOR WIRING DIAGRAM

SCALE :: NONE

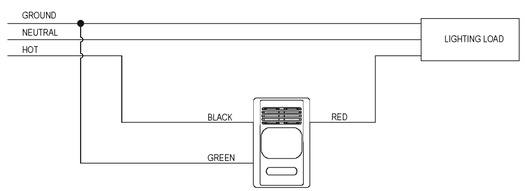
(1) SWITCHED WITH NORMAL SUPPLY WHEN AVAILABLE. HELD ON WHEN EMERGENCY POWER IS AVAILABLE.

(2) SWITCHED WITH NORMAL SUPPLY ONLY WHEN AVAILABLE.

S_{LVA}

DIMMING SWITCH CONTROL WIRING DIAGRAM

SCALE :: NONE



S_{OS}

COMBINATION WALL SWITCH/OCCUPANCY SENSOR WIRING DIAGRAM

SCALE :: NONE

Project Number

ONCOLOGY CENTER ADDITION

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SAZAN # 555-1808

ISSUED FOR: DATE:

CONSTRUCTION DOCUMENTS - 100% 07/06/2018

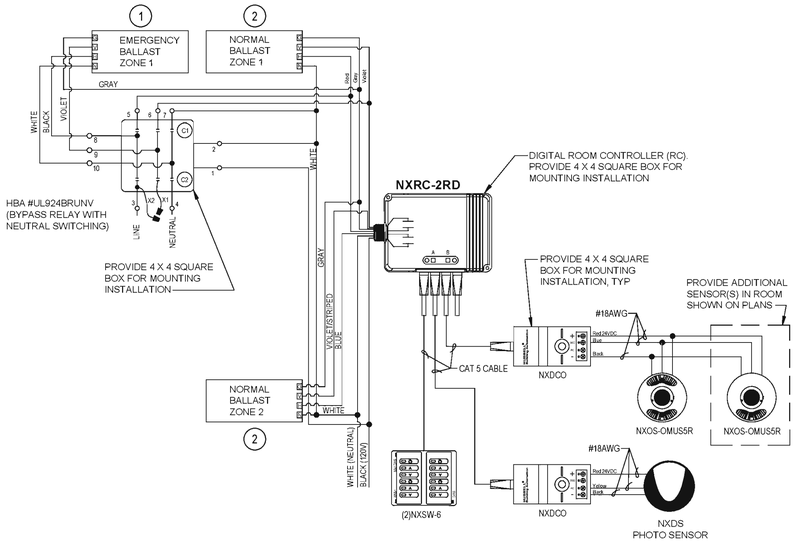
PRIMARY CARE ADDITION PHASE 1

844 N. 5TH AVENUE, SEQUIM, WA 98382

WIRING DIAGRAMS

E7.01

3/24/2017 12:06:05 PM

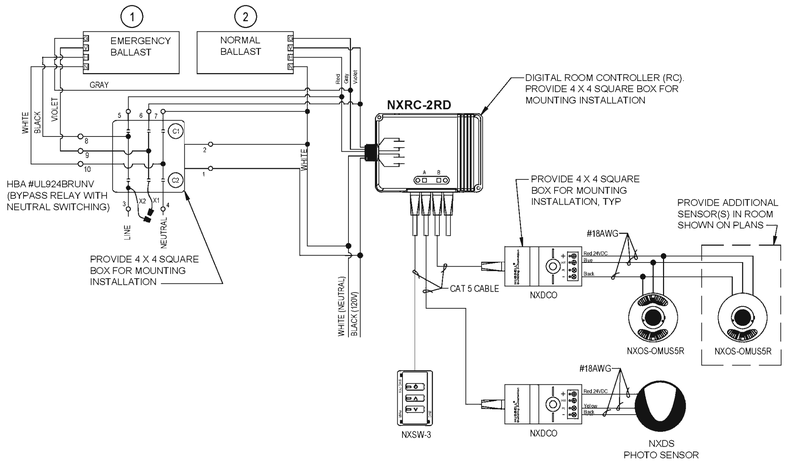


S_{LVF}

EMERGENCY LIGHTING SYSTEM WITH ROOM OCCUPANCY SENSOR AND PHOTO SENSOR WIRING DIAGRAM

SCALE :: NONE

1. SWITCHED WITH NORMAL SUPPLY WHEN AVAILABLE. HELD ON WHEN EMERGENCY POWER IS AVAILABLE.
2. SWITCHED WITH NORMAL SUPPLY ONLY WHEN AVAILABLE.

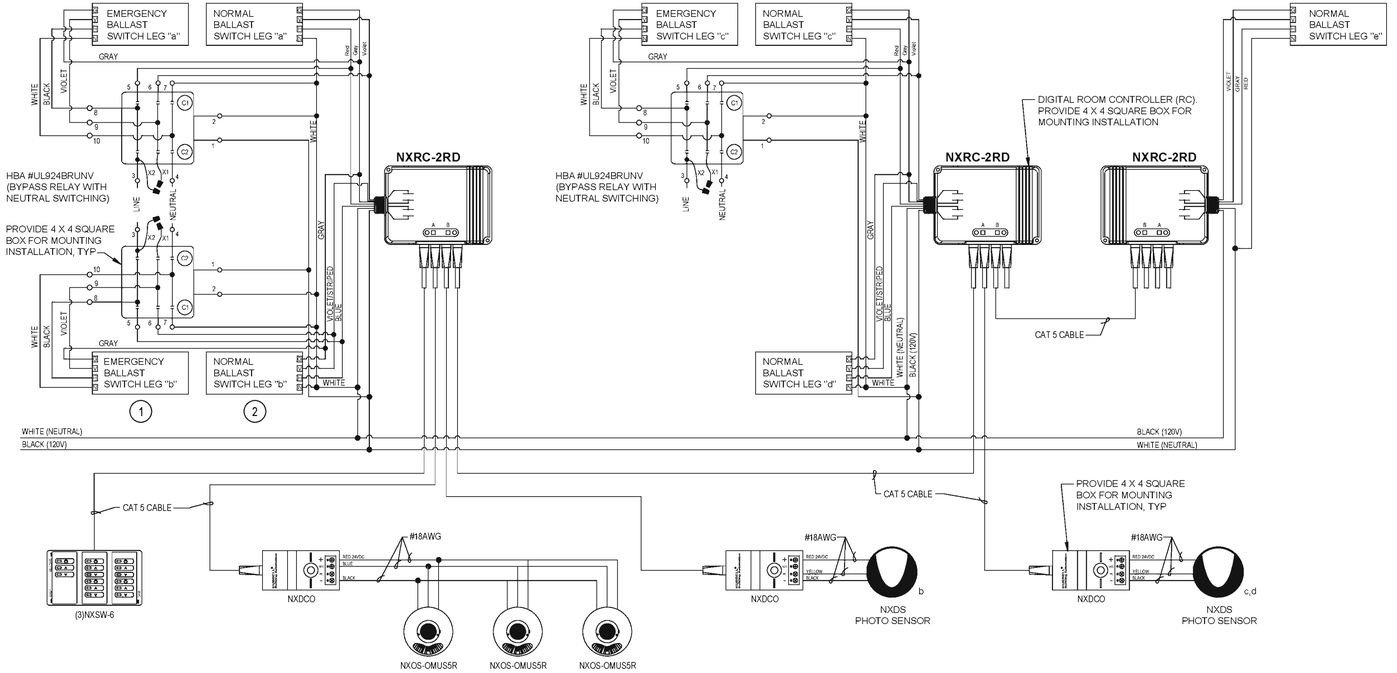


S_{LVH}

EMERGENCY LIGHTING SYSTEM WITH ROOM OCCUPANCY SENSOR AND PHOTO SENSOR WIRING DIAGRAM

SCALE :: NONE

1. SWITCHED WITH NORMAL SUPPLY WHEN AVAILABLE. HELD ON WHEN EMERGENCY POWER IS AVAILABLE.
2. SWITCHED WITH NORMAL SUPPLY ONLY WHEN AVAILABLE.



$S_{LVG\ a,b,c,d,e}$

EMERGENCY LIGHTING SYSTEM WITH ROOM OCCUPANCY SENSOR AND PHOTO SENSOR CONTROL WIRING DIAGRAM

SCALE :: NONE

1. SWITCHED WITH NORMAL SUPPLY WHEN AVAILABLE. HELD ON WHEN EMERGENCY POWER IS AVAILABLE.
2. SWITCHED WITH NORMAL SUPPLY ONLY WHEN AVAILABLE.

NOTES:

1. CONTROLLED RECEPTACLE BODY COLOR SELECTION SHALL BE BY ARCHITECT. COVER PLATE SHALL BE PERMANENTLY LABELED AS "CONTROLLED".

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PRIMARY CARE ADDITION PHASE 1

844 N. 5TH AVENUE, SEQUIM, WA 98382

WIRING DIAGRAM

E7.02

Project Number

ONCOLOGY CENTER ADDITION

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	LAMP TYPE	LUMEN OUTPUT/ CRI	BALLAST/DRIVER DIMMING TYPE	BALLAST/DRIVER VOLTAGE	INPUT WATTS	MANUFACTURER	SCHEDULE NOTES	SPECIAL SUBMITTALS	DRAWING LEGEND
EL1	CEILING MOUNTED EXIT SIGN, DIE CAST ALUMINUM HOUSING, INTERCHANGEABLE FACES AND UNIVERSAL DIRECTION ARROWS, RED LETTERING	LED			UNIV ELECTRONIC DRIVER	3W	LITHONIA "LQC" SERIES EMERGILITE "BAP" SERIES DUALITE "SE" SERIES	1		
EL2	CEILING MOUNTED COMBINATION EXIT SIGN, THERMOPLASTIC HOUSING, INTERCHANGEABLE FACES AND UNIVERSAL DIRECTION ARROWS, RED LETTERING, TWO LED LAMP HEADS	LED			UNIV ELECTRONIC DRIVER	3W	LITHONIA "LHQM" SERIES EMERGILITE "ELXN400" SERIES DUALITE "LT" SERIES	1		
HL1	PENDANT MOUNTED RECEPTION LUMINAIRE, SPUN METAL SHADE, STANDARD FINISH TO BE SELECTED BY ARCHITECT	LED 3500K	LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	10W	TECH "700-SIG" SERIES BRUCK "137220" SERIES			
HL2	PENDANT MOUNTED 4' LINEAR LUMINAIRE, 75/25 DIRECT/INDIRECT DISTRIBUTION, SINGLE PIECE STEEL HOUSING, PAINTED WHITE DIE FORMED STEEL REFLECTOR, RIGID SUPPORT	LED 3500K	3544 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	35W	PINNACLE "L6A-75" SERIES PEERLESS "BRM9L" SERIES ALERA "LP7-OA" SERIES			
PL1	POLE MOUNTED SITE LUMINAIRE, EXTRUDED ALUMINUM ENCLOSURE, DIE-CAST ALUMINUM HOUSING, IP66 RATING, INJECTION MOLDED OPTICS, STANDARD BRONZE ANODIZED FINISH, TYPE V DISTRIBUTION, TEMPERED GLASS LENS	LED 5700K	9126 LUMEN 70 CRI		UNIV ELECTRONIC DRIVER	96W	PHILIPS "EH14L" SERIES	4		
PL1-A PL1-B	4" SQUARE STEEL SITE POLE, POLYESTER POWDER COAT, PROVIDE BOLT COVERS WITH INTEGRAL RECEPTACLE WITH INTEGRAL RECEPTACLE AND CAMERA MOUNTING PLATE						ULS "SSA-5203" SERIES GSI "CPA-1" SERIES VALMONT "STS" SERIES			
RL1	RECESSED 4" DOWNLIGHT LUMINAIRE, GALVANIZED STAMPED STEEL MOUNTING FRAME, FORMED ALUMINUM HOUSING, ALUMINUM REFLECTOR, DIFFUSE LENS	LED 3500K	2000 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	25W	PORTFOLIO "LD4B" SERIES ALPHABET "NU4RD" SERIES INTENSE LIGHTING "IHOL-S4DR" SERIES			
RL2	RECESSED INFUSION ROOM 1X4 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	6500 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	54W	FOCAL POINT "FAM2-14" SERIES METALUX "14CZ" SERIES COLUMBIA "LSER14" SERIES			
RL3	RECESSED EXAM ROOM 2X4 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	6500 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	55W	METALUX "24RLN" SERIES FOCAL POINT "FAM2-24" SERIES COLUMBIA "LSER24" SERIES			
RL4	RECESSED PINHOLE LUMINAIRE, NOMINAL 2" APERTURE, STEEL GAUGE HOUSING, WET LOCATION RATED, ALUMINUM HEAT SINK, STANDARD FINISH TO BE SELECTED BY ARCHITECT, 45 DEGREE BEAM SPREAD	LED 3500K	900 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	13W	ALPHABET "NU2RD" SERIES PRESCOLITE "D2LED" SERIES			
RL5	RECESSED 2X4 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	3600 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	31W	METALUX "24RLN" SERIES FOCAL POINT "FAM2-24" SERIES COLUMBIA "LSER24" SERIES			
RL6	RECESSED 2X2 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	3000 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	28W	METALUX "22RLN" SERIES FOCAL POINT "FAM2-22" SERIES COLUMBIA "LSER22" SERIES			
RL7	RECESSED 2X4 CLEANROOM LUMINAIRE, 20 GAUGE FORMED STEEL HOUSING, INSET DOOR, FLAT WIPE DOWN ACRYLIC LENS, ISO 4 RATING, IP65 RATING, SILICONE GASKETS	LED 3500K	5500 LUMENS	0-10V	UNIV ELECTRONIC DRIVER	50W	NEW STAR "SCF22" SERIES LITHONIA "2SRTL" SERIES CERTOLUX "SAFR-4004" SERIES			
RL8	RECESSED LINEAR WALL WASH LUMINAIRE, EXTRUDED ALUMINUM HOUSING, DIE-FORMED, WHITE PAINTED REFLECTOR, REMOTE MOUNTED DRIVER, STANDARD FINISH TO BE SELECTED BY ARCHITECT, DIFFUSE ACRYLIC LENS	LED 3500K	343 LUMENS/FT 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	6W/FT	PINNACLE "EV3WW" SERIES FOCAL POINT "FSM2AL" SERIES LUMENWERX "VIA3R-WRO" SERIES	2		
RL9	RECESSED LINEAR LUMINAIRE, EXTRUDED ALUMINUM HOUSING, DIE-FORMED WHITE PAINTED REFLECTOR, REMOTE MOUNTED DRIVER, STANDARD FINISH TO BE SELECTED BY ARCHITECT, DIFFUSE ACRYLIC LENS	LED 3500K	406 LUMENS/FT 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	5W/FT	PINNACLE "EV3HE" SERIES FOCAL POINT "FSM2L" SERIES LUMENWERX "VIA3RF-HLO" SERIES	2		
RL10	RECESSED LINEAR COVE LUMINAIRE, KNIFE EDGE MOUNTING, STEEL HOUSING, FROSTED ACRYLIC DUST COVER	LED 3500K	590 LUMENS/FT 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	6W/FT	BARTCO "ADL210" SERIES ECOSENSE "TROV-SLIM COVE" SERES ELECTRIX "K5-FR" SERIES	2		
RL11	RECESSED PINHOLE LUMINAIRE, NOMINAL 2" APERTURE, STEEL GAUGE HOUSING, WET LOCATION RATED, ALUMINUM HEAT SINK, STANDARD FINISH TO BE SELECTED BY ARCHITECT, 45 DEGREE BEAM SPREAD	LED 3500K	900 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	13W	ALPHABET "NU2RD" SERIES TECH ELEMENT "E2R" SERIES PRESCOLITE "D2LED" SERIES			
RL12	RECESSED PINHOLE LUMINAIRE, NOMINAL 2" APERTURE, STEEL GAUGE HOUSING, WET LOCATION RATED, ALUMINUM HEAT SINK, STANDARD FINISH TO BE SELECTED BY ARCHITECT, 45 DEGREE BEAM SPREAD, IC-RATED	LED 3500K	900 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	13W	ALPHABET "NU2RD" SERIES TECH ELEMENT "E2R" SERIES PRESCOLITE "D2LED" SERIES			
RL13	RECESSED 2X2 LUMINAIRE, DIE-FORMED STEEL HOUSING, SINGLE PIECE ACRYLIC LENS, HINGED DOOR FRAME, STANDARD WHITE FINISH	LED 3500K	4400 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	40W	METALUX "22RLN" SERIES FOCAL POINT "FAM2-22" SERIES COLUMBIA "LSER22" SERIES			
RL14	RECESSED ADJUSTABLE PINHOLE LUMINAIRE, NOMINAL 2" APERTURE, STEEL GAUGE HOUSING, WET LOCATION RATED, ALUMINUM HEAT SINK, STANDARD FINISH TO BE SELECTED BY ARCHITECT, 50 DEGREE BEAM SPREAD	LED 3500K	950 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	13W	ALPHABET "NU2RA" SERIES			
SL1	SURFACE MOUNTED STRIP LUMINAIRE, COLD ROLLED STEEL HOUSING, DIFFUSE ACRYLIC LENS, STANDARD FINISH TO BE SELECTED BY ARCHITECT	LED 3500K	3000 LUMENS 80 CRI		UNIV ELECTRONIC DRIVER	42W	LITHONIA "ZL2N" SERIES METALUX "SLSTP" SERIES COLUMBIA "LCL4" SERIES			
UL1	UNDERCABINET LUMINAIRE, STEEL HOUSING, WHITE FINISH, ACRYLIC WHITE DIFFUSER, LINKABLE BETWEEN FIXTURES, INTEGRAL OCCUPANCY SENSOR	LED 3000K	388 LUMENS/FT 90 CRI		UNIV ELECTRONIC DRIVER	6W/FT	LITHONIA "UCEL" SERIES LUMINII "EL" SERIES AFX LIGHTING "NLLP40WH" SERIES	3		
WL1	SURFACE MOUNTED VANITY LUMINAIRE, MATTE WHITE ACRYLIC DIFFUSER	LED 3000K	1521 LUMENS 90 CRI	0-10V	UNIV ELECTRONIC DRIVER	12W	OXYGEN "3-547-20" SERIES MODERN FORMS "WS-21724" SERIES			
WL2	WALL MOUNTED DIRECT/INDIRECT LUMINAIRE, PLATED STEEL HOUSING, TRANSLUCENT ACRYLIC DIFFUSER	LED 3500K	1020 LUMENS 85 CRI	0-10V	120/277V ELECTRONIC DRIVER	12W	EUREKA "34159" SERIES			
WL3	WALL MOUNTED CORRIDOR LUMINAIRE, EXTRUDED ALUMINUM HOUSING, FROSTED WHITE ACRYLIC LENS, NOMINAL 4" APERATURE, DIRECT/INDIRECT DISTRIBUTION, 2 CIRCUIT CONTROL FOR SEPARATE DIRECT/INDIRECT SWITCHING AND DIMMING	LED 3500K	3180 LUMENS 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	28W	NEO-RAY "S123DIW" SERIES FINELITE "HP-4" SERIES			
WL4	WALL MOUNTED EXTERIOR LUMINAIRE, SINGLE PIECE DIE-CAST ALUMINUM HOUSING, CRYSTAL GLASS ENCLOSURE LENS, SILICONE GASKETS, STANDARD BLACK POWDER COAT FINISH, IP65 RATING	LED 3000K	806 LUMENS 80 CRI	0-10V	120/277V ELECTRONIC DRIVER	18W	BEGA "33 385" SERIES MODERN FORMS "WA-W1412" SERIES SONNEMAN "7275.72-WL" SERIES			
WL5	WALL MOUNTED EXTERIOR INDIRECT/DIRECT LUMINAIRE, CAST ALUMINUM HOUSING, CRYSTAL GLASS LENS, SILICONE GASKETS, STANDARD FINISH TO BE SELECTED BY ARCHITECT, IP65, 60 DEG BEAM SPREAD	LED 3000K	4836 LUMENS 80 CRI	0-10V	120/277V ELECTRONIC DRIVER	54W	LIGMAN "UMV-30051" SERIES LUMINIS "SY602" SERIES			
WL6	WALL MOUNTED CORRIDOR LUMINAIRE, EXTRUDED ALUMINUM HOUSING, FROSTED WHITE ACRYLIC LENS, NOMINAL 4" APERATURE, DIRECT/INDIRECT DISTRIBUTION, 2 CIRCUIT CONTROL FOR SEPARATE DIRECT/INDIRECT SWITCHING AND DIMMING	LED 3500K	795 LUMENS/FT 80 CRI	0-10V	UNIV ELECTRONIC DRIVER	7W/FT	NEO-RAY "S123DIW" SERIES FINELITE "HP-4" SERIES			

GENERAL NOTES:

A. CRI VALUES FOR ALL LEDS TO BE R1 - R8 AVERAGE OF 80 OR GREATER WITH AN R9 VALUE OF 50 OR GREATER.
B. LUMEN VALUES LISTED REPRESENT A MINIMUM ESTIMATED INITIAL OUTPUT FROM LUMINAIRE.

SCHEDULE NOTES:

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2. PROVIDE LENGTHS AS SHOWN ON PLANS.
3. PROVIDE LENGTHS AS SHOWN ON PLANS. COORDINATE FINAL LENGTHS WITH CABINETRY SHOP DRAWINGS.
4. REFER TO SHEET E2.01 FOR POLE TYPES.

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LIGHTING SCHEDULE

E8.01

Project Number
PRIMARY CARE ADDITION PHASE 1