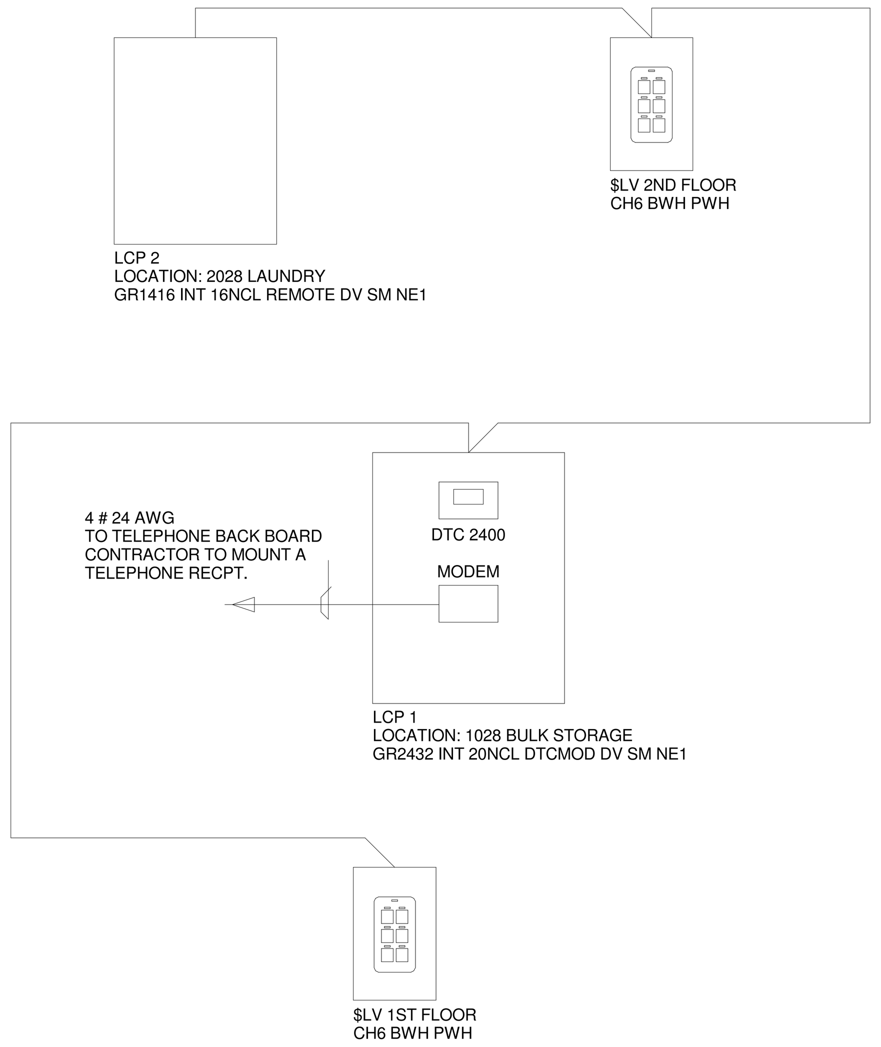


LIGHTING CONTROL SYSTEM SPECIFICATION:

1. LIGHTING CONTROL SYSTEM SHALL BE DIGITAL (COMMUNICATIONS BASED) AND CONSIST OF A DIGITAL TIME CLOCK IN ITS OWN ENCLOSURE OR A MASTER LIGHTING CONTROL PANEL (LCP). MASTER AND REMOTE LCPS SHALL CONTAIN UP TO 48 INDIVIDUAL RELAYS IN EACH PANEL. SYSTEM MAY ALSO INCLUDE CONTROLLABLE BREAKER PANELS, FIXTURE MOUNT ADDRESSABLE RELAYS, MICRO LCPS WITH UP TO 8 INDIVIDUAL RELAYS AND UP TO 8 DIMMED OUTPUTS (0-10V), DIGITAL SWITCHES AND DIGITAL INTERFACE CARDS.
2. ALL SYSTEM COMPONENTS ON THE SAME BUS SHALL BE CONNECTED AND BE CONTROLLED VIA A SINGLE-LINE DAISY-CHAIN, CATEGORY-5 4-TWISTED PAIR STRANDED CABLE WITH RJ45 CONNECTORS. SYSTEM COMPONENTS SHALL PROVIDE REAL TIME COMMUNICATION THROUGHOUT THE ENTIRE SYSTEM. CABLING AND CRIMPING TO BE DONE BY THE ELECTRICAL CONTRACTOR OR CABLE FACTORY PRE-CRIMPED CABLES MAY BE USED.
3. RELAY PANELS SHALL BE PRE-WIRED, PRE-ASSEMBLED, PRE-PROGRAMMED AND UL LISTED TO UL 916 (OR ETL LISTED TO UL 924 WHEN PART OF AN EMERGENCY SYSTEM). PANELS SHALL BE AVAILABLE WITH 120/277V OR 120/347V POWER INPUTS AND 16 GAUGE BARRIERS TO SEPARATE 120V, 277V AND LOW VOLTAGE CIRCUITS. NORMAL AND EMERGENCY POWER SHALL BE IN SEPARATE ENCLOSURES.
4. RELAYS SHALL BE LATCHING BUT DEFAULT TO NORMALLY CLOSED (NC) ON LOSS OF NORMAL POWER UNLESS OTHERWISE STATED. CONTACTS RATED FOR 30A BALLAST AT 277V, 20A TUNGSTEN AT 120V AND BALLAST AT 347V. RELAYS SHALL HAVE 18,000A SCCR AT 277V. OPTIONAL NORMALLY OPEN LATCHING RELAYS AND 480V 20A 2-POLE RELAYS SHALL BE AVAILABLE.
5. ALL SYSTEM CONTROL ELECTRONICS SHALL STORE PROGRAMMING IN NON-VOLATILE MEMORY WITH 200 YEAR MEMORY RETENTION. TIME OF DAY SHALL BE BATTERY BACKED FOR 10 YEARS.
6. LIGHTING CONTROL SYSTEM SHALL BE CONTROLLED AND BE PROGRAMMED BY A 32-CHANNEL DIGITAL TIME CLOCK (DTC). THE DTC SHALL SUPPLY ALL TIME FUNCTIONS AND ACCEPT INTERFACE INPUTS. THE DTC SHALL ACCEPT CONTROL LOCALLY USING BUILT IN BUTTONS AND PROMPTS FROM AN 8 LINE 21 CHARACTER DISPLAY, OR FROM A COMPUTER OR MODEM VIA AN ON-BOARD RS-232 PORT OR ETHERNET NETWORK. ALL COMMANDS SHALL BE IN PLAIN ENGLISH.
7. OVER THE GR2400 BUS ALL SWITCHES SHALL BE DIGITAL, CONTACT CLOSURE STYLE SWITCHES ARE NOT ACCEPTABLE. ANY SWITCH BUTTON FUNCTION SHALL BE ABLE TO BE CHANGED LOCALLY (AT THE DTC OR A SERIALLY CONNECTED PC) OR REMOTELY, VIA DIAL-UP MODEM, ETHERNET, OR INTERNET. REFER TO SINGLE LINE DIAGRAM FOR WIRING DETAILS.
8. DIGITAL PHOTOCELL CARDS WITH EXTERIOR (PCO) OR INTERIOR (PCI) SENSORS SHALL PROVIDE READOUT ON THE DTC 'S SCREEN, IN NUMERIC VALUES. EACH PHOTOCELL CARD SHALL PROVIDE MULTIPLE TRIGGER POINTS. EACH TRIGGER MAY BE PROGRAMMED LOCALLY OR REMOTELY TO CONTROL ANY RELAY(S) OR ZONE(S) IN ANY PANEL(S). PHOTOCELLS THAT REQUIRE THE USE OF SET SCREWS OR MANUAL ADJUSTMENTS AT THE PHOTOCELL OR CONTROL CARD SHALL NOT BE ACCEPTABLE.
9. LIGHTING CONTROL SYSTEM INTERFACES TO INCLUDE: DRY-CONTACT INPUT INTERFACE BAS INTERFACE (RS 232 OR RS 485 OR ETHERNET); DIMMING SYSTEM INTERFACE (RS 232); ETHERNET; AND FIBER OPTIC CONVERTER. VERIFY AND INSTALL ONLY THOSE INTERFACES INDICATED ON THE PLANS.
10. STANDARD LIGHTING CONTROL SYSTEM SOFTWARE SHALL CONSIST OF AND USE STANDARD INTERACTIVE GRAPHICAL PAGES. SOFTWARE SHALL PROVIDE VIA LOCAL OR REMOTE PC A VISUAL REPRESENTATION OF EACH DEVICE ON THE BUS, SHOW REAL TIME STATUS AND THE ABILITY TO CHANGE THE STATUS OF ANY INDIVIDUAL DEVICE, RELAY OR ZONE. OPTIONAL SOFTWARE THAT ACCEPTS JOB SPECIFIC GRAPHICS SHALL BE AVAILABLE. NO EXCEPTIONS.
11. START UP: ELECTRICAL CONTRACTOR (EC) SHALL CONTACT LIGHTING CONTROL MANUFACTURER AT LEAST 7 BUSINESS DAYS BEFORE TURNOVER OF PROJECT. LIGHTING CONTROL MANUFACTURER WILL REMOTELY DIAL INTO THE LIGHTING CONTROL SYSTEM, RUN DIAGNOSTICS AND CONFIRM SYSTEM PROGRAMMING. EC SHALL BE AVAILABLE AT THE TIME OF DIAL IN TO PERFORM ANY CORRECTIONS REQUIRED BY MANUFACTURER. EC IS RESPONSIBLE FOR COORDINATING WITH GENERAL CONTRACTOR AND THE OWNER TO PROVIDE A DEDICATED ANALOG PHONE LINE, OR A SHARED ANALOG PHONE LINE WITH AN A/B SWITCH. PHONE JACK TO BE MOUNTED WITHIN 12" OF THE MASTER LCP CONTAINING THE DIAL UP MODEM. LABEL JACK WITH PHONE NUMBER. EC TO CONNECT PHONE LINE FROM JACK TO DIAL-UP MODEM. NO EXCEPTIONS.
12. FACTORY SUPPORT OVER TELEPHONE DIAL-UP MODEM SHALL BE AVAILABLE AT NO ADDITIONAL COST TO THE EC OR THE OWNER, BOTH DURING AND AFTER THE WARRANTY PERIOD. FACTORY TO PRE-PROGRAM THE LIGHTING CONTROL SYSTEM PER PLANS AND APPROVED SUBMITTAL. THE LIGHTING CONTROL MANUFACTURER, AT NO ADDED COST, SHALL PROVIDE ADDITIONAL PROGRAMMING VIA DIAL-UP MODEM OR INTERNET AS REQUIRED BY THE EC OR OWNER FOR THE OPERATIONAL LIFE OF THE SYSTEM. UPON REQUEST MANUFACTURER TO PROVIDE REMOTE DIAL UP SOFTWARE.
13. SHOP DRAWINGS SUBMITTED BY MANUFACTURER SHALL BE JOB SPECIFIC, INCLUDING PANEL, SWITCH AND TIME CLOCK SCHEDULES, SINGLE LINE DRAWINGS, AND SHALL BE AVAILABLE IN BOTH ELECTRONIC AND HARD COPY FORMAT. SUBMITTALS WHICH CONSIST OF TYPICAL SINGLE LINE DRAWINGS OR GENERAL PROGRAMMING INFORMATION SHALL NOT BE ACCEPTABLE.
14. LIGHTING CONTROL SYSTEM DESIGN IS BASED ON LIGHTING CONTROL & DESIGN SYSTEM (LC&D).

LIGHTING CONTROLS - LOW VOLTAGE SINGLE LINE

ID: LCP 2
Location: 2028 LAUNDRY
Supply Circuit: PBLS2-11 Voltage: 120V Normal

Relay	Line Feed	Zone	Type	Voltage	Source	Description	Relay	Line Feed	Zone	Type	Voltage	Source	Description
1	PB2B-14		NC	120V	Normal	Hall 2035,36,37B	2	PB2B-14		NC	120V	Normal	Hall 2035,36,37B
3	PB2B-18		NC	120V	Normal	Hall 2035,36,37B	4	PB2B-20		NC	120V	Normal	Hall 2035,36,37B
5	PB2B-22		NC	120V	Normal	Hall 2035,36,37B	6	PB2B-24		NC	120V	Normal	Hall 2035,36,37B
7	PBLS2-5		NC	120V	Normal	Hall 2035,36,37B	8	PBLS2-5		NC	120V	Normal	Hall 2035,36,37B
9	PBLS2-9		NC	120V	Normal	Hall 2035,36,37B	10	-		NC	120V	Normal	Hall 2035,36,37B
11	-		NC	120V	Normal	Hall 2035,36,37B	12	-		NC	120V	Normal	Hall 2035,36,37B
13	-		NC	120V	Normal	Hall 2035,36,37B	14	-		NC	120V	Normal	Hall 2035,36,37B
15	-		NC	120V	Normal	Hall 2035,36,37B	16	-		NC	120V	Normal	Hall 2035,36,37B

Part #: GR1416 INT 16NCL REMOTE DV SM NE1
Enclosure Dimensions: 18"H x 12"W x 6"D
NEMA Rating: 1

PANEL SCHEDULE - LCP 2

ID: 2nd Floor
Location:
Part #: CH6 BWH PWH

Button	Name	Function	Zones Controlled	Color	Line 1	Line 2
1	BUTTON 1	Toggle	LCP 2:1,7	White	Hall A	
2	BUTTON 2	Toggle	LCP 2:2,8	White	Hall B	
3	BUTTON 3	Toggle	LCP 2:6	White	Rm Entry	
4	BUTTON 4	Toggle	LCP 2:3	White	Common A	
5	BUTTON 5	Toggle	LCP 2:4	White	Common B	
6	BUTTON 6	Toggle	LCP 2:9	White	Common C	

SWITCH SCHEDULE - 2ND FLOOR

ID: LCP 1
Location: 1028 BULK STORAGE
Supply Circuit: PBLS1B-15 Voltage: 120V Normal

Relay	Line Feed	Zone	Type	Voltage	Source	Description	Relay	Line Feed	Zone	Type	Voltage	Source	Description
1	PB1A-28		NC	120V	Normal	Hall 1034,35,36	2	PB1A-31		NC	120V	Normal	Hall 1034,35,36
3	PB1A-35		NC	120V	Normal	Hall 1034,35,36	4	PB1B-19		NC	120V	Normal	Hall 1034,35,36
5	PB1B-26		NC	120V	Normal	Hall 1034,35,36	6	PB1B-28		NC	120V	Normal	Hall 1034,35,36
7	PB1B-30		NC	120V	Normal	Hall 1034,35,36	8	PB1C-16		NC	120V	Normal	Hall 1034,35,36
9	PB1C-20		NC	120V	Normal	Hall 1034,35,36	10	PB1C-22		NC	120V	Normal	Hall 1034,35,36
11	PBLSAA-8		NC	120V	Normal	Hall 1034,35,36	12	PBLSA-14		NC	120V	Normal	Hall 1034,35,36
13	PBLSB-8		NC	120V	Normal	Hall 1034,35,36	14	PBLSB-8		NC	120V	Normal	Hall 1034,35,36
15	PBLSB-9		NC	120V	Normal	Hall 1034,35,36	16	PBLSB-16		NC	120V	Normal	Hall 1034,35,36
17	PBLSB-18		NC	120V	Normal	Hall 1034,35,36	18	-		NC	120V	Normal	Hall 1034,35,36
19	-		NC	120V	Normal	Hall 1034,35,36	20	-		NC	120V	Normal	Hall 1034,35,36
21	-		NC	120V	Normal	Hall 1034,35,36	22	-		NC	120V	Normal	Hall 1034,35,36
23	-		NC	120V	Normal	Hall 1034,35,36	24	-		NC	120V	Normal	Hall 1034,35,36
25	-		NC	120V	Normal	Hall 1034,35,36	26	-		NC	120V	Normal	Hall 1034,35,36
27	-		NC	120V	Normal	Hall 1034,35,36	28	-		NC	120V	Normal	Hall 1034,35,36
29	-		NC	120V	Normal	Hall 1034,35,36	30	-		NC	120V	Normal	Hall 1034,35,36
31	-		NC	120V	Normal	Hall 1034,35,36	32	-		NC	120V	Normal	Hall 1034,35,36

Part #: GR2432 INT 20NCL DTCMOD DV SM NE1
Enclosure Dimensions: 25.5"H x 20"W x 6"D
NEMA Rating: 1

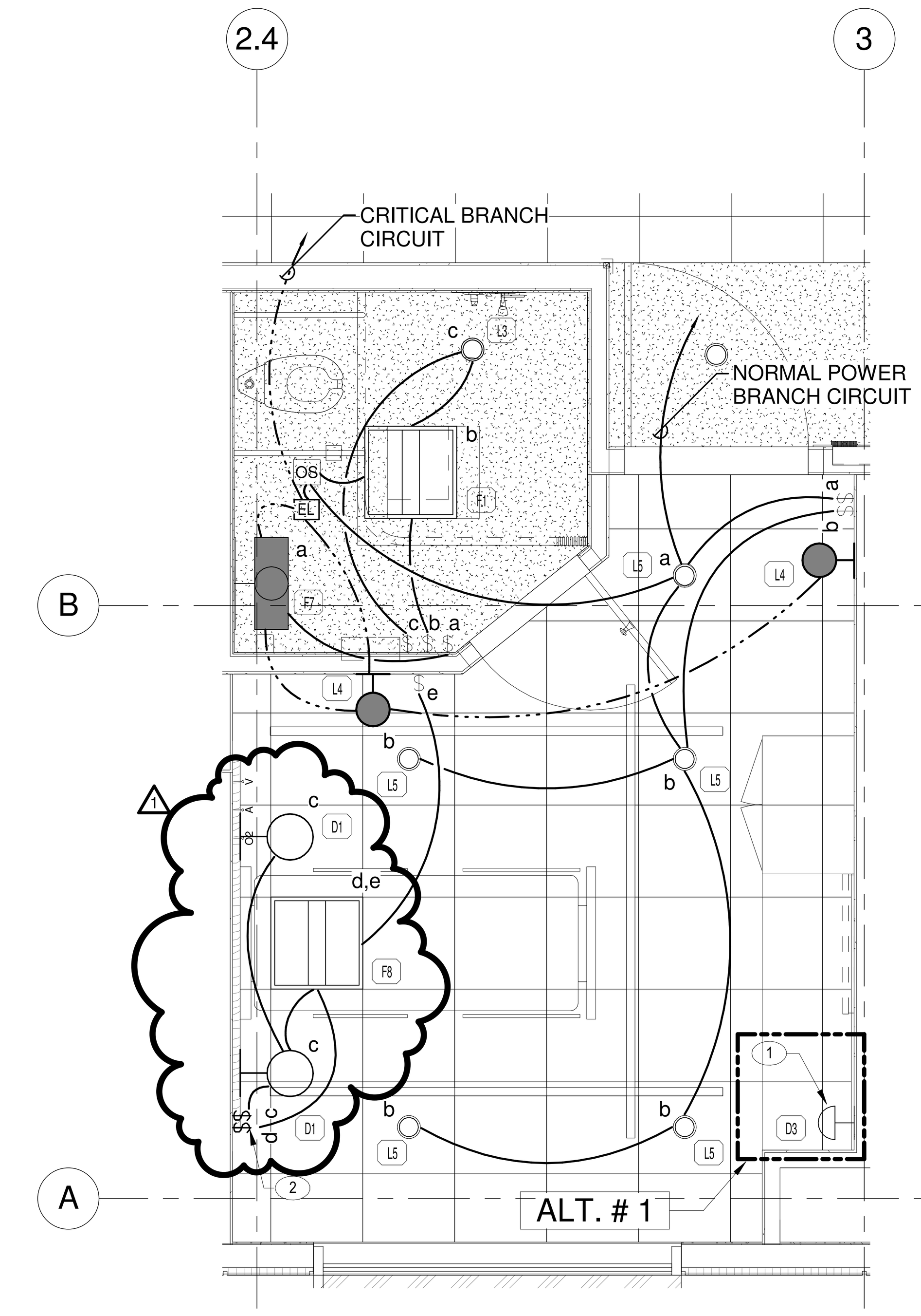
PANEL SCHEDULE - LCP 1

ID: 1st Floor
Location:
Part #: CH6 BWH PWH

Button	Name	Function	Zones Controlled	Color	Line 1	Line 2
1	BUTTON 1	Toggle	LCP 1:2,8,11	White		
2	BUTTON 2	Toggle	LCP 1:1	White		
3	BUTTON 3	Toggle	LCP 1:4	White		
4	BUTTON 4	Toggle	LCP 1:17	White		
5	BUTTON 5	Toggle	LCP 1:13-14	White		
6	BUTTON 6	Toggle	LCP 1:5,9-10,12	White		

SWITCH SCHEDULE - 1ST FLOOR

B / EL614 — LIGHTING CONTROL SYSTEM
N.T.S.



A / EL614 — TYP. PATIENT ROOM CIRCUITING DIAGRAM
Scale: 3/8" = 1'-0"
TYPICAL PATIENT ROOM HARD WIRE SYSTEM

SHEET NOTES FOR DETAIL A/EL614

1. WITH INTEGRAL SWITCH. CONNECT TO RECEPTACLE CIRCUIT AT DESK.
2. FOR SWITCH 'c' AND 'd' PROVIDE MOMENTARY CONTACT SWITCHES. CONNECT TO LOW VOLTAGE SIDE OF LOW VOLTAGE INTERFACE FURNISHED WITH NURSE CALL SYSTEM. COORDINATE EXACT REQUIRMENTS WITH NURSE CALL SYSTEM MANUFACTURER.

GENERAL NOTES

1. SEE ARCHITECTURE DETAILS FOR EXACT LOCATION OF LIGHTS AND DEVIES.

PK Electrical, Inc.
681 Sierra Rose Dr., Ste. B • Reno, Nevada 89511
p. 775.826.9010 • f. 775.826.9030 • pkelectrical.com
10165

FULLY SPRINKLED

Amendment #3	9-12-12
Revisions	Date

Consultants
COLLABORATIVE DESIGN STUDIO architecture of experience and place
www.collaborativedesignstudio.com
T 775.348.7777 F 775.348.0904
9444 DOUBLE R BLVD SUITE B | RENO NV 89521

Reviewing Agency - Fire Protection
AON
Fire Protection Engineering
Aon Fire Protection Engineering Corporation
11770 Bernardo Plaza Court | Suite 116 | San Diego, CA 92128
t +1.858.673.5845 | f + 1.858.673.5849 | www.aonfpe.com
Fire Protection | Code | Risk | Life Safety | Security

Architects/Engineers
RBB ARCHITECTS INC
10980 Wilshire Boulevard, Los Angeles, California 90024-3905
Telephone 310 473 3555
Facsimile 310 473 3555
www.rbbinc.com
917 7th St. 2nd Floor Ste. 3, Sacramento, California 95814
Telephone 310 473 3555
Facsimile 310 473 3555
www.rbbinc.com

Drawing Title: Enlarged Patient &Patient Bathroom Plan and Lighting Control System
Scale: As indicated
Approved Project Director:

Project Title: VA RENO HEALTHCARE SYSTEM COMMUNITY LIVING CENTER EXPANSION
Project No.: #1017200
VA Contract No.: VA261-P-0933
Location: 975 KIRMAN AVE., RENO, NEVADA 89502
Date: 06/01/2012
Checked: KDP
Drawn: TPT

VA Project No.: 654-317
Building No.:
Drawing No.: EL614

Office of Construction and Facilities Management
Department of Veteran Affairs

BID DOCUMENTS