

GENERAL LIGHTING NOTES

General Provisions

- Provide all materials as detailed on drawings, specifications and/or schedules, and labor as required to achieve a complete and operating lighting system.
- Contractor shall be responsible for all electrical permits and inspection fees. It is the responsibility of the contractor to schedule all electrical inspections required by the building department and serving utilities.
- Contractor shall perform all work in strict accordance with all local and national governing codes, including seismic, if applicable. Work not in conformance with applicable codes shall be brought into compliance at the Contractor's expense.
- All electrical material and equipment shall be in new condition when installed. All equipment shall be listed, labeled or certified by a nationally recognized testing laboratory. Immediately notify lighting designer if any specified lighting equipment is not appropriately listed, or arrives without appropriate labeling.
- All equipment shall be factory tested to ensure proper operation prior to shipment to job site.
- Contractor shall guarantee all materials and workmanship related to the electrical installation for a minimum period of one year from the date of ownership turnover. Any defects in materials or workmanship during this guarantee period shall be corrected at the contractor's expense.
- Contractor shall visit site prior to bid date, to verify all existing conditions to be encountered in the installation of all new equipment, fixtures, devices, feeders, etc. Exact installation method and requirements shall be verified and determined prior to bid date. Contractor shall immediately notify lighting designer of any required modifications that are not shown on the drawings. Submittal of bid indicates contractor is cognizant of all job site conditions and work to be performed.
- All equipment, electrical characteristics, locations, and connection requirements shall be verified prior to any rough-in work.
- The complete electrical system shall be grounded in accordance with NEC requirements.
- Electrical contractor shall be licensed in the jurisdiction where the project is located, and capable of employing the proper labor force necessary to complete the installation as instructed by owner.
- Provide shipment of all lighting and related equipment to be delivered to the job site.
- Delivery of equipment to the job site shall be in clearly identified crates, cartons, or appropriate shipping containers as to item, quantity, and installation location. Once received, lighting equipment shall be secured and protected from the elements.
- Contractor shall be capable of making emergency warranty repairs within twenty-four (24) hours of notification when a system or component malfunctions during use.
- All measurements found in lighting plans are approximate. Contractor shall make field measurements based on actual site conditions to develop complete orders and install systems per drawings and specifications.
- Emergency egress lighting shall be the responsibility of the electrical engineer in consultation with the owner's representative.
- Contractor shall properly verify all circuitry, dimming and control prior to test and adjust phase commencing.
- Contractor to refer to Architectural (A) and Lighting Drawings (EL) and specification packages for all mounting heights and details for special mounting requirements.
- Contractor services shall include necessary systems integration and engineering, project management and interface with owner, consultants, architects, contractors and all other parties necessary to provide a complete and working lighting system.
- Contractor services shall include a Systems Integrator (SI) to properly coordinate the installation and set up of the specialty fixtures and control equipment (e.g. DMX, Ethernet, RS232, SMPTE etc.) on the job site regardless of the manufacturer of the fixtures or control equipment.

Installation

- All fixture voltages shall be verified by the contractor prior to the release of fixture order listing as required by local codes.
- Fixtures shall have appropriate UL or other recognized testing agency label, as well as damp or wet listing as required by local codes.
- Fixtures shall include accessories for installation according to local and national codes.
- Prior to ordering lighting equipment, the contractor shall verify:
 - Fixture locations
 - Fixture mounting conditions
 - Ceiling trim compatibility
 - Recess depths
 - Existence of IC or other restrictive conditions
 - Fire rated ceiling or locations
 - Fixture voltage
- Contractor to provide and coordinate approved fire-rated enclosures for lighting fixtures located in a fire-rated ceiling.
- Contractor to coordinate IC housing requirements, if any, as required.
- Lamps and accessories (e.g. color filters, louvers, etc.) shall be installed in fixtures in accordance with the provided fixture schedule.
- Ceiling thickness in excess of 3/4" or 20mm shall be identified in writing by the Contractor or Architect.
- Fixtures shall be ordered with the appropriate ballasts complete UL, CBM or other recognized testing lab labels. Where required, ballasts shall conform to Title 24 or other energy code requirements for performance, switching, and wiring (e.g. tandem wired, bi-level switching, etc.).
- Walls directly illuminated by uplight or downlight wall wash shall be installed and finished in a manner to eliminate shadows or blemishes (e.g. hang dry wall vertically, and level 5 drywall finish).
- The drawings are diagrammatic and represent the design intent of the equipment, devices, etc. to be connected and the circuits to which they are to be connected to. Contractor shall install all conduit, j-boxes, etc., as required for a complete and operating system.
- All custom length fixtures (e.g. continuous wall slot fixtures) shall be field measured prior to ordering, and manufacturer shop drawings issued to the lighting designer for review prior to release for manufacture.
- Contractor shall include all miscellaneous items required to complete work and make fixture and lighting systems fully operational.
- Lighting fixtures, shown in these drawings, shall not be used as worklights during construction and shall be fully operational at the time of opening to the public.
- Contractor shall provide Owner and Lighting Designer with one set each of electrical "As-Builts" at the completion of job.
- Lighting Design Alliance specifically reserves the right to relocate any equipment or outlet at no increase in contract cost prior to its installation (in case of standard product) or release for manufacture (in the case of custom product), regardless of prior shop or design drawing review.
- Contractor shall be responsible for rough and final aiming and focus of all lighting fixtures as directed by lighting designer during Test and Adjust phase.

Execution

- All conduit runs shall be concealed unless shown otherwise, or approved.
- Existing conditions shown are from available record drawings and visual field survey and are shown for reference only. Contractor shall verify actual existing conditions at site.
- Contractor to supply a minimum of two electricians for each Lighting Designer directing focus during the Test and Adjust phase (AKA Focus and Programming). Electricians to be minimum journeyman level experience. Contractor must supply adequate support including ladders, lifts or other equipment required to access fixtures at the time for focus, including evening or night work as may be required due to schedule conflict or daylight impact.
- Contractor to have all necessary equipment available throughout Test and Adjust phase including, but not limited to:
 - Standard contractor electrician hand tools.
 - Socket set
 - Clean lint-free towels or wipes to clean lenses and reflectors
 - Spare lamps for fixtures being focused
 - Ladders, fully-charged lifts or other means of access to areas being focused.
 - Safety harnesses or other devices as required.

Submittals

- Contractor to submit for approval on the products he intends to furnish within (7) days of award of contract. Failure to submit within deadline constitutes a guarantee that only the base specified products will be supplied and that no other products, whether listed as alternates or not, will be considered.
- Requests for approval of non-specified products must be accompanied by the following at least five (5) business days in advance of the bid submittal date:
 - Specification data sheet complete with manufacturer name and specified model number, as well as manufacturer's published photometrics
 - A list of comparable products where the product has been used in the last (2) years
 - Functioning sample of product, complete with cord and plug and specified lamp
- Manufacturers of submitted products must have been in business for five years and in no instance will this project be the occasion of the first installation of this product if it is not listed on the specification.
- Contractor shall allow proper ordering time for procurement of fixtures. Lighting Design Alliance shall be notified immediately of any product substitutions as a result of delivery, prior to ordering alternate product. Failure to order fixtures with adequate lead-time to meet the installation schedule does not relieve the contractor of the responsibility to provide and install the specified product, even after substantial completion, with all labor and material charges for other trades at the contractor's expense.
- Should a manufacturer fail to deliver a product that has been ordered within reasonable lead-time, contractor shall notify Lighting Design Alliance with a proposed alternate fixture. Lighting Design Alliance shall maintain final authority for authorization of any substitution.
- Lamps and any accessories specified shall be included in the submittal package for all fixtures. If no submittal is made on lamps, lamps must be provided as specified, or from approved manufacturers: Philips, Osram Sylvania, General Electric, Ushio, and Venture.
- Contractor shall provide Complete Maintenance Manuals including, but not limited to:
 - Required scheduled maintenance.
 - Original Manufacturer's Equipment (OME) technical data sheets.
 - Detailed operating procedures.
 - A list of recommended spare parts and lamps.
 - Installation wiring diagrams.
 - Shop drawings
 - Installation and/or construction As-Built drawings.

Fixture Specifications

- All lighting fixtures shall be mounted and supported in accordance with applicable safety standards and all national and local electrical codes.
- All exterior equipment shall be rated for wet location and the IP rating of all equipment shall conform to the conditions in which the fixture is mounted.
- Contractor shall provide fixture-mounting kits as required to suit the exact type of ceiling or condition to which they are mounted.
- All fixtures shall be supplied with accessories as listed.
- All remote transformers and/or ballasts are to be located as close to the fixture as possible, hidden from guest view in an accessible compartment that is well ventilated to provide heat dissipation.
- All transformers shall be fused on the secondary side.
- Contractor to supply lamps only from approved lamp manufacturers. Approved manufacturers: Philips, Osram Sylvania, General Electric, Ushio, Venture
- Color filters shall be glass or dichroic unless otherwise indicated in drawings or specifications.
 - Where a specific color has not been called for in specifications, contractor shall confirm color with lighting designer prior to ordering.
 - Contractor to provide 20% additional color filters for each color and size.
- Contractor to permanently label all color media in a manner that does not interfere with light output. Contractor to verify all fixtures specified with a color filter are supplied with any and all attachment devices for the filter. This includes frames, snap rings, attachment hardware and/or filter standoff. All attachment hardware must be submitted by supplier for review prior to ordering of fixture. Review and approval shall be by lighting designer.
- Contractor to verify all fixtures specified with a template (pattern or "gobo") are supplied with any and all attachment devices for the pattern. This includes pattern holders, snap rings, and/or installation hardware. Contractor to verify size and type of template material in conjunction with fixture specifications and lighting instrument schedule. All attachment hardware must be submitted by supplier for review prior to ordering of fixture. Review and approval shall be by lighting designer.
- Contractor to provide lamps for all fixtures in full cases to exceed the number required by no less than 10%.
- Contractor to replace all burned out or inoperative lamps at the end of the construction phase prior to Test and Adjust (also known as "aiming" of "focusing") phase and once again prior to Owner occupancy or project opening.

System Integrator

- Lighting "System Integrator" (SI) shall mean the contractor responsible to provide, furnish and/or install, as noted, the specialty lighting equipment, dimming and control systems.
- The SI shall terminate all lighting control data connections including, but not limited to, remote console data stations, lighting dimmer cabinets, lighting relay cabinets, architectural lighting control stations, lighting control rack, and all other low voltage lighting controls required to provide a functioning and complete lighting control network.
- The SI shall set all necessary DMX Network addresses for each fixture or device requiring or receiving control signal according to lighting design paperwork/instrument schedule.
- The SI shall certify that all lighting data cables are terminated correctly and functioning.
- Services shall include necessary systems integration and engineering, project management and interface with owner, consultants, architects, contractors and all other parties necessary to provide a complete and working lighting system.
- Services may include site visits and/or attendance at coordination meetings with installation personnel. A minimum of two (2) site visits and two (2) coordination meetings are required during project duration and shall be included in base bid. Additional meetings and onsite time, as required, will be negotiable.
- Termination of Ethernet lighting network wiring may be completed by a qualified subcontractor under the direction of the SI. SI remains responsible for certifying or accepting certification that Ethernet system meets all Ethernet standards.
- All equipment shall be thoroughly tested, addressed, configured and "burned in" by the SI prior to shipment to the site to ensure mechanical and electrical integrity.
- The SI shall have been in the specialty lighting distribution and installation business for a minimum of five (5) years and shall have provided complete engineering and installation services on a minimum of five jobs of similar size and scope in the past five years.
- The SI shall include the services of a factory engineer, who shall be available to report to the job site within fourteen (14) days of receipt of request from the Owner, contractor, or Lighting Design Alliance, and shall remain at the job site until the system is fully operational to the satisfaction of the lighting designer and/or owner's representative.
- Specialty lighting equipment, such as automated luminaires and any device transmitting or receiving lighting control data shall be provided by SI
- Systems Integrators are subject to approval by Lighting Design Alliance and Owner

FIXTURE TYPE LABELING NOMENCLATURE

DECORATIVE	LETTER #1 - FIXTURE TYPE	LETTER #2 - MOUNTING
D	Decorative	E Recessed / Recessed
		F Floor (Decorative)
		P Pendant (Decorative)
		R Recessed (Decorative)
		S Surface (Decorative)
		T Table (Decorative)
		W Wall (Decorative)
ARCHITECTURAL	LETTER #1 - FIXTURE TYPE	LETTER #2 - MOUNTING
A	Adjustable Accent / Flood	C Canopy
B	Barnes	E Recessed / Recessed
C	Light Column	H Handicaps
D	_____	L Landscape (softscope / spole)
E	Embayment / Ellipsoidal	P Pendant
F	Fixed Accent / Flood / Cylinder	R Recessed
G	In-Grade Uplight	S Surface
H	_____	T Track
I	_____	Z Specialty (C-Clamp, Truss, etc.)
J	_____	
K	Keypad / Touchscreen (No 2nd Letter)	
L	Linear (Line Voltage)	
M	Millwork / Pluck	
N	Panel / Light Pad	
O	_____	
P	Pole	
Q	Controls Device / Sensor (No 2nd Letter)	
R	Recessed Downlight	
	LETTER #2 - DOWNLIGHT TYPE	
	A Adjustable	
	D Flood	
	E Recessed / Recessed	
	W Washbasin	

GENERIC LIGHTING SYMBOLS

RL (RECESSED RECESS) (RECESSED LIGHT)	RD (RECESSED LIGHT) (RECESSED LIGHT)	RD-AIM (RECESSED LIGHT) (RECESSED LIGHT)	RD-SQ (RECESSED LIGHT) (RECESSED LIGHT)	RD-HV (RECESSED LIGHT) (RECESSED LIGHT)	RA (RECESSED LIGHT) (RECESSED LIGHT)	RA-SQ (RECESSED LIGHT) (RECESSED LIGHT)	RA-SQ-AIM (RECESSED LIGHT) (RECESSED LIGHT)
RA-HV (RECESSED LIGHT) (RECESSED LIGHT)	RW (RECESSED WALL) (RECESSED WALL)	RW2 (RECESSED WALL) (RECESSED WALL)	RWC (RECESSED WALL) (RECESSED WALL)	RW-SQ (RECESSED WALL) (RECESSED WALL)	UR-ELEV (RECESSED WALL) (RECESSED WALL)	UR-ELEV (RECESSED WALL) (RECESSED WALL)	UR-ELEV (RECESSED WALL) (RECESSED WALL)
2-BANG-AIM (RECESSED 2 LAMP) (RECESSED 2 LAMP)	2-BANG (RECESSED 2 LAMP) (RECESSED 2 LAMP)	3-BANG (RECESSED 3 LAMP) (RECESSED 3 LAMP)	4-BANG (RECESSED 4 LAMP) (RECESSED 4 LAMP)	ZYZ-BANG (RECESSED 4 LAMP) (RECESSED 4 LAMP)	2-BANG-WALL (WALL MTD 2 LAMP) (WALL MTD 2 LAMP)	DP (RECESSED PENDANT) (RECESSED PENDANT)	DP (RECESSED PENDANT) (RECESSED PENDANT)
AL (SURFACE MOUNTED LIGHT) (SURFACE MOUNTED LIGHT)	ALS (SURFACE MOUNTED LIGHT) (SURFACE MOUNTED LIGHT)	AL-AIM (SURFACE MOUNTED LIGHT) (SURFACE MOUNTED LIGHT)	TRES STRAP (SURFACE MOUNTED LIGHT) (SURFACE MOUNTED LIGHT)	2-RA (SURFACE MOUNTED LIGHT) (SURFACE MOUNTED LIGHT)	2-AL (SURFACE MOUNTED LIGHT) (SURFACE MOUNTED LIGHT)	2-RD (SURFACE MOUNTED LIGHT) (SURFACE MOUNTED LIGHT)	2-RA (SURFACE MOUNTED LIGHT) (SURFACE MOUNTED LIGHT)
WR (RECESSED STEPLIGHT) (RECESSED STEPLIGHT)	FLOOD (FLOOD LIGHT) (FLOOD LIGHT)	DW (RECESSED DOWNLIGHT) (RECESSED DOWNLIGHT)	XR (RECESSED) (RECESSED)	XR (RECESSED) (RECESSED)	XR (RECESSED) (RECESSED)	WS (WALL STRIP) (WALL STRIP)	LS (FLUORESCENT STRIP) (FLUORESCENT STRIP)
BOL (BALLAST) (BALLAST)	PH (POLE LIGHT) (POLE LIGHT)	PH (POLE LIGHT) (POLE LIGHT)	PH (POLE LIGHT) (POLE LIGHT)	PH (POLE LIGHT) (POLE LIGHT)	PH-Q (POLE LIGHT) (POLE LIGHT)	WM (WALL MOUNTED) (WALL MOUNTED)	WF (WALL STRIP) (WALL STRIP)
DW-ELEV (RECESSED ELEVATION) (RECESSED ELEVATION)	RA-ELEV (RECESSED DOWNLIGHT) (RECESSED DOWNLIGHT)	TRACK (TRACK LIGHTS) (TRACK LIGHTS)	PRES (PRESENT THEATRICAL) (PRESENT THEATRICAL)	PAR (PAR THEATRICAL) (PAR THEATRICAL)	ERS (EQUIVALENT THEATRICAL) (EQUIVALENT THEATRICAL)	DRL (READY LIGHT) (READY LIGHT)	BBOL (BOL LIGHT) (BOL LIGHT)
PIC-LITE (PICTURE LIGHT) (PICTURE LIGHT)	DT (DECK LIGHT) (DECK LIGHT)	CUT (CUT LIGHT) (CUT LIGHT)	CL (CENTER LIGHT) (CENTER LIGHT)	REVNUM (REVISION NUMBER) (REVISION NUMBER)	SD SWITCH (DIMMER) (DIMMER)	Q (CONTROL STATION) (CONTROL STATION)	NOTE (CONTROL ZONE NOTE) (CONTROL ZONE NOTE)
OS (OCCUPANCY SENSOR) (OCCUPANCY SENSOR)	J-BOX (JUNCTION BOX) (JUNCTION BOX)	J-BOX-W (WALL MOUNTED JUNCTION BOX) (WALL MOUNTED JUNCTION BOX)	TF (TRANSFORMER) (TRANSFORMER)	DUPLX (DUPLICATE LIGHT) (DUPLICATE LIGHT)	DUPLX (DUPLICATE LIGHT) (DUPLICATE LIGHT)	DUPLX (DUPLICATE LIGHT) (DUPLICATE LIGHT)	DUPLX (DUPLICATE LIGHT) (DUPLICATE LIGHT)
QUADPLEX (QUADPLEX LIGHT) (QUADPLEX LIGHT)	PLUGBOX (PLUGBOX) (PLUGBOX)	SECTION CALLOUT (SECTION CALLOUT) (SECTION CALLOUT)	ELEVATION CALLOUT (ELEVATION CALLOUT) (ELEVATION CALLOUT)	KEY (KEY) (KEY)	KEY (KEY) (KEY)	KEY (KEY) (KEY)	TAG TAG (LIGHT FIXTURE TYPE) (LIGHT FIXTURE TYPE)
LIGHT STRIP				LINEWEIGHTS			
LED				LINE TYPE: HIDDEN			
HIDDEN				LINE TYPE: LDD			
				LINE TYPE: LDD-HIDDEN			

