

Low Voltage Landscape Lighting Bid Package Specifications

Professional Standards & Practices

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Section A: General

A.1 Landscape Lighting Description

The term “Low Voltage Landscape Lighting System,” whether intended for landscape or architectural use and for the purposes of this document, shall be referred to as permanently installed landscape lighting systems. This includes the use of transformers and cabling for the purpose of illuminating landscape environments and the exterior of structures or buildings.

A.2 Purpose of Bid Package Specifications

These Specifications are intended to be utilized to identify the questions and expectations associated with the installation of any low voltage landscape lighting system. They should be used by both the contractor and the consumer. Additionally, they will serve to standardize this discipline and to improve upon the professionalism, quality and craftsmanship of trade contractors.

Section B: Bid Packages

B.1 Bid Package Components

Landscape lighting, as with any landscape architectural process should be practiced by professionals who are experienced in this craft. A bid package is established to provide consistent and detailed understanding of what is to be performed in order to accomplish the design intent of the Lighting Designer. Additionally, it should identify who, how, where and why these applications are expected.

Bid packages are typically offered by professional lighting designers and landscape architects. They act to regulate and to ensure effective communication of what is expected for the project. Also, they provide an accurate means to compare all bidding contractors, ‘apples-to-apples’ for the buyer’s benefit.

The components of a bid package should include, but are not limited to the following:

- Scope of work description and how it is to be performed.
- Contractor expectations—understanding of documents, controls, and site conditions.
- Contractor requirements—licensing, bonds, insurances, and/or permits.
- Control and coordination requirements between all parties.
- Inclusions and exclusions of the job.
- Time expectations—installation start and finish, and owner’s acceptance of job.
- Payment requirements for the job—T & M, lump sum and not-to-exceed.
- Change-order and substitution procedures.
- Completion of work incentives or penalties.
- Due date and where to submit bid package.

B.2 Working Drawings/Plan Set

The contractor should be supplied with an approved set of landscape lighting plans, as part of the bid package. This plan set is provided by the Lighting Designer or approved Landscape Architect, as per the working arrangement of the job owner. Working drawings are a necessary part of the communication process and they serve to visually locate lighting equipment, utilities, and lighting zones. These plans should include the following:

- Legal description of property and its defined boundaries.
- Quantities and location of all equipment to be used—transformers, fixtures, cable, controls, and other information.
- Phasing and lighting zones.
- Power and utilities.
- Equipment specifications and installation details.
- Equipment performance schedules.

B.3 Specifications

These are the specific written descriptions of products and services that are provided by the Lighting Designer. They are a legal provision to aid the contractor in how the job is to be implemented. All content is considered part of the bid package set and it aids the project owner in establishing criteria for “acceptable” equipment and processes for the installation work.

Specifications cannot be altered or changed without the Lighting Designer's approval. Equipment and material's substitution must be approved in advance of being awarded the job. These written specifications can be included on the actual working drawings, as part of the plan set, or in the form of a separate document.

Section C: Bid Package Component Descriptions

C.1 Scope of Work

The Scope of Work is a detailed description and division of the work to be performed under a contract in the completion of a project, which is typically broken out into specific tasks with deadlines. There can be two distinct Scopes depending on how they are used, as they are based upon "use"—Project Scope and Product Scope.

C.1.1 Project Scope

This is defined as the work that needs to be accomplished to deliver a product, service or result with the specified features and functions. It relates to the "How's" of the job and is 'work-oriented.'

C.1.2 Product Scope

This is defined as the features and functions that characterize a product, service or result. It applies to the "What's" of the job and are 'functional requirements.'

C.1.3 Scope Creep

This is a term used to refer to the incremental expansion of the Scope of a project. It may include and introduce more requirements that were not part of the initial planning of the project. These changes cause added and unnecessary hardships on the contractor by impacting both schedule and budget.

Scope Creep is likely to occur on larger projects or those that are fully defined prior to job implementation. Therefore, this provision needs to be discussed and agreed upon by all parties to avoid conflict. It is the contractor's responsibility to keep the project owner aware of this situation throughout these performance periods. This requires proper job management and it is normally achieved by working with experienced professionals. The contractor should encourage the use of Change-Orders to effectively track these events and to protect himself/herself during these occurrences.

C.2 Contractor Expectations

These are the expressed expectations established as part of the contract agreement of the working relationship. They are not isolated to only what is expected of the contractor with his/her performance, but it can be utilized to define the expectations that the contractor has of the project owner as well. They are considered a form of demands and they must be effectively communicated in writing, so that they are understood.

C.2.1 Owner Expectations of the Contractor

These are defined or provided by the project owner. Typically, they include: the understanding of all project documents, the controls established for job oversight and management, and that of the general site conditions, as they exist.

It is the contractor's responsibility to understand and clarify these needs. The project owner and the Lighting Designer cannot be held accountable for any contractor failings. The contractor should be expected to ask questions if he/she is unclear to any of these items.

C.2.2 Contractor Expectations of the Project Owner

The contractor has the right to submit his/her own set of expectations for the project owner to agree to, understand, and to follow. Although, many don't encourage this process it is available to them, in order to achieve mutual respect within this working arrangement. Typically, there are common provisions that are expected of the project owner and they include the following:

- Timely payment as per the payment schedule agreed upon.
- Authority to provide control as defined in the contract agreement.
- Written agreement and acceptance to all changes outside of the original contract, to include the compensation and adjustment of schedules during the event of Scope Creep.
- Compensation for any default issues related to scheduled payments or delays.

C.3 Contractor Requirements

These are the items necessary in order for something else to occur. In many cases, they are the requirements as stated or governed by law, a rule, an ordinance, or contract within a municipality, city, county, state, or country. They include such items as; a contractor's license, business license, payment and/or performance bond, insurances, permits, and any other like fees.

It is not uncommon that arrangements are made with the project owner to take on these selected responsibilities, such as permits or extra insurances. Regardless, they must be clarified contractually prior to the commencement of any work.

C.4 Control and Coordination Requirements

Every project must utilize some form of hierarchy or structure to ensure proper control and leadership over the construction process. This can be as simple as the project owner and the contractor, or it can be very layered with added managers and specifiers. However, the more people there are involved, the greater the chances are for miscommunication.

Many times you will find that the project owner will utilize an owner's representative in the form of a Landscape Architect or General Contractor. They are then required to oversee all sub-contractor abilities. Anything related to the control and coordination of the project must be defined prior to work commencement.

Note: Control and coordination can be a sensitive subject for everyone on the project and it must be effectively addressed. It should be encouraged that those who are advanced enough should insist on being in control over this highly specialized profession (landscape lighting). This is mentioned to best serve the customer and to ensure that a successful outcome can occur.

Problems can greatly compound when those WITH experience relinquish their abilities to those WITHOUT the necessary experience to guide or oversee the project. In most cases, failure is the end result. Most project owners, including their representatives lack the proper experience in lighting, education, and skills required in this specialty.

C.5 Inclusions and Exclusions

These are the items or services described to be either included or excluded within the contract agreement. They can be normal provisions or special considerations that are particular to the job.

C.6 Time Expectations

As with any contract agreement, the element of time needs to be addressed for control over this work. Typically, the date of when the project is to start, and the date of completion are expected. The contractor should allow for small scheduling variances, to provide flexibility to meeting the completion date.

There might be circumstances where the project owner will identify terms for scenarios, such as "Work Delays", and when schedules are not met. These events might be considered a form of penalty, and contractors might be expected to lose money or to compensate the project owner. Be aware of these conditions to ensure that you meet all deadlines. There are other scenarios where the contractor might be rewarded through the form of a bonus or through incentives in completing the project early.

C.7 Payment Requirements

All contractual agreements should identify how the contractor is to be compensated for his/her work. There are various payment structures that can be used, but each type requires varying amounts of time for management. Some have a higher contractor risk associated with them and some place emphasis on the performance of the contractor.

The following types of payments are seen throughout the construction process, but they are identified as a means to understand their application within the landscape lighting profession:

C.7.1 Progress Payments

This form of payment is most **typical on any installation job**, as they are controlled payments based upon performance or the completion of work. They are the fairest means of payment between both parties. Payments can be arranged in as few as two payments, or in several payments. Multiple payments can depend on the scope of work, the size of the project, and on performance.

In some circumstances, Contractor law dictates what amounts should be applied. This can vary from state to state, so one should be familiar with these legal expectations.

C.7.2 Time & Materials Payment

This form of payment is another typical form of payment structure. It is most likely used in works that have several unknown elements, such as **landscape lighting maintenance services**. This payment method is the fairest means to protect both contractor and owner.

Typically, the contractor will ask for all of the material costs up front, and they may include some of the labor in order to get the project under way. Depending on how large the project is, the contractor may compile the remainder of the job to be paid upon completion. The initial payment takes away the added risk of paying for expenses out-of-pocket and so that the project owner cannot take full advantage of the contractor. Risk only comes in at the final stages of the work where the

contractor's labor, overhead and profit may be affected, should the owner decide not to pay. Generally speaking, the contractor should know the owner by this point, as to their relationship to avoid these situations.

C.7.3 Cost Plus Payment

This form of payment is not very common in our discipline, because it is associated with the contractor being compensated for the actual cost of these material purchases "plus" an agreed to percentage above this. There is little advantage for the contractor in utilizing this payment structure. However, the contractor may see benefit in the relationship or the state of the project, as it may be on-going over a greater period of time.

The disadvantage of this method is that it requires additional measures in accounting. Typically, all purchases need to be approved prior to payment.

C.7.4 Firm Fixed Price Payment

This payment method is about the same as the 'Progress Payment' method. It's basically the same as or part of the Progress Payment, but it must define a specific price to complete the job. A total price is provided to the project owner to be accepted, in order to perform the work.

It is crucial that the contractor determines all the details of the Scope of Work, so that nothing is missed. Should the contractor be lax in this effort and not include everything, then this loss of revenue is on them—it is Not the owner's responsibility. The project owner can hold the contractor accountable for these items not included, unless an understanding can be agreed upon.

C.7.5 Not-To-Exceed Payment

This type of agreement is really a clause that protects the project owner from paying 'over' a certain amount—the cost is "not to exceed" this agreed upon amount. This type of arrangement is not normally seen or used in our line of work.

C.8 Change-Orders and Substitutions

These terms are used when changes occur outside of what was originally specified or negotiated in the contract.

C.8.1 Change-Orders

These are documents that direct the contractor to change the contract amount, requirements, or time. Ideally, these changes should be within the scope of the project. However, they can be outside of the scope, as long as they are accepted by all parties. Change-orders include the work added or deleted from the original scope, which alter the original contract amount and/or completion date.

There can be several reasons for these changes, but the following are the most common:

- Work was incorrectly estimated.
- Discovery of obstacles or possible efficiencies.
- Customer or contractor is inefficient or incapable of completing their required deliverables within budget, and additional money, time, or resources are required.
- Additional features or options are perceived and requested.
- Extreme weather conditions cause delays or require additional work to complete.

Once the change-order is approved, it generally serves to alter the original contract, such that the change-order now becomes part of the contract.

Change-orders should include much of the same provisions of a legal contract, such as: date, project name & address, acceptance clause, approval signatures of both project owner and contractor, and the inclusions or deletions—quantity, description, and cost information. A total amount should be defined on this written and approved form.

C.8.2 Substitutions

Substitutions are a means for the contractor to provide alternatives in products or equipment to the project, especially if they are specified by an outside source other than the contractor-designer service company. An alternate term that is frequently used is, "**Or Equal,**" and it too, reflects this ability to consider change.

It is important to note that substitutions will likely be considered, if certain conditions are satisfied. The following describe opportunities for this consideration:

- The request does not require extensive revisions to the contract documents.
- The request is in accordance with the general intent of the contract documents.

- The request is timely, fully documented, and properly submitted.
- The request can be provided within the contract time frame. However, it will not be considered if it is a result of the contractor's failure to pursue the work promptly or to coordinate these activities properly.
- The request will offer the owner a substantial advantage, in cost, time, quality, energy conservation, or other considerations, after deducting the additional responsibilities that the owner must assume. This would also include the additional costs associated with these revisions.
- The request can uphold the warranties required by the contract documents.
- These submissions include, but are not limited to; samples, manufacturer's data, cut-sheets/shop drawings, and other such items.

Note: One should be vigilant and aware of what is occurring under this heading of "Substitutions", as some will take advantage of those with less experience. Materials and products are Not always considered, "Equal To", yet they are portrayed as such. The reason for this is that some choose to financially benefit in this manner. Awareness is the key to ensuring what's best for the project.

C.9 Job Completion

This is a loose term used to describe when the job is finished according to the constraints of the contract. It is important that specific expectations are met in order to achieve this conclusion to the project. Typically, one might find that a final walk-through is necessary with the project owner or the owner's representative. However, this is the time to present any final documents and instructions to the owner for release on the final payment.

Most contracts arrange for a final payment to be made to the contractor "Upon Completion" of this final step. The professional contractor or designer will provide other supporting documents or measures to assure the customer in the future success with the project.

There are specific items to review and release during this final meeting with the owner. Typically, they include:

- As-Build plans and all necessary documentation that will aid in the future service provider in the maintaining of this equipment.
- Establishment of a regular scheduled maintenance program.
- Warranty and contact information for equipment and service providers.
- Final walk-through of entire job to answer all questions, view the results of the project, and gain an understanding of the system controls with the owner and any other pertinent team member.

C.10 Standards and Guidelines

These are the written documents that are widely used and accepted within the trade and industry. Typically, they are prepared by an authoritative organization or association that specializes in the trade and practice.

C.10.1 Guidelines

These are rules or instructions that identify how something should be performed. They are Not mandatory, and they are Not enforceable by law. Typically, many groups will utilize Guidelines as a preliminary effort prior to writing them as a formal Standard.

C.10.2 Standards

These are guidelines and rules that have been accepted by an authority, as a means of measure within the trades. They generally provide measures for quantity, weight, extent, value or quality. Standards are the precursor to and can be adopted into laws and regulations.

Standards must use "Definitive Mandatory Language." They cannot use permissive language, because this will make them unclear and ambiguous. Definitive Mandatory Language will ensure two things:

1. A clear basis for determining compliance.
2. That compliance verification can be uniformly accomplished.

Definitive Mandatory Language must be clear and unambiguous. It provides a basis for determining without a doubt, whether or not compliance with the standard has been achieved. If alternative paths for compliance are available, then they need to ensure a clear basis in this compliance determination.

C.10.3 Technical Standard

This is an established norm or requirement, regarding technical systems. It is usually a formal document that establishes uniform engineering or technical criteria, methods, processes and practices.

These may be developed privately or unilaterally, for example by a corporation, regulatory body, or group, such as a trade union or trade association.

- **A Standard Specification**—is an explicit set of requirements for an item, material, component, system or service. It is often used to formalize the technical aspects of a procurement agreement or contract.
- **A Standard Practice**—is a given set of instructions for performing operations or functions.
- **A Standard Guide**—is the general information or options that do Not require a specific course of action.