

Order Plans @

LIGHTING CONTROL NOTES

- LIGHTING CONTROL SYSTEM SHALL BE DIGITAL AND CONSIST OF ONE (1) MASTER LCP AND ONE (1) SLAVE LCP WITH INDIVIDUAL RELAYS, DIGITAL SWITCHES AND DIGITAL INTERFACE CARDS. ALL SYSTEM COMPONENTS SHALL CONNECT IN A "DAISY CHAIN" STYLE CONFIGURATION AND BE CONTROLLED VIA CATEGORY 5 PATCH CABLE WITH RJ45 CONNECTORS, PROVIDING REAL-TIME TWO-WAY COMMUNICATION WITH EACH SYSTEM COMPONENT. ALL CABLES SUPPLIED BY CONTRACTOR.
- RELAY PANELS SHALL BE PRE-WIRED, PRE-ASSEMBLED, PREPROGRAMMED AND LISTED TO UL 916 (NORMAL) OR ETL LISTED TO UL924 (EMERGENCY). PANELS SHALL BE PROVIDED WITH DUAL VOLTAGE POWER SUPPLY AND 16 GAGE BARRIERS TO SEPARATE HIGH AND LOW VOLTAGE.
- STANDARD RELAYS SHALL HAVE NORMALLY CLOSED (NC) CONTACTS RATED FOR 120/277V 20A TUNGSTEN, BALLAST OR HID. STANDARD RELAYS SHALL BE ZERO-CROSS TYPE. NO EXCEPTIONS. OPTIONAL 600V, 2-POLE RELAY, NO OR NC, AND 347 SINGLE POLE RELAY SHALL BE AVAILABLE.
- ALL INCANDESCENT LIGHTING CIRCUITS SHALL BE CONTROLLED BY A NC/SOFTSTART RELAY. NO EXCEPTIONS.
- RELAY PANEL ELECTRONICS SHALL PROVIDE CURRENT VSUAL STATUS AND CONTROL OF EACH RELAY OR ZONE. ALL SYSTEM CONTROL ELECTRONICS SHALL STORE PROGRAMMING IN A NON-VOLATILE MEMORY AND PROVIDE 10 YEAR BATTERY BACK UP FOR TIME OF DAY.
- LIGHTING CONTROL SYSTEM SHALL CONSIST OF MASTER AND SLAVE PANEL(S) CONTROLLED BY A 32-CHANNEL DIGITAL TIME CLOCK (DTC) THAT CONTROLS AND PROGRAMS THE ENTIRE LIGHTING CONTROL SYSTEM. THE DTC SHALL SUPPLY ALL TIME FUNCTIONS AND ACCEPT OTHER INPUTS. THE DTC SHALL ACCEPT CONTROL LOCALLY USING BUILT IN BUTTON PROMPTS AND USE OF AN 8 LINE 21-LETTER DISPLAY, FROM A COMPUTER, MODEM, ETHERNET OR INTERNET. ALL COMMANDS SHALL BE IN PLAIN ENGLISH. HELP PAGES SHALL DISPLAY ON THE DTC SCREEN.
- ALL SWITCHES SHALL COMMUNICATE VIA RS 485, CAT 5 PATCH CABLE WITH RJ45 CONNECTORS. CONTACT CLOSURE STYLE SWITCHES ARE NOT ACCEPTABLE. ANY SWITCH BUTTON FUNCTION SHALL BE ABLE TO BE CHANGED LOCALLY (AT THE DTC OR A PC) OR REMOTELY, VIA MODEM, ETHERNET OR INTERNET. REFER TO SINGLE LINE DIAGRAM FOR WIRING DETAILS. SWITCHES WHICH CANNOT BE PROGRAMMED REMOTELY SHALL NOT BE ACCEPTABLE.
- PHOTOCELL, EXTERIOR (PCO), SHALL PROVIDE READOUT ON THE DTC SCREEN. PHOTOCELLS THAT REQUIRE THE USE OF SET SCREWS OR MANUAL ADJUSTMENTS AT THE PHOTOCELL CONTROL CARD SHALL NOT BE ACCEPTABLE.
- LIGHTING CONTROL SYSTEM INTERFACES TO INCLUDE A DRY CONTACT INPUT INTERFACE, BMS INTERFACE AND ETHERNET/INTERNET INTERFACE. VERIFY AND INSTALL ONLY THOSE INTERFACES INDICATED ON THE PLANS.
- STANDARD LIGHTING CONTROL SYSTEM SOFTWARE, PRE-INSTALLED INTO THE DTC, SHALL CONSIST OF AND USE STANDARD GRAPHICAL MANAGEMENT SOFTWARE (GMS) PAGES. GMS 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.
- START UP: EC SHALL CONTACT LC&D AT LEAST 7 DAYS BEFORE TURNOVER OF PROJECT. LC&D 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 LC&D. EC IS RESPONSIBLE FOR COORDINATING WITH GC AND THE OWNER, THE INSTALLATION OF A DEDICATED TELEPHONE LINE OR A SHARED PHONE LINE WITH A/B SWITCH. PHONE JACK TO BE MOUNTED WITHIN 12" OF MASTER LCP. LABEL JACK WITH PHONE NUMBER. EC SHALL CONNECT PHONE LINE FROM JACK TO MASTER LCP. NO EXCEPTIONS.
- TELEPHONE FACTORY DIAL-UP SUPPORT SHALL BE AVAILABLE AT NO ADDITIONAL COST TO THE EC OR OWNER BOTH DURING AND AFTER THE 3 YEAR WARRANTY PERIOD. FACTORY TO PREPROGRAM THE LIGHTING CONTROL SYSTEM PER PLANS AND APPROVED SUBMITTAL. THE LIGHTING CONTROL MANUFACTURER, AT NO ADDED COST, SHALL PROVIDE ADDITIONAL PROGRAMMING VIA MODEM AS REQUIRED BY THE EC OR OWNER FOR THE OPERATIONAL LIFE OF THE SYSTEM. MANUFACTURER WARRANTS THAT THE DTC SOFTWARE CAN BE UPGRADED AND MONITORED REMOTELY. NO EXCEPTIONS.
- SHOP DRAWINGS: SUBMIT DIMENSIONED DRAWINGS OF LIGHTING CONTROL SYSTEM AND ACCESSORIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, RELAY PANELS, SWITCHES, DTC, PHOTOCELLS AND OTHER INTERFACES. DRAWINGS SHALL INDICATE EXACT LOCATION AND PROGRAMMING OF EACH DEVICE. INDICATE ALL TIME SCHEDULES AND SWITCH BUTTON ENGRAVING.

LIGHTING FIXTURE SCHEDULE

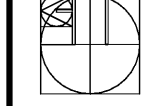
SYMBOL	LABEL	DESCRIPTION	LAMPS			VOLTAGE	MOUNTING	NOTES
			NO.	TYPE	WATT			
	C1	2'x4' LED VOLUMETRIC FIXTURE WITH MEDIUM DISTRIBUTION, 80 CRI, AND WHITE FINISH. GE LV124 SERIES	-	LED 4000K	47	6,000	UNV	CEILING RECESSED (1)
	C1A	2'x4' LED VOLUMETRIC FIXTURE WITH MEDIUM DISTRIBUTION, 80 CRI, AND WHITE FINISH. GE LV124 SERIES	-	LED 4000K	25	3,000	UNV	CEILING RECESSED (1)
	C2	6" DIA. LED DOWNLIGHT WITH 80 CRI, WIDE BEAM SPREAD, SEMI-DIFFUSED REFLECTOR FINISH, CLEAR REFLECTOR COLOR, AND WHITE FLANGE FINISH. GE D18R SERIES	-	LED 4000K	20	1,500	277	CEILING RECESSED (1)
	C4	8' LED LINEAR STRIP FIXTURE WITH 1 MODULE, HIGH OUTPUT, 80 CRI, 120' DIFFUSED OPTICS BEAM, 0-10V CONTROL WIRING, AND WHITE FINISH. GE ALCS SERIES	-	LED 4000K	75	11,000	UNV	CEILING SUSPENDED 12'-0" (1)(2)
	C4A	4' LED LINEAR STRIP FIXTURE WITH 1 MODULE, HIGH OUTPUT, 80 CRI, 120' DIFFUSED OPTICS BEAM, 0-10V CONTROL WIRING, AND WHITE FINISH. GE ALCS SERIES	-	LED 4000K	38	5,500	UNV	CEILING SUSPENDED 12'-0" (1)(2)
	C5	3.5'x4' LED LINEAR FIXTURE WITH MEDIUM FLUSH LENS DISTRIBUTION, 0-10V NO CONTROLS, AND WHITE FINISH. GE LAL4 SERIES	-	LED 4000K	28	2,800	UNV	CEILING RECESSED (1)
	C6	4' LED LINEAR STRIP FIXTURE WITH 1 MODULE, HIGH OUTPUT, 70 CRI, 120' DIFFUSED OPTICS BEAM, 0-10V CONTROL WIRING, AND WHITE FINISH. GE ALV1 SERIES	-	LED 4000K	38	5,350	UNV	CEILING SUSPENDED 10'-0" (1)(2)
	C9	11"x14" LED HIGH BAY WITH 18 MODULE BODY, STANDARD EFFICIENCY PERFORMANCE LEVEL, 70 CRI, 120' DIFFUSED LENS OPTIC, AND WHITE FINISH. GE ABSV SERIES	-	LED 4000K	-	12,000	UNV	CEILING SUSPENDED 18'-0" (1)(2)
	C8A	8' LED LINEAR STRIP FIXTURE WITH 1 MODULE, VERY HIGH OUTPUT, 70 CRI, 120' DIFFUSED OPTICS BEAM, 0-10V CONTROL WIRING, AND WHITE FINISH. GE ALV1 SERIES	-	LED 4000K	111	15,000	UNV	CEILING SUSPENDED 18'-0" (1)(2)
	C22	6" DIA. LED DOWNLIGHT WITH 80 CRI, WIDE BEAM SPREAD, SEMI-DIFFUSED REFLECTOR FINISH, CLEAR REFLECTOR COLOR, AND WHITE FLANGE FINISH. GE D18R SERIES	-	LED 3500K	-	2,000	277	CEILING RECESSED (1)
	F1	2.5'x8" LED LINEAR FIXTURE WITH WIDE LENS UP DISTRIBUTION, RED, WHITE, AND BLUE LENS DOWN DISTRIBUTION, 0-10V NO CONTROLS, AND WHITE FINISH. GE LAL2 SERIES	-	LED 4000K	111	12,000	UNV	CEILING SUSPENDED 14'-0" (1)(2)
	F3	4" DIA. SQUARE LED DOWNLIGHT WITH 80 CRI, WIDE BEAM SPREAD, SEMI-DIFFUSED REFLECTOR FINISH, CLEAR REFLECTOR COLOR, AND WHITE FLANGE FINISH. GE D14S SERIES	-	LED 4000K	20	1,500	277	CEILING RECESSED (1)
	F3A	4" DIA. LED DOWNLIGHT WITH 80 CRI, WIDE BEAM SPREAD, SEMI-DIFFUSED REFLECTOR FINISH, CLEAR REFLECTOR COLOR, AND WHITE FLANGE FINISH. GE D18R SERIES	-	LED 4000K	14	1,000	277	CEILING RECESSED (1)
	F4	LED DOUBLE SHADE PENDANT LIGHT WITH 24" HEIGHT, 80 CRI, AND WHITE FINISH. ARABIAN ARCHITECTURAL LIGHTING SYSTEMS PGN SERIES	-	LED 4000K	108	6,000	277	CEILING SUSPENDED 10'-0" (1)(2)
	F5	8' LED LINEAR STRIP FIXTURE WITH NO UPOR, MEDIUM FLUSH LENS DOWN DISTRIBUTION, AND CONTROLS, AND WHITE FINISH. GE LAL2 SERIES	-	LED 4000K	28	3,000	UNV	CEILING SUSPENDED 8'-0" (1)(2)
	F7	3.5'x4' LED LINEAR FIXTURE WITH MEDIUM FLUSH LENS DISTRIBUTION, 0-10V NO CONTROLS, AND WHITE FINISH. GE LAL4 SERIES	-	LED 4000K	28	2,800	UNV	CEILING RECESSED (1)
	F7	4" DIA. SQUARE WALL WASH LED DOWNLIGHT WITH 80 CRI, SEMI-DIFFUSED REFLECTOR FINISH, CLEAR REFLECTOR COLOR, AND WHITE FLANGE FINISH. GE D14SW SERIES	-	LED 4000K	25	2,000	277	CEILING (1)
	F8	6" DIA. LED DOWNLIGHT WITH 80 CRI, WIDE BEAM SPREAD, SEMI-DIFFUSED REFLECTOR FINISH, CLEAR REFLECTOR COLOR, AND WHITE FLANGE FINISH. GE D18R SERIES	-	LED 4000K	20	1,500	277	CEILING RECESSED (1)
	F8A	6" DIA. LED DOWNLIGHT WITH 80 CRI, WIDE BEAM SPREAD, SEMI-DIFFUSED REFLECTOR FINISH, CLEAR REFLECTOR COLOR, AND WHITE FLANGE FINISH. GE D18R SERIES	-	LED 4000K	38	3,000	277	CEILING RECESSED (1)
	F9	2'x2' LED VOLUMETRIC FIXTURE WITH MEDIUM DISTRIBUTION, 80 CRI, HIGH PERFORMANCE, AND WHITE FINISH. GE LV122 SERIES	-	LED 4000K	16	2,000	UNV	CEILING RECESSED (1)
	F9A	2'x2' LED VOLUMETRIC FIXTURE WITH MEDIUM DISTRIBUTION, 80 CRI, HIGH PERFORMANCE, AND WHITE FINISH. GE LV122 SERIES	-	LED 4000K	26	3,300	UNV	CEILING RECESSED (1)
	EX1	LED EDGE-LIT EXIT LIGHT FIXTURE WITH RED LETTERING, SATIN ALUMINUM FINISH, EMERGENCY OPERATION, AND SELF-DIAGNOSTICS. DUAL LITE LE SERIES	-	LED	-	-	UNV	CEILING / WALL SURFACE
	EX2	LED EXIT LIGHT FIXTURE WITH RED LETTERING, WHITE FINISH, EMERGENCY OPERATION, AND SELF-DIAGNOSTICS. DUAL LITE SE SERIES	-	LED	-	-	UNV	CEILING / WALL SURFACE
	EX2W	LED EXIT LIGHT FIXTURE WITH WET LOCATION RATING, RED LETTERING, WHITE FINISH, AND EMERGENCY OPERATION. DUAL LITE SEWL SERIES	-	LED	-	-	UNV	CEILING / WALL SURFACE
	EM5	11"x6.5"x7" HD LED NORMAL / EMERGENCY FIXTURE WITH WHITE FINISH AND WET LOCATION RATING. DUAL LITE PGN SERIES	-	LED	17	445	UNV	WALL SURFACE 8'-0" 8'-0" SERV DR DOORS

- GENERAL NOTES:
- EMERGENCY FIXTURES INDICATED IN THIS SCHEDULE SHALL BE CAPABLE OF 90 MINUTE BATTERY BACK-UP OPERATION.
 - PROVIDE COMPATIBLE EMERGENCY BATTERY PACK WITHOUT LAMPS (DUAL-LITE LM SERIES OR EQUAL) FOR ALL REMOTE HEAD TYPE EMERGENCY FIXTURES. INSTALL ON INTERIOR SIDE OF WALL AND LOCATE ABOVE ACCESSIBLE CEILING WHEN CEILING ARE PRESENT.
 - COORDINATE EXACT LOCATION AND FINISH OPTIONS OF ALL EMERGENCY REMOTE TEST SWITCHES WITH ARCHITECT PRIOR TO ROUGH-IN AND CONNECT FOR OPERATION.
 - CONTRACTOR IS RESPONSIBLE FOR SECURING ANY SUSPENDED LIGHT FIXTURE(S) WHICH SWAY OR MOVE DUE TO AIR PRODUCING MECHANICAL EQUIPMENT OR EXTERIOR WIND WITH RIGID SUPPORT(S).
- NOTES:
- VERIFY CEILING TYPES PRIOR TO ORDERING FIXTURES.
 - VERIFY EXACT MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS.
 - MOUNT FIXTURE AT HEIGHT AS INDICATED (BOTTOM OF FIXTURE), COORDINATE WITH EQUIPMENT PRIOR TO ROUGH IN.



REVISION DATE

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DATE: 11.06.2018
SCALE: AS SHOWN
BY: GD
JOB ID:

ELECTRICAL NOTES
DRAWING TITLE

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SHEET 2 OF 14

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