

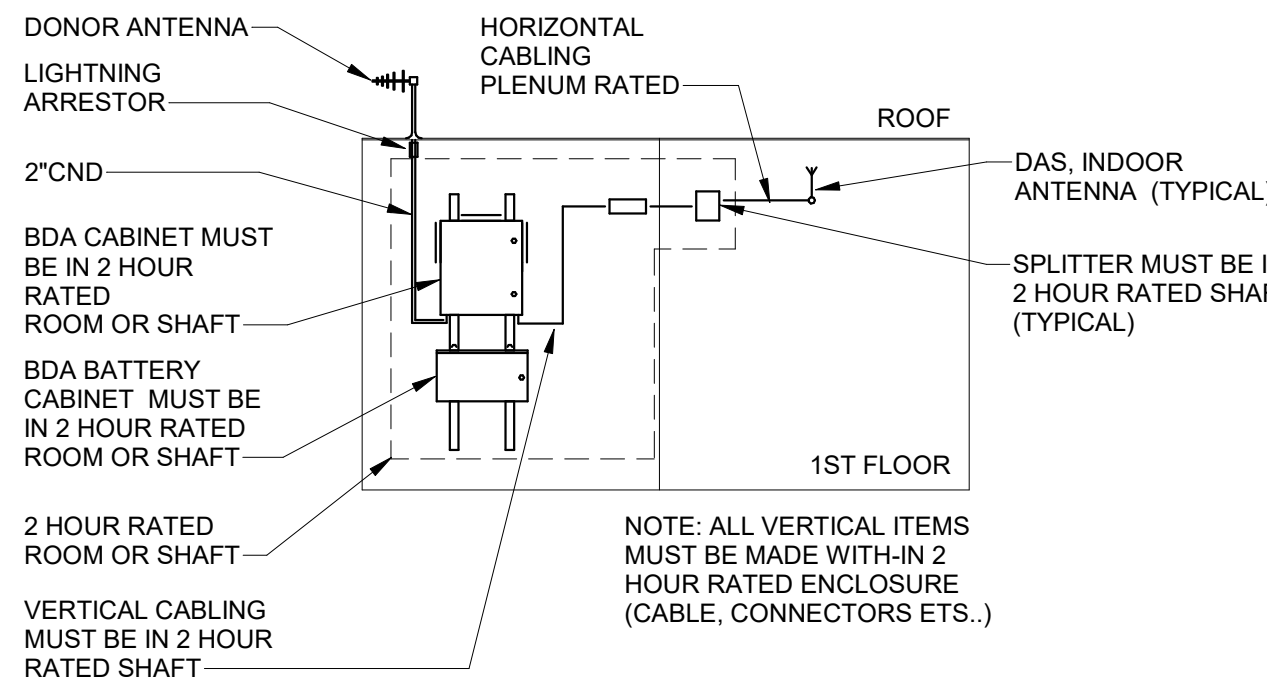
LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER/SERIES	NOM. SIZE	TEMP.(°K)	LAMPS	VOLTS	DELIVERED LUMENS	WATTS	LENS	COLOR	MOUNTING HEIGHT	BALLAST/ DRIVER	REMARKS
A2	2X4 LAY-IN LED TROFFER	LITHONIA: GTL SERIES COLUMBIA: LT24 SERIES	2'x4'	3500	LED	120V	5400	51	A19	WHITE	RECESSED LAY-IN	LED DRIVER DIMMING	1
B	LED UTILITY LIGHT	LITHONIA: CSS COLUMBIA: CSL4 SERIES	4'	3500	LED	120V	3000	31	ACRYLIC	WHITE	SURFACE / SUSPENDED	LED DRIVER	4, 6
E1	2-HEAD EMERGENCY LIGHT	EELP: EM2LF SERIES ISOLITE: SERIES	12"Wx5.5"Hx6"D		LED	120V		12		WHITE	WALL MOUNTED 7'-6" AFF		
X1	EXIT SIGN, SINGLE FACE	EMERGLITE PREMIER SERIES LITHONIA EXR LED EL M6 ISOLITE ELT-EM-R-1W-BA-SC-UC EMERGLITE LSNX42NRWUA	12"Wx8"Hx2"D		LED	120V		2	RED	WHITE	SURFACE CEILING / 7'-6" AFF WHEN WALL MOUNTED		8

REMARKS:
1. 0-10V DIMMING 1%
2. DAMP LOCATION
3. WET LOCATION
GENERAL NOTES:
A. THE CONTRACTOR SHALL VERIFY THE LEAD TIME OF ALL PRODUCTS SPECIFIED IN THIS SCHEDULE AT THE TIME OF PACKAGE QUOTE.
B. DURING THE BID PROCESS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DELIVERY/SCHEDULING ISSUES.
C. NO SUBSTITUTIONS WILL BE ALLOWED DUE TO THE LACK OF COORDINATION OF DELIVERY DATES AND CONSTRUCTION SCHEDULE AFTER BID.
D. ALL EXPEDITED EXPENSES SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS.
E. FIXTURES TO BE INSTALLED IN CEILINGS, INDICATE ON THE ARCHITECTURAL PLANS AS HAVING INSULATION IN CONTACT WITH THE CEILING SURFACE, SHALL BE IC RATED BY MANUFACTURER.
F. LIGHTING FIXTURES SHALL MEET THE AESTHETICS, DESCRIPTION AND SPECIFICATIONS, SUBSTITUTIONS SHALL INCLUDE PT. BY PT. CALCULATIONS.
G. LIGHTING FIXTURES, AS SPECIFIED, HAVE BEEN SO SELECTED TO ACHIEVE REQUIRED/DESIRED FOOTCANDLE LEVELS IN THEIR RESPECTIVE AREA. HENCE SPECIFIC FIXTURE CHARACTERISTICS WHICH MAY CREATE PARTICULAR ILLUMINATION RESULTS ARE ESSENTIAL. ANY DEVIATIONS FROM SPECIFIED FIXTURES SHALL DEEM THE SUBMITTING AGENT AND CONTRACTORS RESPONSIBLE IN PROVIDING SUCH DEVIATION FOR THE ARCHITECT/ENGINEER AND OWNER TO MAKE AN INFORMED DECISION.
H. SUBSTITUTIONS APPROVED BY THE ENGINEER PREVIOUS TO BID ARE ACCEPTABLE AS LONG AS THEY ARE EQUAL TO THE FIXTURE SPECIFIED, UNLESS OTHERWISE NOTED. THIS INCLUDES LENS, COLORS, REFLECTORS, PHOTOMETRICS, HOUSING MATERIAL, FINISHES, ETC. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER WITH CUT SHEETS FOR APPROVAL. LISTED SEPARATELY SO THE ARCHITECT, ENGINEER AND OWNER CAN MAKE AN INFORMED DECISION. SUBSTITUTE FIXTURES SHALL BE PRICED WITH THE SPECIFIED FIXTURE AND ALL 4 LED LAMPS SHALL BE 3500 K. OTHER LAMPS SHALL BE AS SCHEDULED.
J. ANY FIXTURE WITH THE TEXT "NL" ADJACENT TO IT SHALL INDICATE THAT THAT FIXTURE IS A NIGHT LIGHT (24HR LIGHT). THE FIXTURE SHALL BE CONNECTED TO THE UNSWITCHED HOT LEG OF THE INDICATED CIRCUIT.
K. ACRYLIC PRISMATIC LENSES SHALL BE 0.156" NOMINAL MINIMUM THICKNESS.
L. ALL EXIT AND EMERGENCY FIXTURES SHALL COMPLY WITH NCSCB STANDARDS AND HAVE AUTOMATIC TESTING DEVICES.
M. LED EMERGENCY BATTERY SHALL PROVIDE 1400 MINIMUM LUMENS OUTPUT FROM 1 LAMP FOR 90 MINUTES MINIMUM.
N. LED MODULES SHALL BE REPLACEABLE.
O. PROVIDE MANUFACTURER INSTALLED NEC 2014 ARTICLE 410.130 (G) COMPLIANT DISCONNECTING MEANS FOR ALL APPLICABLE FIXTURES.
P. SEE SPECIFICATIONS SECTIONS 265100 AND 265200 FOR ADDITIONAL REQUIREMENTS.
Q. ELECTRICAL CONTRACTOR SHALL RECEIVE APPROVAL FOR ALL LIGHTING FIXTURES FROM ARCHITECT/OWNER PRIOR TO PURCHASE AND ROUGH-IN.

BDA INSTALLATION NOTES

- ALL WIRING SHALL BE IN ACCORDANCE WITH LOCAL AND NATIONAL CODES, INCLUDING NFPA 72 (2013 EDITION) AND NEC.
- A BDA SYSTEM IS AN EMERGENCY RESPONDER RADIO ENHANCED SYSTEM IN COMPLIANCE WITH THE NC FIRE CODE, SECTION 510.
- WHERE REQUIRED, WIRING SHALL BE RUN IN MINIMUM 3/4" CONDUIT. SURFACE METAL RACEWAY IS ACCEPTABLE.
- PLENUM RATED COAXIAL CABLE WITHOUT CONDUIT, MAY BE ACCEPTABLE FOR HORIZONTAL RUNS IN AREAS OTHER THAN WHERE WATERPROOF DEVICES ARE REQUIRED. HOWEVER, CONDUIT SHALL BE USED TO PENETRATIONS IN RATED WALLS SHALL BE MADE IN CONDUIT PER APPROPRIATE U.L. SYSTEM.
- MANUFACTURER'S 1/2" COAXIAL CABLE SHALL BE USED FOR THE BDA SYSTEM, DUE TO ITS LOW OHM LOSS PROPERTIES.
- THE DIRECTIONAL DONOR ANTENNA ON THE ROOF SHALL BE TIED INTO THE BUILDING GROUNDING SYSTEM.
- ALL CABLES USED FOR BDA SHALL BE GROUNDED TO THE BUILDING GROUNDING SYSTEM.
- THE CABLE BETWEEN THE DONOR ANTENNA AND THE AMPLIFIER MAY BE RUN TO THE ROOF, BUT IT MUST BE IN CONDUIT.
- THE LIGHTING ARRESTOR SHALL BE INSTALLED AS SHOWN ON THE TYPICAL ANTENNA INSTALLATION DETAIL. THE ARRESTOR PART IS THE "COAXIAL SURGE PROTECTOR," BDA-LA-PBAX-6G.
- THE CABLE FROM THE DONOR ANTENNA TO THE AMPLIFIER SHALL BE SEPARATED FROM THE RISER CABLE FROM THE BDA TO THE INDOOR ANTENNA. THIS REQUIREMENT APPLIES TO THE RISER.
- IF BOTH CABLES ARE NOT IN CONDUIT, THE MINIMUM SEPARATION SHALL BE SIX (6) FEET.
- IF AT LEAST ONE CABLE IS IN CONDUIT, THE MINIMUM SEPARATION SHALL BE THREE (3) FEET.
- THESE CABLES ARE ALLOWED TO CROSS A MAXIMUM OF ONE TIME.
- THE BDA AMPLIFIER ENCLOSURE SHALL BE INSTALLED ON METAL STRUT CHANNEL (TO ALLOW AIRFLOW). SEE INSTALLATION DIAGRAM.
- THE BDA AMPLIFIER AND BATTERY ENCLOSURES SHALL BE GROUNDED TO THE BUILDING GROUNDING SYSTEM UTILIZING A SORT, DIRECT PATH WITH THE MINIMUM NUMBER OF BENDS (GROUNDING CABLES SHALL NOT REVERSE DIRECTION WHEN CONNECTING TO TERMINATION POINTS.)
- A.C. WIRES SHALL BE RUN IN SEPARATE CONDUIT FROM D.C. WIRING, SUCH THAT A SYSTEM ALARM DOES NOT DE-ENERGIZE THE CONTROL PANEL. MINIMUM SIZE WIRE TO BE AWG 12 THIN. PROTECTION AGAINST VOLTAGE TRANSIENTS AND SURGES SHALL BE INSTALLED AT THE ELECTRICAL PANELBOARD AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- PRIMARY AC POWER TO THE BDA AMPLIFIER SHALL BE DEDICATED CIRCUIT.
- REDUNDANT AC POWER TO THE BDA AMPLIFIER SHALL BE ANY 120VAC CIRCUIT. (PROVIDING A SECOND (REDUNDANT) POWER CIRCUIT IS PER THE MANUFACTURER'S RECOMMENDED PRACTICE.)
- CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED BY THE SYSTEM TYPE: i.e. "EMERGENCY COMMUNICATION SYSTEM" (ECS)
- CONDUIT FOR THE DONOR (ROOF) ANTENNA AND FOR THE RISER COAXIAL CABLE SHALL BE PARALLEL TO THE DBA ENCLOSURE. THOSE CONDUIT SHALL TERMINATE WITH A BUSHING WITHIN TWO (2) FEET OF THE BOTTOM OF THE ENCLOSURE. TECHNICIANS SHALL MAKE THE CONNECTION PROVIDED, PRE-WIRED 1/4" FLEX CABLE FROM THE BDA.
- INSTALLATION REQUIREMENTS TO COMPLY WITH NFPA 72, SECTION 24.3.6.8:
- THE RISER COAXIAL CABLE SHALL BE INSTALLED IN A 2 HOUR RATED ENCLOSURE OR SHAFT. (2 HOUR RATED COAXIAL CABLE IS NOT AVAILABLE AT THE CORRECT LOW OHM LOSS RATING.)
- THE SPLITTER CONNECTIONS BETWEEN THE RISER CABLE AND THE HORIZONTAL FEEDER CABLE SHALL ALSO BE MADE WITH A 2 HOUR RATED ENCLOSURE. THE FEEDER CABLE PASSAGE THROUGH THAT 2 HOUR ENCLOSURE SHALL BE FIRE STOPPED WITH THE APPROPRIATE U.L. SYSTEM.
- ALL FEEDER CABLES SHALL BE PLENUM RATED AT A MINIMUM. (FEEDER CABLES ARE THE HORIZONTAL RUNS TO THE DAS.)
- WHEN SPLITTER CONNECTIONS ARE IN CONDUIT, PROVIDE A MINIMUM 12 INCH x 12 INCH JUNCTION COX TO MAKE THE CONNECTION.
- THE BDA ANNUNCIATOR SHALL BE INSTALLED NEAR THE FIRE ALARM CONTROL PANELPER THE INSTALLATION NOTES ON THIS SHEET.
- ALL FIELD WIRING SHALL BE CHECKED FOR SHORTS, OPENS, AND GROUNDS BEFORE JACKING CONNECTIONS.
- SEE MANUFACTURER'S SHEETS FOR MOUNTING DETAILS.
- ALL JUNCTION BOX COVERS SHALL BE RED IN COLOR. THOSE IN FINISHED AREAS ARE PERMITTED TO MATCH THE FINISH COLOR.
- ALL PENETRATIONS THROUGH RATED WALLS SHALL BE SEALED USING APPROPRIATE U.L. SYSTEM.



1 BDA RISER DIAGRAM
NO SCALE

BDA PROJECT NOTES IN TESTING AND INSTALLATION SEQUENCING

- A PRELIMINARY SITE SURVEY IS NEEDED TO DETERMINE THE EXISTING dBm SIGNAL STRENGTH.
- A MORE DETAILED SURVEY WILL MAP THE BUILDING ONCE THE BUILDING IS SUBSTANTIALLY COMPLETED.
- THE NEXT SIGNAL STRENGTH SURVEY WILL COMPLY WITH THE 2018 NCFC, 510.5.3 AND NFPA 72, 24.5.2.1 (2013 EDITION)
- EACH FLOOR SHALL BE DIVIDED INTO 20 (APPROXIMATELY) EQUAL TEST AREAS. THE WORST CASE SIGNAL STRENGTH READING SHALL BE RECORDED. PROVIDE 90 PERCENT FLOOR AREA RADIO COVERAGE.
- CRITICAL AREAS, IF PRESENT, SHALL BE SURVEYED SEPARATE FROM THE EQUAL TEST AREAS:
- EXIT STAIRS
- EXIT PASSAGEWAYS
- ELEVATOR LOBBIES
- AT STANDPIPE CABINETS
- SPRINKLER SECTIONAL VALVE LOCATIONS
- AHJ MAY REQUIRE ADDITIONAL LOCATIONS.
- CRITICAL AREAS SHALL BE PROVIDED WITH 99 PERCENT RADIO COVERAGE.
- THE MINIMUM SIGNAL STRENGTH OF -95 dBm IS REQUIRED.

Branch Panel: (X)MH2

Location: Supply From: Mounting: Enclosure: NEMA 1				Volts: 480Y/277 Phases: 3 Wires: 4				A.I.C. Rating: 10,000 AMPS SYMMETRICAL Mains Type: MAIN CB Mains Rating: 100.0 A MCB Rating: 100.0 A					
Notes:													
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT			
1	(X)HOOD FAN - 18	15.0 A	3	0 VA	0 VA		3	15.0 A	(X)UH #3	2			
3					0 VA	0 VA				4			
5						0 VA				0 VA	6		
7											8		
9	(X)HOOD FAN - 19	15.0 A	3	0 VA	3635...		3	25.0 A	AHU18 (NOTE 1, 2)	10			
11					0 VA	3635...					12		
13										0 VA	3635...		14
15													16
17	(X)UH #1	15.0 A	3	0 VA	0 VA		3	15.0 A	(X)AHU #19	18			
19					0 VA	0 VA					20		
21				0 VA	0 VA					0 VA	0 VA	-- -- SPACE	22
23						0 VA				0 VA	-- -- SPACE	24	
25	SPACE	--	--	0 VA			--	--	SPACE	26			
27	SPACE	--	--		0 VA	0 VA	--	--	SPACE	28			
29	SPACE	--	--			0 VA	0 VA	--	SPACE	30			
Total Load:				3635 VA	3635 VA	3635 VA							
Total Amps:				13.1 A	13.1 A	13.1 A							
Legend:													
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
HVAC		10905 VA		100.00%		10905 VA							
								Total Conn. Load: 10905 VA					
								Total Est. Demand: 10905 VA					
								Total Conn.: 13.1 A					
								Total Est. Demand: 13.1 A					
Notes:													
1. HVAC EQUIPMENT MUST USE TYPE HACR BREAKER.													
2. UTILIZE EXISTING BREAKER.													

Branch Panel: (X)LH1

Location: Supply From: Mounting: Enclosure: NEMA 1				Volts: 480Y/277 Phases: 3 Wires: 4				A.I.C. Rating: 10,000 AMPS SYMMETRICAL Mains Type: MAIN CB Mains Rating: 100.0 A MCB Rating: 100.0 A			
Notes:											
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
1	(X)LIGHTING CAFETERIA 464	20.0 A	1	0 VA	0 VA			1	20.0 A (X)LIGHTING CAFETERIA 464	2	
3	(X)LIGHTING CAFETERIA 464	20.0 A	1		0 VA	0 VA		1	20.0 A (X)LIGHTING KITCHEN 474	4	
5	(X)LIGHTING CAFETERIA 464	20.0 A	1			0 VA	0 VA	1	20.0 A (X)LIGHTING MECHANICAL 488 & EMERG LTS	6	
7	(X)LIGHTING CORR 447 & EMERG LTS	20.0 A	1	0 VA	0 VA			1	20.0 A SPARE	8	
9	(X)LIGHTING GUIDANCE 458	20.0 A	1		0 VA	1117...		1	20.0 A LTS: CAFETERIA (NOTE 1)	10	
11	(X)LIGHTING RECEPT 434	20.0 A	1			0 VA	0 VA	1	20.0 A (X)LIGHTING EXTERIOR H	12	
13	SPACE	--	--	0 VA	0 VA			--	-- SPACE	14	
15	SPACE	--	--		0 VA	0 VA		--	-- SPACE	16	
17	SPACE	--	--			0 VA	0 VA	--	-- SPACE	18	
19	SPACE	--	--	0 VA	0 VA			1	20.0 A SPARE	20	
21	SPARE	20.0 A	1		0 VA	0 VA		1	20.0 A SPARE	22	
23	SPARE	20.0 A	1			0 VA	0 VA	1	20.0 A SPARE	24	
25	SPARE	20.0 A	1	0 VA	0 VA			1	20.0 A SPARE	26	
27	SPARE	20.0 A	1		0 VA	0 VA		1	20.0 A SPARE	28	
29	SPARE	20.0 A	1			0 VA	0 VA	1	20.0 A SPARE	30	
Total Load:				0 VA	1117 VA	0 VA					
Total Amps:				0.0 A	4.0 A	0.0 A					
Legend:											
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals			
Lighting		179 VA		100.00%		179 VA					
LTS		940 VA		125.00%		1175 VA					
								Total Conn. Load: 1117 VA			
								Total Est. Demand: 1351 VA			
								Total Conn.: 1.3 A			
								Total Est. Demand: 1.6 A			
Notes:											
1. PROVIDE BREAKER INDICATED, BREAKER AIC RATING MUST MATCH PANEL AIC RATING.											

PANELBOARD: (X)PH21

LOCATION: MOUNTING: RECESSED NEMA1 MAIN DEVICE: 100.0 A MAIN CB BUS AMPS: 200 AMPS				VOLTAGE: 120/240 V, 1 ø 3 W. A.I.C. RATING: 10,000 AMPS SYMMETRICAL SPECIAL:					
LOAD DESCRIPTION	BKR	POLES	CKT	A	B	CKT	POLES	BKR	LOAD DESCRIPTION
(X)RCPT: MICROWAVE	20.0 A	1	1	700...100...		2	1	20.0 A	(X)RCPT: MICROWAVE
(X)RCPT: MICROWAVE	20.0 A	1	3		900...100...	4	1	20.0 A	(X)RCPT: MICROWAVE
RCPTS: CAFE (NOTE 1)	20.0 A	1	5	540...100...		6	1	20.0 A	(X)RCPT: MICROWAVE
EMERGENCY COMM SYST	20.0 A	1	7		180...100...	8	1	20.0 A	(X)RCPT: MICROWAVE
EMERGENCY COMM SYST	20.0 A	1	9	180...0 VA		10	--	--	SPACE
SPACE	--	--	11		0 VA 0 VA	12	--	--	SPACE
SPACE	--	--	13	0 VA 0 VA		14	--	--	SPACE
SPACE	--	--	15		0 VA 0 VA	16	--	--	SPACE
SPACE	--	--	17	0 VA 0 VA		18	--	--	SPACE
SPACE	--	--	19		0 VA 0 VA	20	--	--	SPACE
SPACE	--	--	21	0 VA 0 VA		22	--	--	SPACE
SPACE	--	--	23		0 VA 0 VA	24	--	--	SPACE
TOTAL LOAD:				3 kVA	3 kVA				
TOTAL AMPS:				28 A	25.5 A				
LOAD CLASSIFICATION		CONNECTED		DEMAND		ESTIMATED		PANEL TOTALS	
Other		360 VA		100.00%		360 VA		CONNECTED LOAD: 6466 VA	
RCPT		540 VA		100.00%		540 VA		ESTIMATED DEMAND: 6466 VA	
								CONNECTED CURRENT: 26.9 A	
								EST. DEMAND CURRENT: 26.9 A	
NOTES:									
1. PROVIDE BREAKER INDICATED, BREAKER AIC MUST MATCH PANEL AIC RATING.									