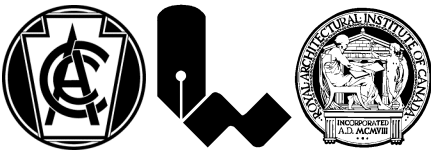


# design-build stipulated price contract

**Project:** LED STREETLIGHT RETROFIT FOR THE CORPORATION OF THE TOWN OF GANANOQUE, ONTARIO.

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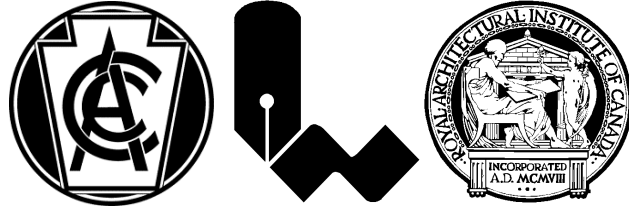


**Endorsed by:**

**The Canadian Construction Association  
Construction Specifications Canada  
The Royal Architectural Institute of Canada**

Apply a Document 14 copyright seal here. The application of the seal demonstrates the intention of the party proposing the use of this document that it be an accurate and unamended form of Document 14 – 2000 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

# INSTRUCTIONS TO USERS OF DOCUMENT 14 - 2000



## CCA-CSC-RAIC DOCUMENT 14 - 2000 DESIGN-BUILD STIPULATED PRICE CONTRACT

September 2000

The Design-Build Stipulated Price Contract is developed by the Joint Design-Build Working Group comprised of representatives from:

The Canadian Construction Association  
Construction Specifications Canada  
The Royal Architectural Institute of Canada

This document is based on CCDC 2 – 1994 ‘Stipulated Price Contract’ and CCAC 6 – 1994 ‘Canadian Standard Form of Agreement Between Client and Architect’. A number of terms in Document 14 are defined differently from other standard contract documents and, accordingly, all definitions should be read to properly understand the terms and conditions of this document.

### **THE FOLLOWING ARE THE BASIC PRINCIPLES OF DOCUMENT 14 - 2000:**

1. The *Owner* deals with one single administrative entity, the *Design-Builder*, who provides *Design Services* and *Construction* of the project under one contract package.
2. The *Contract Documents* include but not limited to:
  - Agreement,
  - Definitions,
  - General Conditions,
  - *Owner’s Statement of Requirements*, and
  - *Construction Documents*, after they have been accepted by the *Owner*.
3. After execution of the *Contract*, *Construction Documents* are prepared to illustrate the details of the design that meets the *Owner’s Statement of Requirements*. When accepted and signed by both the *Owner* and *Design-Builder*, these also become part of the *Contract Documents*.
4. *Change Orders* are issued to change:
  - the *Work*;
  - the *Owner’s Statement of Requirements* (scope);
  - the *Contract Price*; and
  - the *Contract Time*.

5. The only consultant recognized in the *Contract* is the *Design-Builder's Consultant*. The *Owner* may also appoint representatives or advisors, but they are recognized in the *Contract* as the *Owner's* authorized representatives.
6. The roles of the *Design-Builder's Consultant* are:
  - to design to the *Owner's Statement of Requirements* and prepare the *Construction Documents*;
  - to be the interpreter of the *Contract* and *Construction Documents* in the first instance;
  - to certify to the Design-Builder:
    - compliance with *Construction Documents*;
    - *Substantial Performance of the Work*;
    - progress payments based on the agreed schedule of values. (i) These will be used as support documents to the *Design-Builder's* applications for payment, or (ii) in the event that the *Design-Builder's Consultant* is the *Payment Certifier*, will become the payment certificates that authorize payments to the *Design-Builder*.
7. The *Design-Builder's* consultants are bound to fulfil their duties and responsibilities in accordance with the professional standards required by the various professions. The *Design-Builder's* consultants are consultants to the *Design-Builder* to provide the *Design Services*. This does not preclude them from performing normal professional duties, i.e. certifying payments, issuing certificates for payment, and interpretation of the *Contract* and *Construction Documents*.
8. The parties are required to identify the *Payment Certifier* in the Agreement, whose responsibility is to verify a claim and issue certificates for payment. The *Payment Certifier* may be the *Design-Builder's Consultant*, *Owner*, *Owner's Advisor*, or any knowledgeable third party, as designated by the *Owner*.
9. The *Owner's Advisor* is the person or entity employed or engaged by the *Owner* to assist in organizing and administering the design-build selection process and to provide ongoing professional assistance to the *Owner* during the *Project's* implementation as required by the *Owner*.

## **SUMMARY OF IMPORTANT DIFFERENCES BETWEEN THE 1997 AND THE 2000 EDITIONS:**

1. Introduce and explain the roles of the *Payment Certifier* in Article 5.1.1, Article 6.1, Definition 14, GC 1.1.3, GC 2.3.3, and Part 5 of the General Conditions.
2. Revise the Definition of Construction Documents to reaffirm that they must meet the general functional intent of the *Contract Documents*.

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Enquiries should be directed to:

The Secretary  
Canadian Construction Documents Committee  
400 - 75 Albert Street  
Ottawa, Ontario K1P 5E7  
Tel: (613) 236-9455  
Fax: (613) 236-9526  
[www.ccdc.org](http://www.ccdc.org)



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Document 14 is the product of a consensus-building process aimed at balancing the interests of all parties on the construction project. It reflects recommended industry practices. Document 14 can have important consequences. The CCA, CSC, and RAIC do not accept any responsibility or liability for loss or damage which may be suffered as a result of the use or interpretation of Document 14.

**AGREEMENT BETWEEN OWNER AND DESIGN-BUILDER**  
**For use when a stipulated price is the basis of payment.**

This Agreement made as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year 2015 .

by and between

THE CORPORATION OF THE TOWN OF GANANOQUE

---

hereinafter called the "Owner"

and

REALTERM ENERGY CORP., a corporation incorporated under the laws of the Province of Nova Scotia

---

hereinafter called the "Design-Builder"

The Owner and the Design-Builder agree as follows:

**ARTICLE A-1 THE WORK**

The Design-Builder shall:

1.1 perform the Work required by the Contract Documents for the design of output specifications for, and the  
installation and transfer of, LED streetlight decorative fixtures.

*insert above the title of the Work*

located at The Town of Gananoque, Ontario

*insert above the Place of the Work*

for which the Agreement has been signed by the parties, and for which The Corporation of the Town of Gananoque

*insert above the name of the Consultant*

is acting as, and is hereinafter called, the "Consultant",

1.2 do and fulfil everything indicated by the Contract Documents, and

1.3 commence the Work by the 1 day of February in the year 2016 and, subject to adjustment in  
Contract Time as provided for in the Contract Documents, attain Substantial Performance of the Work:

.1 \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_ ; or

.2 within 1 weeks after receipt of all approvals from authorities having jurisdiction.

*(Manually strike out inapplicable paragraph.)*

## ARTICLE A-2 AGREEMENTS AND AMENDMENTS

- 2.1 The *Contract* as described in Article A-3 of the Agreement - CONTRACT DOCUMENTS supersedes all prior negotiations, representations, or agreements, either written or oral, relating in any manner to the *Work*.
- 2.2 The *Contract* may be amended only as provided in the *Contract Documents*.

## ARTICLE A-3 CONTRACT DOCUMENTS

- 3.1 The following are the *Contract Documents* referred to in Article A-1 of the Agreement - THE WORK:

- Agreement Between *Owner* and *Design-Builder*
- Definitions of the Design-Build Stipulated Price Contract
- General Conditions of the Design-Build Stipulated Price Contract
- *Owner's Statement of Requirements*
- *Construction Documents*, after they have been accepted by the *Owner*

- \*  
Appendix 1: Letter of Intent between the Owner and the Design-Builder dated August 12, 2015  
Appendix 2: Investment Grade Audit dated October 14, 2015  
Appendix 3: Proceed Notice dated November 23, 2015

Supplementary Conditions - Pages 1 - 8, dated November 23, 2015

\* (Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g. Supplementary Conditions; Proposals; Specifications, giving a list of contents with section numbers and titles, number of pages, and date; Drawings, giving drawing number, title, date, revision date or mark; Addenda, giving title, number, date)

**ARTICLE A-4 CONTRACT PRICE**

4.1 The *Contract Price*, which excludes *Value Added Taxes*, is:

Four Hundred Twenty Thousand, Four Hundred Eighty Six and  
Zero Cents\*\* /100 dollars \$ 420,486

4.2 *Value Added Taxes* (of 13 %) payable by the *Owner* to the *Design-Builder* are:

Fifty Four Thousand, Six Hundred Sixty Three and  
Zero Cents\*\* /100 dollars \$ 54,663

4.3 Total amount payable by the *Owner* to the *Design-Builder* for the *Work* is:

Four Hundred Seventy Five Thousand, One Hundred Forty Nine and  
Zero Cents\*\* /100 dollars \$ 475,149

4.4 All amounts are in Canadian funds.

4.5 These amounts shall be subject to adjustments as provided in the *Contract Documents*.

**ARTICLE A-5 PAYMENT**

5.1 Subject to the provisions of the *Contract Documents*, and in accordance with legislation and statutory regulations respecting holdback percentages and, where such legislation or regulations do not exist or apply, subject to a holdback of N/A percent ( N/A %), the *Owner* shall:

.1 make progress payments to the *Design-Builder* on account of the *Contract Price* when due in the amount certified by The Corporation of the Town of Gananoque

*insert above the name of the Payment Certifier*

who is acting as, and is hereinafter called, the “*Payment Certifier*”, together with such *Value Added Taxes* as may be applicable to such payment, and

.2 upon *Substantial Performance of the Work*, pay to the *Design-Builder* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment, and  
.3 upon the issuance of the final certificate for payment, pay to the *Design-Builder* the unpaid balance of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payment.

5.2 In the event of loss or damage occurring where payment becomes due under the property and boiler and machinery insurance policies, payments shall be made to the *Design-Builder* in accordance with the provisions of GC 11.1 - INSURANCE.

5.3 Interest

.1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by arbitration or court, interest at Four percent ( 4 %) per annum above the prime rate on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded on a monthly basis. The prime rate shall be the lowest rate of interest quoted by the Royal Bank of Canada for prime business loans.

- .2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.3.1 of this Article on the amount of any claim advanced and for which the *Design-Builder* is thereafter entitled to payment, either pursuant to Part 8 of the General Conditions - DISPUTE RESOLUTION, or otherwise, from the date the amount would have been due and payable under the *Contract*, had it not been in dispute, until the date it is paid.

#### ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES

- 6.1 Notices in writing between the parties or between them and the *Consultant* shall be considered to have been received by the addressee on the date of delivery if delivered to the individual, or to a member of the firm, or to an officer of the corporation for whom they are intended by hand or by registered post; or if sent by regular post, to have been delivered within 5 *Working Days* of the date of mailing when addressed as follows:

The *Owner* at 30 King Street East, PO Box 100 Gananoque, ON K7G 2T6

*street and number and postal box number if applicable*

*post office or district, province, postal code*

The *Design-Builder* at Suite 400, 1237 rue de la Montagne, Montreal Quebec, H3G 1Z2

*street and number and postal box number if applicable*

*post office or district, province, postal code*

The *Consultant* at 30 King Street East, PO Box 100 Gananoque, ON K7G 2T6

*street and number and postal box number if applicable*

*post office or district, province, postal code*

\*The *Payment Certifier* at 30 King Street East, PO Box 100 Gananoque, ON K7G 2T6

*street and number and postal box number if applicable*

*post office or district, province, postal code*

*\* Manually strike out this paragraph if inapplicable*

#### ARTICLE A-7 LANGUAGE OF THE CONTRACT

- 7.1 When the *Contract Documents* are prepared in both the English and French languages, it is agreed that in the event of any apparent discrepancy between the English and French versions, the English / ~~French~~ \* language shall prevail.

*\* Complete this statement by striking out inapplicable term.*

- 7.2 This Agreement is drawn in English at the request of the parties hereto. La présente convention est rédigée en anglais à la demande des parties.

#### ARTICLE A-8 SUCCESSION

- 8.1 The *Contract* shall enure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors, and permitted assigns.



**In witness whereof** the parties hereto have executed this Agreement and by the hands of their duly authorized representatives.

SIGNED AND DELIVERED

in the presence of:

**Owner**

The Corporation of the Town of Gananoque

*name of Owner*

*date*

*signature*

**WITNESS**

*name and title of person signing*

*signature*

*signature*

*name and title of person signing*

*name and title of person signing*

**Design-Builder**

REALTERM ENERGY CORP.

*name of Design-Builder*

*date*

*signature*

**WITNESS**

Sean Neely, President

*name and title of person signing*

*signature*

*signature*

*name and title of person signing*

*name and title of person signing*

- N.B. Where legal jurisdiction, local practice, or Owner or Design-Builder requirement calls for:*
- (a) proof of authority to execute this document, attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign the Agreement for and on behalf of the corporation or partnership; or*
  - (b) the affixing of a corporate seal, this Agreement should be properly sealed.*

## DEFINITIONS OF THE DESIGN-BUILD STIPULATED PRICE CONTRACT

The following Definitions shall apply to all *Contract Documents*.

**1. Change Directive**

A *Change Directive* is a written instruction signed by the *Owner* directing a change in the *Work* within the general scope of the *Contract Documents*.

**2. Change Order**

A *Change Order* is a written amendment to the *Contract* signed by the *Owner* and the *Design-Builder* stating their agreement upon:

- a change in the *Work*;
- an amendment to the *Owner's Statement of Requirements*, if any;
- the method of adjustment or the amount of the adjustment in the *Contract Price*, if any; and
- the extent of the adjustment in the *Contract Time*, if any.

**3. Construction**

*Construction* means the total construction and related services required by the *Contract Documents*.

**4. Construction Documents**

The *Construction Documents* consist of the drawings and specifications that are prepared based on the *Contract Documents* by or on behalf of the *Design-Builder* and that are accepted and signed by the *Owner* and the *Design-Builder* after execution of the Agreement, as meeting the general functional intent of the *Contract Documents*.

**5. Consultant**

The *Consultant* is the person or entity identified as such in the Agreement. The term *Consultant* means the Architect, the Engineer, or entity licensed to practice in the province or territory of the *Place of the Work* and engaged by the *Design-Builder* to provide the *Consultant's Design Services* and to coordinate the provision of the *Design Services* of all other consultants employed by the *Design-Builder*. The term *Consultant* means the *Consultant* or the *Consultant's* authorized representative as designated by the *Design-Builder* to the *Owner* in writing.

**6. Contract**

The *Contract* is the undertaking by the parties to perform their respective duties, responsibilities, and obligations as prescribed in the *Contract Documents* and represents the entire agreement between the parties.

**7. Contract Documents**

The *Contract Documents* consist of those documents listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS and amendments thereto agreed upon between the parties.

**8. Contract Price**

The *Contract Price* is the amount stipulated in Article A-4 of the Agreement - CONTRACT PRICE.

**9. Contract Time**

The *Contract Time* is the time stipulated in paragraph 1.3 of Article A-1 of the Agreement - THE WORK from commencement of the *Work* to *Substantial Performance of the Work*.

**10. Design-Builder**

The *Design-Builder* is the person or entity identified as such in the Agreement. The term *Design-Builder* means the *Design-Builder* or the *Design-Builder's* authorized representative as designated by the *Design-Builder* to the *Owner* in writing.

**11. Design Services**

*Design Services* means the professional services for the design and construction administration performed by the *Consultant* or other consultants under the *Contract*.

- 12. Owner**  
The *Owner* is the person or entity identified as such in the Agreement. The term *Owner* means the *Owner* or the *Owner's* authorized agent or representative as designated by the *Owner* to the *Design-Builder* in writing.
- 13. Owner's Statement of Requirements**  
The *Owner's Statement of Requirements* consists of the site information and program requirements provided by the *Owner* and as listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS and amendments thereto agreed upon between the parties.
- 14. Payment Certifier**  
The *Payment Certifier* is the person or entity identified as such in the Agreement responsible for the issuance of certificates for payment. The *Payment Certifier* may be the *Consultant*, *Owner*, or any knowledgeable third party, as designated by the *Owner*.
- 15. Place of the Work**  
The *Place of the Work* is the designated site or location of the *Construction* identified in Article A-1 of the Agreement - THE WORK.
- 16. Product**  
*Product or Products* means material, machinery, equipment, and fixtures forming part of the *Work*, but does not include machinery and equipment used to prepare, fabricate, convey, or erect the *Work*, which are referred to as construction machinery and equipment.
- 17. Project**  
The *Project* means the *Owner's* enterprise of which the *Work* may be the whole or a part.
- 18. Provide**  
*Provide* means to supply and install.
- 19. Subcontractor**  
A *Subcontractor* is a person or entity, other than the *Consultant* or other consultants, having a direct contract with the *Design-Builder* to perform a part or parts of the *Work*, or to supply *Products* worked to a special design for the *Work*.
- 20. Substantial Performance of the Work**  
*Substantial Performance of the Work* is as defined in the lien legislation applicable to the *Place of the Work*. If such legislation is not in force or does not contain such definition, or if the *Work* is governed by the Civil Code of Quebec, *Substantial Performance of the Work* shall have been reached when the *Work* is ready for use or is being used for the purpose intended and is so certified by the *Consultant*.
- 21. Supplier**  
A *Supplier* is a person or entity having a direct contract with the *Design-Builder* to supply *Products* not worked to a special design for the *Work*.
- 22. Value Added Taxes**  
*Value Added Taxes* means such sum as shall be levied upon the *Contract Price* by the Federal or any Provincial or Territorial Government and is computed as a percentage of the *Contract Price* and includes the Goods and Services Tax, the Quebec Sales Tax, Harmonized Sales Taxes, and any similar tax, the payment or collection of which, by the legislation imposing such tax, is an obligation of the *Design-Builder*.
- 23. Work**  
The *Work* means the *Design Services* and *Construction* required by the *Contract*.
- 24. Working Day**  
*Working Day* means a day other than a Saturday, Sunday, or a holiday which is observed by the construction industry in the area of the *Place of the Work*.

## GENERAL CONDITIONS OF THE DESIGN-BUILD STIPULATED PRICE CONTRACT

### PART 1 GENERAL PROVISIONS

#### GC 1.1 CONTRACT DOCUMENTS

- 1.1.1 The intent of the *Contract Documents* is to include the *Design Services*, *Construction*, and other services necessary for the performance of the *Work* in accordance with these documents. It is not intended, however, that the *Design-Builder* shall supply products or perform work not consistent with, not covered by, or not properly inferable from the *Contract Documents*.
- 1.1.2 Nothing contained in the *Contract Documents* shall create any contractual relationship between the *Owner* and the *Consultant*, an other consultant, a *Subcontractor*, a *Supplier*, or their agent, employee, or any other person performing any of the *Work*.
- 1.1.3 If the *Payment Certifier* is not the *Consultant* or the *Owner*, the *Owner* shall, if requested in writing by the *Design-Builder*, disclose the contractual relationship between the *Owner* and the *Payment Certifier* by provision of a copy of the contract with the *Payment Certifier* to the *Design-Builder*.
- 1.1.4 The *Contract Documents* are complementary, and what is required by any one shall be as binding as if required by all.
- 1.1.5 Words and abbreviations which have well known technical or trade meanings are used in the *Contract Documents* in accordance with such recognized meanings.
- 1.1.6 References in the *Contract Documents* to the singular shall be considered to include the plural as the context requires.
- 1.1.7 The specifications are that portion of the *Contract Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, and the services necessary for the performance of the *Construction*.
- 1.1.8 The drawings are the graphic and pictorial portions of the *Contract Documents*, wherever located and whenever issued, showing the design, location, and dimensions of the *Construction*, generally including plans, elevations, sections, details, schedules, and diagrams.
- 1.1.9 Neither the organization of the specifications into divisions, sections, and parts, nor the arrangement of drawings shall control the *Design-Builder* in dividing the work among *Subcontractors* and *Suppliers* or in establishing the extent of the work to be performed by a trade.
- 1.1.10 If there is a conflict within the *Contract Documents*:
- .1 the order of priority of documents, from highest to lowest, shall be
    - the Agreement between the *Owner* and the *Design-Builder*,
    - the Definitions,
    - Supplementary Conditions,
    - the General Conditions,
    - the *Owner's Statement of Requirements*,
    - the *Construction Documents*:
      - Division 1 of the specifications,
      - Divisions 2 through 16 of the specifications,
      - material and finishing schedules,
      - drawings.
  - .2 drawings of larger scale shall govern over those of smaller scale of the same date.
  - .3 dimensions shown on drawings shall govern over dimensions scaled from drawings.
  - .4 later dated documents shall govern over earlier documents of the same type.
- 1.1.11 Copyright for the design and drawings prepared by or on behalf of the *Design-Builder* belongs to the *Consultant* or other consultants who prepared them.
- 1.1.12 Plans, sketches, drawings, graphic representations, and specifications, including computer generated designs, when prepared by the *Consultant*, or other consultants are instruments of their service and shall remain their property whether the *Construction* for which they are made is executed or not.

- 1.1.13 Submissions or distribution of the *Consultant* or other consultants' plans, sketches, drawings, graphic representations, and specifications to meet official regulatory requirements or for other purposes in connection with the *Work* is not to be construed as publication in derogation of their reserved rights.
- 1.1.14 The *Owner* may retain copies, including reproducible copies, of plans, sketches, drawings, graphic representations, and specifications for information and reference in connection with the *Owner's* design and construction and the *Owner's* use and occupancy of the *Work*. As a condition precedent to the use of such documents, the *Owner* shall have paid in full for any *Design Services* rendered. The *Design-Builder* will, prior to any payment being issued under this *Contract*, deliver to the *Owner* a consent and acknowledgement signed by the *Consultant* confirming the *Consultant's* agreement that the *Owner* may use any material produced by the *Consultant* and in which the *Consultant* retains any copyright in the manner set forth in paragraphs 1.1.13 to 1.1.16.
- 1.1.15 Except for reference purposes, the plans, sketches, drawings, graphic representations, and specifications shall not be used for additions or alterations to the *Work* or on any other project.
- 1.1.16 Models and architectural renderings furnished by the *Design-Builder* at the *Owner's* expense are the property of the *Owner*.

## **GC 1.2 OWNER SUPPLIED INFORMATION**

- 1.2.1 Unless the *Contract Documents* specifically state otherwise, the *Design-Builder*, *Consultant* and other consultants may rely on the accuracy and completeness of all information provided by the *Owner* without regard for the source of such information.
- 1.2.2 Notwithstanding any other provision of the *Contract*, the *Design-Builder* is not responsible for any design errors or omissions in any designs or specifications provided by or on behalf of the *Owner* unless the *Design-Builder* has been specifically requested to review and has accepted in writing those designs and specifications under the *Contract*.
- 1.2.3 The *Owner* shall furnish the information and services required under the *Contract* promptly to avoid delay in the performance of the *Contract*.
- 1.2.4 The *Owner's Statement of Requirements* may include:
- .1 site information e.g. site description, topographical and boundary surveys, environmental, geotechnical and designated substance investigation reports, utility information, and covenants and restrictions on the property; and
  - .2 the *Owner's* program requirements e.g. design objectives and parameters, performance requirements, constraints and criteria, spatial and functional requirements and relationships, flexibility and potential for expansion, special equipment and systems, and site requirements and budget.
- 1.2.5 The *Design-Builder* shall review the *Owner's Statement of Requirements* and shall report promptly to the *Owner* any significant error, inconsistency, or omission the *Design-Builder* may discover.
- 1.2.6 The review by the *Design-Builder* under paragraph 1.2.5 shall be to the best of the *Design-Builder's* knowledge, information, and belief and in making such review the *Design-Builder* does not assume any responsibility to the *Owner* for the accuracy of the review with respect to the *Owner's Statement of Requirements* prepared by or on behalf of the *Owner*.
- 1.2.7 The *Design-Builder* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Owner's Statement of Requirements* prepared by or on behalf of the *Owner* which the *Design-Builder* did not discover.
- 1.2.8 If the *Design-Builder* does discover any significant error, inconsistency, or omission in the *Owner's Statement of Requirements* prepared by or on behalf of the *Owner*, the *Design-Builder* shall not proceed with the work affected until the *Design-Builder* and the *Owner* have discussed how the information should be corrected or supplied.

## **GC 1.3 LAW OF THE CONTRACT**

- 1.3.1 The law of the *Place of the Work* shall govern the interpretation of the *Contract*.

## **GC 1.4 RIGHTS AND REMEDIES**

- 1.4.1 Except as expressly provided in the *Contract Documents*, the duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

- 1.4.2 Except as expressly provided in the *Contract Documents*, no action or failure to act by the *Owner*, *Design-Builder*, or the *Consultant* shall constitute a waiver of any right or duty afforded any of them under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed to in writing.

#### **GC 1.5 ASSIGNMENT**

- 1.5.1 Neither party to the *Contract* shall assign all or any part of the *Contract* without the written consent of the other, which consent shall not be unreasonably withheld.

#### **GC 1.6 CONFIDENTIALITY**

- 1.6.1 The *Owner* and the *Design-Builder* shall keep confidential all matters respecting technical, commercial, and legal issues relating to or arising out of the *Work* or the performance of the *Contract* and shall not, without the prior written consent of the other party, disclose any such matters, except in strict confidence, to its professional advisors.

### **PART 2 DESIGN SERVICES AND ADMINISTRATION OF THE CONTRACT**

#### **GC 2.1 CONSULTANT**

- 2.1.1 The *Design-Builder* shall engage the *Consultant* under a contract pursuant to which the *Consultant's* services, duties and responsibilities will include:
- .1 the review of the *Owner's Statement of Requirements*;
  - .2 the review with the *Owner* of reasonable alternative approaches to the design;
  - .3 the preparation of a design that meets the criteria set forth in the *Contract Documents*;
  - .4 the coordination required to integrate all parts of the *Design Services*;
  - .5 the preparation of schematic design documents to illustrate the scale and character of the *Work* and how the parts of the *Work* functionally relate to each other;
  - .6 the preparation of design development documents, based on the schematic design documents accepted by the *Owner*, consisting of drawings and other documents appropriate to the size of the *Work* to describe the size and character of the entire *Work* including architectural, mechanical and electrical systems, materials, and such other elements as may be appropriate;
  - .7 the preparation of *Construction Documents* setting forth in detail the requirements for *Construction* based on the design development documents accepted by the *Owner*;
  - .8 the provision of assistance to the *Owner* and *Design-Builder* to obtain approvals, permits, and licenses for the *Construction*;
  - .9 the conducting of general review of the progress of the *Construction*, to the extent necessary, in order to determine to the *Consultant's* satisfaction that the *Construction* is performed in general conformity with the requirements of:
    - (1) The *Contract Documents*, and
    - (2) The applicable statutes, regulations, codes, and bylaws of all authorities having jurisdiction over the *Work*;
  - .10 the assurances required by regulatory authorities respecting substantial conformance of the design with the applicable building regulations, other than construction safety issues;
  - .11 the preparation of *Change Orders* and *Change Directives* as set out in GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE;
  - .12 the determining of amounts owing to the *Design-Builder* based on the *Consultant's* observations and evaluation of the *Design-Builder's* applications for payment;
  - .13 the issuance of certificates for payment in the value proportionate to the amount of the *Contract*, for *Work* performed and *Products* delivered to the *Place of the Work*;
  - .14 the interpretation, in the first instance, of the requirements of the *Construction Documents* and the making of findings as to the performance thereunder by both the *Owner* and the *Design-Builder* without showing partiality to either the *Owner* or the *Design-Builder*, and in no event incurring liability for the result of such interpretations or findings rendered in good faith in such capacity;
  - .15 the interpretation and finding, in the first instance, of claims, disputes, and other matters in question relating to the performance of the *Work* or the interpretation of the *Contract Documents*, except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER.
  - .16 the rejecting of work which does not conform to the requirements of the *Contract Documents*;

- .17 the requiring of special testing and inspection of the *Construction* at the sole discretion of the *Consultant*, whether or not such *Construction* has been fabricated, installed, or completed;
  - .18 the determining of the date of *Substantial Performance of the Work* and the issuing of a certificate attesting to same;
  - .19 the verification of the *Design-Builder's* application for final payment and the issuing of a certificate for payment;
  - .20 the reviewing of any defects or deficiencies in the *Work* during the period described in GC 12.3 - WARRANTY and the issuance of appropriate instructions for the correction of same; and
  - .21 such other work that may be required from time to time that is agreed to by the *Owner* and the *Design-Builder* in writing and is acceptable to the *Consultant*.
- 2.1.2 In performing the above duties, the *Consultant* will provide the necessary services as expeditiously as is required for the orderly progress of the *Work*.
  - 2.1.3 All certificates issued by the *Consultant* shall be to the best of the *Consultant's* knowledge, information, and belief. By issuing any certificate, the *Consultant* does not guarantee the *Work* is correct or complete.
  - 2.1.4 The *Consultant* shall perform the *Design Services* and fulfil the *Consultant's* duties and responsibilities to the standard of diligence, skill, and care that consultants would customarily provide in similar circumstances and in the same relative geographic location, subject to the *Consultant's* professional and legal obligations.
  - 2.1.5 The *Owner* waives any right of action in negligence or otherwise against the *Consultant* or any other consultant employed by the *Design-Builder* in respect of performance of the *Design Services* except to the extent the *Owner* may be entitled to make a claim against the *Design-Builder* under the *Contract*.
  - 2.1.6 If the *Consultant's* engagement is terminated, the *Design-Builder* shall engage a new *Consultant* to provide the *Consultant's* services. The *Design-Builder* shall notify the *Owner* in writing before appointing or reappointing a *Consultant* to provide the *Design Services*. The *Design-Builder* shall not appoint any *Consultant* to whom the *Owner* may reasonably object.

## **GC 2.2 OWNER'S REPRESENTATIVE**

- 2.2.1 The *Owner* shall designate a representative authorized to act on the *Owner's* behalf and shall specify in written notice to the *Design-Builder* any limits on the representative's authority.
- 2.2.2 Subject to any notified limitations in authority, the *Design-Builder* may rely upon any written instructions or directions provided by the *Owner's* representative.
- 2.2.3 The *Owner's* representative shall take all reasonable steps to be accessible to the *Design-Builder* during performance of the *Contract* and shall render any necessary decisions or instructions promptly to avoid delay in the performance of the *Contract*.
- 2.2.4 The *Owner* and *Owner's* representatives shall not communicate with any *Subcontractors* performing the *Work* except through the *Design-Builder* or a person designated by the *Design-Builder*.

## **GC 2.3 REVIEW AND INSPECTION OF THE WORK**

- 2.3.1 The *Design-Builder* shall
  - .1 permit the *Owner* to review all material aspects of the design of the *Work* as the design proceeds, and
  - .2 provide a copy of all drawings, specifications, and diagrams to the *Owner* when required for review and acceptance.
- 2.3.2 From time to time, the *Design-Builder* may request and, on request, the *Owner* shall examine certain aspects of the design as set out on design development documents or *Construction Documents* to confirm that the design aspects are in general compliance with:
  - .1 the qualitative, functional layout, operational, and other *Owner* requirements for the *Work*; and
  - .2 the standards of finish, comfort, or aesthetics as required by the *Contract Documents*.
- 2.3.3 The *Owner*, the *Consultant* and the *Payment Certifier* shall have access to the *Construction* at all times. The *Design-Builder* shall provide sufficient, safe, and proper facilities at all times for their review of the *Construction* and the inspection of the *Construction* by authorized agencies. If parts of the *Construction* are in preparation at locations other than the *Place of the Work*, the *Owner*, the *Consultant* and the *Payment Certifier* shall be given access to such work whenever it is in progress.

- 2.3.4 If work is designated for tests, inspections, or approvals in the *Contract Documents*, or by the instructions of the *Owner* or the *Consultant*, or the laws or ordinances of the *Place of the Work*, the *Design-Builder* shall give the *Owner* reasonable notice of when the work will be ready for review and inspection. The *Design-Builder* shall arrange for and shall give the *Owner* reasonable notice of the date and time of inspections by other authorities.
- 2.3.5 The *Design-Builder* shall furnish promptly to the *Consultant* and to the *Owner*, on request, a copy of certificates and inspection reports relating to the *Work*.
- 2.3.6 If the *Design-Builder* covers, or permits to be covered, work that has been designated for special tests, inspections, or approvals before such special tests, inspections, or approvals are made, given or, completed, the *Design-Builder* shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and make good the covering work at the *Design-Builder's* expense.
- 2.3.7 The *Owner* may order any portion or portions of the *Construction* to be examined to confirm that such work is in accordance with the requirements of the *Contract Documents*. If the work is not in accordance with the requirements of the *Contract Documents*, the *Design-Builder* shall correct the work and pay the cost of examination and correction. If the work is in accordance with the requirements of the *Contract Documents*, the *Owner* shall pay all costs incurred by the *Design-Builder* as a result of such examination and restoration.
- 2.3.8 The *Consultant* shall provide any required assurances to regulatory authorities respecting substantial conformance of the *Construction* with the design approved by that authority for issuance of the building permit.

#### **GC 2.4 DEFECTIVE WORK**

- 2.4.1 The *Design-Builder* shall promptly remove from the *Place of the Work* and replace or re-execute defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work has been incorporated in the *Work* and whether or not the defect is the result of poor workmanship, design, use of defective products, or damage through carelessness or other act or omission of the *Design-Builder*.
- 2.4.2 The *Design-Builder* shall make good promptly other contractors' work destroyed or damaged by such removals or replacements at the *Design-Builder's* expense.
- 2.4.3 If, in the opinion of the *Owner*, it is not expedient to correct defective work or work not performed as provided in the *Contract Documents*, the *Owner* may deduct from the amount otherwise due to the *Design-Builder* the difference in value between the work as performed and that called for by the *Contract Documents*. If the *Design-Builder* does not agree on the difference in value, the *Design-Builder* shall refer the dispute to Part 8 of the General Conditions - DISPUTE RESOLUTION.

### **PART 3 EXECUTION OF THE WORK**

#### **GC 3.1 CONTROL OF THE WORK**

- 3.1.1 The *Design-Builder* shall have total control of the *Work* and shall effectively direct and supervise the *Work* so as to ensure conformity with the *Contract Documents*.
- 3.1.2 The *Design-Builder* shall be solely responsible for construction means, methods, techniques, sequences, and procedures with respect to the *Construction* and for co-ordinating the various parts of the *Construction* under the *Contract*.
- 3.1.3 The *Design-Builder* shall keep the *Owner* informed of the progress of the *Work*.
- 3.1.4 The *Design-Builder* is solely responsible for the quality of the *Work* and shall undertake any quality control activities specified in the *Contract Documents* or, if none are specified, as may be reasonably required to ensure such quality.

#### **GC 3.2 CONSTRUCTION DOCUMENTS**

- 3.2.1 During the progress of the *Work*, the *Design-Builder* shall furnish to the *Owner* the *Construction Documents* that describe details of the design required by the *Contract Documents*. At the time of submission the *Design-Builder* shall notify the *Owner* in writing of any significant deviations in the *Construction Documents* from the requirement of the *Contract Documents*.



- 3.2.2 The *Design-Builder* shall submit the *Construction Documents* to the *Owner* to review in orderly sequence and sufficiently in advance so as to cause no delay in the *Work*. Upon request of the *Owner* or the *Design-Builder*, they jointly shall prepare a schedule of the dates for submission and return of *Construction Documents*.
- 3.2.3 The *Owner* shall review the *Construction Documents* in accordance with the schedule agreed upon, or in the absence of an agreed schedule with reasonable promptness so as to cause no delay. The *Owner's* review is for conformity to the intent of the *Contract Documents*. The *Owner's* review shall not relieve the *Design-Builder* of responsibility for errors or omissions in the *Construction Documents* or for meeting all requirements of the *Contract Documents* unless the *Owner* expressly accepts a deviation from the *Contract Documents*.
- 3.2.4 No later than 7 days after completing the review, the *Owner* shall notify the *Design-Builder* in writing that the *Owner* has accepted and has signed the *Construction Documents* or shall notify the *Design-Builder*, giving reasons in writing, why the *Owner* rejects the *Construction Documents*. Upon request by the *Owner*, the *Design-Builder* shall revise and resubmit *Construction Documents* which the *Owner* has rejected. The *Design-Builder* shall notify the *Owner* in writing of any revisions to any resubmission other than those requested by the *Owner*.
- 3.2.5 When the *Construction Documents* are accepted and signed by the *Owner* and the *Design Builder* such *Construction Documents* shall become part of the *Contract Documents*.
- 3.2.6 When a change is required to the *Construction Documents* that have been accepted and signed by the *Owner*, it shall be made in accordance with GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, or GC 6.3 - CHANGE DIRECTIVE.

### **GC 3.3 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS**

- 3.3.1 The *Owner* reserves the right to award separate contracts in connection with other parts of the *Project* to other contractors and to perform work with own forces.
- 3.3.2 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Owner* shall:
  - .1 provide for the co-ordination of the activities and work of other contractors and *Owner's* own forces with the *Work* of the *Contract*;
  - .2 assume overall responsibility for compliance with the applicable health and construction safety legislation at the *Place of the Work*;
  - .3 enter into separate contracts with other contractors under conditions of contract which are compatible with the conditions of the *Contract*;
  - .4 ensure that insurance coverage is provided to the same requirements as are called for in GC 11.1 – INSURANCE and co-ordinate such insurance with the insurance coverage of the *Design-Builder* as it affects the *Work*; and
  - .5 take all reasonable precautions to avoid labour disputes or other disputes on the *Project* arising from the work of other contractors or the *Owner's* own forces.
- 3.3.3 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Design-Builder* shall:
  - .1 afford the *Owner* and other contractors reasonable opportunity to introduce and store their products and use their construction machinery and equipment to execute their work;
  - .2 co-ordinate and schedule the *Work* with the work of other contractors and *Owner's* own forces and connect as specified or shown in the *Contract Documents*;
  - .3 participate with other contractors and the *Owner* in reviewing their schedules when directed by the *Owner*; and
  - .4 where part of the *Work* is affected by or depends upon for its proper execution the work of other contractors or *Owner's* own forces, promptly report to the *Owner* in writing and prior to proceeding with that part of the *Work*, any apparent deficiencies in such work. Failure by the *Design-Builder* to so report shall invalidate any claims against the *Owner* by reason of the deficiencies in the work of other contractors or *Owner's* own forces except those deficiencies not then reasonably discoverable.
- 3.3.4 Where a change in the *Work* is required as a result of the co-ordination and connection of the work of other contractors or *Owner's* own forces with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 3.3.5 Claims, disputes, and other matters in question between the *Design-Builder* and other contractors shall be dealt with as provided in Part 8 of the General Conditions - DISPUTE RESOLUTION provided the other contractors have reciprocal obligations. The *Design-Builder* shall be deemed to have consented to arbitration of any dispute with any other contractor whose contract with the *Owner* contains a similar requirement to arbitrate such dispute.

### **GC 3.4 SCHEDULE OF THE WORK**

- 3.4.1 The *Design-Builder* shall:
- .1 prepare and submit to the *Owner* prior to the first application for payment, a schedule of the *Work* that indicates the timing of the major activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*;
  - .2 monitor the progress of the *Design Services* and *Construction* relative to the schedule of the *Work* and update the schedule on a monthly basis or as stipulated by the *Contract Documents*; and
  - .3 advise the *Owner* in writing of any revisions required to the schedule as the result of extensions of the *Contract Time* as provided in Part 6 of the General Conditions - CHANGES IN THE WORK.

### **GC 3.5 CONSTRUCTION SAFETY**

- 3.5.1 Subject to paragraph 3.3.2.2 of GC 3.3 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, the *Design-Builder* shall be solely responsible for construction safety at the *Place of the Work* and for compliance with the rules, regulations, and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the *Construction*.

### **GC 3.6 SUPERVISOR**

- 3.6.1 The *Design-Builder* shall employ a competent supervisor and necessary assistants who shall be in attendance at the *Place of the Work* while the *Construction* is being performed. The supervisor shall not be changed except for valid reason.
- 3.6.2 The supervisor shall represent the *Design-Builder* at the *Place of the Work* and notices and instructions given to the supervisor by the *Owner* shall be held to have been received by the *Design-Builder*.

### **GC 3.7 OTHER CONSULTANTS, SUBCONTRACTORS, AND SUPPLIERS**

- 3.7.1 The *Design-Builder* shall preserve and protect the rights of the parties under the *Contract* with respect to work to be performed under subcontract, and shall:
- .1 enter into contracts or written agreements with the *Consultant*, and other consultants to require them to perform their design and other services as provided in the *Contract Documents*;
  - .2 enter into contracts or written agreements with *Subcontractors* and *Suppliers* to require them to perform their work and related services as required by the *Contract Documents*;
  - .3 incorporate the terms and conditions of the *Contract Documents* into all contracts or written agreements with the *Consultant*, other consultants, *Subcontractors*, and *Suppliers* insofar as they are applicable; and
  - .4 be as fully responsible to the *Owner* for acts and omissions of the *Consultant*, other consultants, *Subcontractors*, *Suppliers*, and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Design-Builder*.
- 3.7.2 The *Design-Builder* shall indicate in writing, at the request of the *Owner*, other consultants, *Subcontractors*, or *Suppliers* whose proposals or bids have been received by the *Design-Builder* which the *Design-Builder* would be prepared to accept for the performance of a portion of the *Work*. Should the *Owner* not object before signing the *Contract*, the *Design-Builder* shall employ other consultants, *Subcontractors*, or *Suppliers* so identified by the *Design-Builder* in writing for the performance of that portion of the *Work* to which their proposal or bid applies.
- 3.7.3 The *Owner* may, for reasonable cause, at any time before the *Design-Builder* has signed the subcontract, object to the use of a proposed other consultant, *Subcontractor*, or *Supplier* and require the *Design-Builder* to employ another proposed other consultant or subcontract bidder.
- 3.7.4 If the *Owner* requires the *Design-Builder* to change a proposed other consultant, *Subcontractor*, or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the differences occasioned by such required change.
- 3.7.5 The *Design-Builder* shall not be required to employ as an other consultant, *Subcontractor*, or *Supplier*, a person or firm to whom the *Design-Builder* may reasonably object.
- 3.7.6 The *Owner* may provide to other consultants, *Subcontractors*, or *Suppliers* information as to the percentage of their work which has been certified for payment.

### **GC 3.8 LABOUR AND PRODUCTS**

- 3.8.1 The *Design-Builder* shall provide and pay for labour, *Products*, tools, construction machinery and equipment, water, heat, light, power, transportation, and other facilities and services, including *Design Services*, necessary for the performance of the *Work* in accordance with the *Contract*.
- 3.8.2 Unless otherwise specified, all *Products* provided shall be new. *Products* which are not specified shall be of a quality consistent with those similar products specified.
- 3.8.3 The *Design-Builder* shall maintain good order and discipline among the *Design-Builder's* employees engaged on the *Work* and shall not employ on the *Work* anyone not skilled in the tasks assigned.

### **GC 3.9 DOCUMENTS AT THE SITE**

- 3.9.1 The *Design-Builder* shall keep one copy of current *Contract Documents*, submittals, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner*.

### **GC 3.10 SHOP DRAWINGS**

- 3.10.1 Shop drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, product, and other data which illustrate details of a portion of the *Work*.
- 3.10.2 The *Design-Builder* shall provide shop drawings as described in the *Contract Documents* or as the *Owner* may reasonably request.
- 3.10.3 The *Design-Builder*, the *Consultant* and where appropriate, other consultants, shall review all shop drawings. The *Design-Builder* represents by this review that: the *Design-Builder* has determined and verified all field measurements and field construction conditions, or will do so; *Product* requirements; catalogue numbers; and similar data and that the *Design-Builder* has checked and coordinated each shop drawing with the requirements of the *Work* and of the *Contract Documents*.
- 3.10.4 Shop drawings which require approval of any authority having jurisdiction shall be submitted to such authority by the *Design-Builder*.
- 3.10.5 If the *Owner* requests to review shop drawings, the *Design-Builder* shall submit them in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of other contractors. The *Owner* and the *Design-Builder* shall jointly prepare a schedule of the dates for submission and return of shop drawings.
- 3.10.6 The *Owner's* review under paragraph 3.10.5 is for conformity to the intent of the *Contract Documents* and for general arrangement only. The *Owner's* review shall not relieve the *Design-Builder* of the responsibility for errors or omissions in the shop drawings or for meeting all requirements of the *Contract Documents* unless the *Owner* expressly accepts a deviation from the *Contract Documents*.

### **GC 3.11 USE OF THE WORK**

- 3.11.1 The *Design-Builder* shall confine construction machinery and equipment, storage of *Products*, and operations of employees to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Construction*.
- 3.11.2 The *Design-Builder* shall not load or permit to be loaded any part of the *Construction* with a weight or force that will endanger the safety of the *Project*.

### **GC 3.12 CUTTING AND REMEDIAL WORK**

- 3.12.1 The *Design-Builder* shall do the cutting and remedial work required to make the several parts of the *Construction* come together properly.
- 3.12.2 The *Design-Builder* shall co-ordinate the *Work* to ensure that this requirement is kept to a minimum.
- 3.12.3 Cutting and remedial work shall be performed by specialists familiar with the *Products* affected and shall be performed in a manner to neither damage nor endanger the *Construction*.

### **GC 3.13 CLEANUP**

- 3.13.1 The *Design-Builder* shall maintain the *Place of the Work* in a tidy condition and free from the accumulation of waste products and debris, other than that caused by the *Owner*, other contractors, or their employees.
- 3.13.2 The *Design-Builder* shall remove waste products and debris, other than that resulting from the work of the *Owner*, other contractors, or their employees, and shall leave the *Place of the Work* clean and suitable for occupancy by the *Owner* before attainment of *Substantial Performance of the Work*. The *Design-Builder* shall remove products, tools, construction machinery, and equipment not required for the performance of the remaining work.
- 3.13.3 Prior to application for the final certificate for payment, the *Design-Builder* shall remove products, tools, construction machinery and equipment, and waste products and debris, other than that resulting from the work of the *Owner*, other contractors, or their employees.

### **GC 3.14 SIGNAGE**

- 3.14.1 Unless reasonably objected by the *Owner*, the *Design-Builder* and the *Consultant* shall be entitled to sign the building by inscription or otherwise on a suitable and reasonably visible part of the permanent fabric of the building.
- 3.14.2 The *Design-Builder* may erect a sign identifying the *Design-Builder*, the *Consultant*, other consultants, and *Subcontractors* at the *Place of the Work* during the construction.

## **PART 4 ALLOWANCES**

### **GC 4.1 CASH ALLOWANCES**

- 4.1.1 The *Contract Price* includes cash allowances stated in the *Contract Documents*, which allowances shall be expended as the *Owner* directs.
- 4.1.2 Cash allowances cover the net cost to the *Design-Builder* of services, *Products*, construction machinery and equipment, freight, unloading, handling, storage, installation, and other authorized expenses incurred in performing the *Work* stipulated under the cash allowances but do not include any *Value Added Taxes* payable by the *Owner* to the *Design-Builder*.
- 4.1.3 The *Contract Price*, and not the cash allowances, includes the *Design-Builder's* overhead and profit in connection with such cash allowances.
- 4.1.4 Where costs under a cash allowance exceed the amount of the allowance, the *Design-Builder* shall be compensated for any excess incurred and substantiated plus an amount for overhead and profit as provided in GC 6.1 - CHANGES.
- 4.1.5 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the actual cost and each cash allowance.
- 4.1.6 The value of the *Work* performed under a cash allowance is eligible to be included in progress payments.
- 4.1.7 The *Design-Builder* and the *Owner* shall jointly prepare a schedule that shows when the *Owner* must authorize ordering of items called for under cash allowances to avoid delaying the progress of the *Work*.

### **GC 4.2 CONTINGENCY ALLOWANCE**

- 4.2.1 The *Contract Price* includes the contingency allowance, if any, stated in the *Contract Documents*.
- 4.2.2 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 4.2.3 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.2 and the contingency allowance.

## **PART 5 PAYMENT**

### **GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**

- 5.1.1 The *Owner* shall, at the request of the *Design-Builder*, prior to execution of the Agreement, and promptly from time to time as requested thereafter, furnish to the *Design-Builder* reasonable evidence that financial arrangements have been made to fulfil the *Owner's* obligations under the *Contract*.
- 5.1.2 The *Owner* shall notify the *Design-Builder* in writing of any material change in the *Owner's* financial arrangements during the performance of the *Contract*.

### **GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT**

- 5.2.1 Applications for payment on account as provided in Article A-5 of the Agreement - PAYMENT may be made monthly as the *Work* progresses.
- 5.2.2 The *Design-Builder* shall submit to the *Owner*, at least 14 days before the first application for payment, a schedule of values for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment.
- 5.2.3 The schedule of values shall be made out in such form and supported by such evidence as accepted by the *Owner* and shall be used as the basis for applications for payment, unless it is found to be in error.
- 5.2.4 Applications for payment shall be dated the last day of the agreed monthly payment period. They shall be issued to the *Owner* and unless the *Payment Certifier* is identified to be the *Consultant*, to the *Payment Certifier*. The amount claimed shall be for the value, proportionate to the amount of the *Contract*, of *Work* performed and *Products* delivered to the *Place of the Work* at that date.
- 5.2.5 The *Design-Builder* shall include a statement based on the schedule of values with each application for payment and a certificate for payment issued by the *Consultant* to the *Design-Builder* in the amount applied for by the *Design-Builder*.
- 5.2.6 Claims for *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall be supported by such evidence as the *Owner* may reasonably require to establish the value and delivery of the *Products*.

### **GC 5.3 PROGRESS PAYMENT**

- 5.3.1 If the *Payment Certifier* is not the *Consultant* or the *Owner*, the *Payment Certifier* will issue to the *Owner*, and if the *Payment Certifier* is the *Owner*, the *Owner* shall issue, no later than 10 days after the receipt of an application for payment from the *Design-Builder* submitted in accordance with GC 5.2 – APPLICATION FOR PROGRESS PAYMENT, a certificate for payment in the amount applied for or in such other amount as the *Payment Certifier* determines to be properly due. If the *Payment Certifier* amends the application, the *Payment Certifier* will promptly notify the *Design-Builder* in writing giving reasons for the amendment.
- 5.3.2 The *Owner* shall make payment to the *Design-Builder* on account as provided in Article A-5 of the Agreement – PAYMENT no later than 15 days after the receipt of a certificate for payment issued by the *Payment Certifier* or after the *Owner* has issued a certificate as contemplated by paragraph 5.3.1.

### **GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK**

- 5.4.1 When the *Design-Builder* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Design-Builder* shall prepare and submit to the *Owner* a comprehensive list of items to be completed or corrected and apply for a review by the *Owner*. Failure to include an item on the list does not alter the responsibility of the *Design-Builder* to complete the *Contract*.
- 5.4.2 The *Design-Builder's* list and application for *Substantial Performance of the Work* shall include a statement from the *Consultant* representing to the *Design-Builder* the validity of the list and the date of *Substantial Performance of the Work* or designated portion of the *Work*. Where required by the applicable lien legislation, the *Consultant* shall issue a certificate of *Substantial Performance of the Work*.

- 5.4.3 If the *Consultant* is not the *Payment Certifier* and the applicable lien legislation requires the *Payment Certifier* to determine whether the *Contract* has been substantially performed, the *Owner* shall require the *Payment Certifier* within 7 days after receipt of the *Design-Builder's* application for *Substantial Performance of the Work* issue a certificate of the *Substantial Performance of the Work* which shall state the date of *Substantial Performance of the Work* or advise the *Design-Builder* in writing of the reasons for which such a certificate is not issued.
- 5.4.4 Immediately following the issuance of a certificate of *Substantial Performance of the Work*, the *Design-Builder*, in consultation with the *Owner*, will establish a reasonable date for finishing the *Work*.

#### **GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK**

- 5.5.1 After the issuance of the certificate of *Substantial Performance of the Work* as in accordance with GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK, the *Design-Builder* shall:
- .1 submit an application for payment of the holdback amount,
  - .2 submit a sworn statement that all accounts for the *Design Services*, labour, subcontracts, *Products*, construction machinery and equipment, and other indebtedness which may have been incurred by the *Design-Builder* in the *Substantial Performance of the Work* and for which the *Owner* might in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or those amounts not yet paid by the *Owner* to the *Design-Builder* for *Work* done which amounts in the *Design-Builder's* hands would be payable by the *Design-Builder* to those with whom it is bound by contract for the performance of the *Work* or any amounts identified by the *Design-Builder*, the payment of which is in dispute.
- 5.5.2 After the receipt of an application for payment from the *Design-Builder* and the sworn statement as provided in paragraph 5.5.1, the *Payment Certifier* will issue a certificate for payment of the holdback amount.
- 5.5.3 Where the holdback amount has not been placed in a separate holdback account as may be required by the lien legislation applicable to the *Place of the Work*, the *Owner* shall, 10 days prior to the expiry of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, place the holdback amount in a bank account in the joint names of the *Owner* and the *Design-Builder*.

In the Common Law provinces GC 5.5.4 shall read as follows:

- 5.5.4 The holdback amount authorized by the certificate for payment of the holdback amount is due and payable on the day following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*. Where lien legislation does not exist or apply, the holdback amount shall be due and payable in accordance with other legislation, industry practice, or provisions which may be agreed to between the parties. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the lien legislation applicable to the *Place of the Work*, other third party monetary claims against the *Design-Builder* which are enforceable against the *Owner*.

In the Province of Quebec GC 5.5.4 shall read as follows:

- 5.5.4 The holdback amount authorized by the certificate for payment of the holdback amount is due and payable no later than 30 days after the date of *Substantial Performance of the Work*. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any legal hypothecs that have been taken or could be taken against the *Work* or other third party monetary claims against the *Design-Builder* which are enforceable against the *Owner*.

#### **GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK**

In the Common Law provinces GC 5.6.1 shall read as follows:

- 5.6.1 Where legislation permits and where, upon application by the *Design-Builder*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Design-Builder* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, on the day following the expiration of the holdback period for such work stipulated in the lien legislation applicable to the *Place of the Work*.

In the Province of Quebec GC 5.6.1 shall read as follows:

- 5.6.1 Where, upon application by the *Design-Builder*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Design-Builder* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier* no later than 30 days after the date of *Substantial Performance of the Work*. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken or could be taken against the *Work* or other third party monetary claims against the *Design-Builder* which are enforceable against the *Owner*.
- 5.6.2 Notwithstanding the provisions of the preceding paragraph, and notwithstanding the wording of such certificates, the *Design-Builder* shall ensure that such subcontract work or *Products* is protected pending the issuance of a final certificate for payment and be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when such certificates were issued.

## **GC 5.7 FINAL PAYMENT**

- 5.7.1 When the *Design-Builder* considers that the *Work* is completed, the *Design-Builder* shall submit an application for final payment and a certificate for payment issued by the *Consultant* to the *Design-Builder* in the amount applied for by the *Design-Builder*.
- 5.7.2 Unless the *Payment Certifier* is identified to be the *Consultant*, the *Payment Certifier* will review the *Work* to verify the validity of the application after the receipt of the *Design-Builder's* application for final payment and the *Consultant's* certificate for payment. The *Payment Certifier* will review the *Work* within 10 days of receipt of the *Design-Builder's* application and will issue to the *Owner*, no later than 7 days after reviewing the *Work*, a certificate for payment in the amount applied for or in such other amount as the *Payment Certifier* determines to be properly due. If the *Payment Certifier* amends the application, the *Payment Certifier* will promptly notify the *Design-Builder* in writing giving reasons for the amendment.
- 5.7.3 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the *Place of the Work*, the *Owner* shall make payment to the *Design-Builder* on account as provided in Article A-5 of the Agreement – PAYMENT no later than 15 days after the receipt of a final certificate for payment issued by the *Payment Certifier*.

## **GC 5.8 WITHHOLDING OF PAYMENT**

- 5.8.1 If because of climatic or other conditions reasonably beyond the control of the *Design-Builder*, there are items of the *Work* that cannot be performed, payment in full for that portion of the *Work* which has been performed as certified by the *Payment Certifier* shall not be withheld or delayed by the *Owner* on account thereof, but the *Owner* may withhold, until the remaining portion of the *Work* is finished, only such an amount that the *Payment Certifier* determines is sufficient and reasonable to cover the cost of performing such remaining work.

## **GC 5.9 NON-CONFORMING WORK**

- 5.9.1 No payment by the *Owner* under the *Contract* nor partial or entire use or occupancy of the *Work* by the *Owner* shall constitute an acceptance of any portion of the *Work* or *Products* which are not in accordance with the requirements of the *Contract Documents*.

## **PART 6 CHANGES IN THE WORK**

### **GC 6.1 CHANGES**

- 6.1.1 The *Owner*, without invalidating the *Contract*, may make changes in the *Work* consisting of additions, deletions, or other revisions to the *Work* by *Change Order* or *Change Directive*.
- 6.1.2 The *Design-Builder* shall not perform a change in the *Work* without a *Change Order* or a *Change Directive* except as provided in paragraph 6.1.6.
- 6.1.3 If a change in the *Work* results in a net increase in the *Contract Price*, an allowance for overhead and profit shall be included.
- 6.1.4 If a change in the *Work* results in a net decrease in the *Contract Price*, the amount of the credit shall be the net cost, without deduction for overhead or profit.

- 6.1.5 When both additions and deletions covering related work or substitutions are involved in a change in the *Work*, the allowance for overhead and profit shall be calculated on the basis of the net increase, if any, with respect to that change in the *Work*.
- 6.1.6 The *Design-Builder*, without invalidating the *Contract*, may make minor adjustments in the *Work* consistent with the intent of the *Contract Documents* without a *Change Order* and shall advise the *Owner* in writing of such adjustments. Such adjustments in the *Work* shall not involve adjustment in the *Contract Price* or *Contract Time*.

## **GC 6.2 CHANGE ORDER**

- 6.2.1 When a change in the *Work* is proposed or required, the *Owner* or the *Design-Builder* shall provide a notice in writing describing the proposed change in the *Work* to the other party. The responding party shall present, in a form acceptable to the other party, an amendment to the *Owner's Statement of Requirements*, if any, and a method of adjustment or an amount of adjustment for the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change in the *Work*.
- 6.2.2 When the *Owner* and *Design-Builder* agree to the amendment to the *Owner's Statement of Requirements*, the adjustments in the *Contract Price* and *Contract Time*, or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a *Change Order* and signed by the *Owner* and *Design-Builder*. The value of the *Work* performed as the result of a *Change Order* shall be included in applications for progress payment.
- 6.2.3 If the *Owner* requests the *Design-Builder* to submit a proposal for a change in the *Work* and then elects not to proceed with the change, a *Change Order* shall be issued for the *Owner* to reimburse the *Design-Builder* for all costs incurred in any *Design Services* rendered.

## **GC 6.3 CHANGE DIRECTIVE**

- 6.3.1 If the *Owner* requires the *Design-Builder* to proceed with a change in the *Work* within the general scope of the *Work* prior to the *Owner* and the *Design-Builder* agreeing upon the adjustment in *Contract Price* and *Contract Time*, the *Owner* shall direct the preparation of a *Change Directive*.
- 6.3.2 Upon receipt of a *Change Directive*, the *Design-Builder* shall proceed promptly with the change in the *Work*.
- 6.3.3 The adjustment in the *Contract Price* for a change carried out by way of a *Change Directive* shall be determined on the basis of the cost of expenditures and savings to perform the work attributable to the change.
- 6.3.4 The *Design-Builder* shall keep and present, in such form as the *Owner* may require, an itemized accounting of the cost of expenditures and savings referred to in paragraph 6.3.3 together with supporting data. The cost of performing the work attributable to the *Change Directive* shall be limited to the actual cost of all of the following:
- .1 wages and benefits paid for labour in the direct employ of the *Design-Builder* under applicable collective bargaining agreements, or under a salary or wage schedule agreed upon by the *Owner* and *Design-Builder*;
  - .2 salaries, wages, and benefits of the *Design-Builder's* personnel, when stationed at the field office, in whatever capacity employed; and personnel engaged at shops or on the road, in expediting the production or transportation of materials or equipment;
  - .3 salaries, wages, and benefits of the *Design-Builder's* office personnel engaged in a technical capacity, and other personnel identified in the agreed wage schedule for the time spent in the performance of the *Work*;
  - .4 contributions, assessments, or taxes incurred for such items as employment insurance, provincial health insurance, workers' compensation, and Canada or Quebec Pension Plan, insofar as such cost is based on wages, salaries, or other remuneration paid to employees of the *Design-Builder* and included in the cost of the work as provided in paragraphs 6.3.4.1, 6.3.4.2, and 6.3.4.3;
  - .5 travel and subsistence expenses of the *Design-Builder's* personnel described in paragraphs 6.3.4.1, 6.3.4.2, and 6.3.4.3;
  - .6 the cost of *Design Services* including all fees and disbursements of the *Consultant* or other consultants engaged or employed to provide such services;
  - .7 the cost of all *Products* including cost of transportation thereof;
  - .8 the cost of materials, supplies, equipment, temporary services and facilities, and hand tools not owned by the workers, including transportation and maintenance thereof, which are consumed; and cost less salvage value on such items used but not consumed, which remain the property of the *Design-Builder*;



- .9 rental cost of all tools, machinery, and equipment, exclusive of hand tools, whether rented from or provided by the *Design-Builder* or others, including installation, minor repairs and replacements, dismantling, removal, transportation and delivery cost thereof;
  - .10 deposits lost;
  - .11 the amounts of all subcontracts;
  - .12 the cost of quality assurance such as independent inspection and testing services;
  - .13 charges levied by authorities having jurisdiction at the *Place of the Work*;
  - .14 royalties, patent license fees, and damages for infringement of patents and cost of defending suits therefor subject always to the *Design-Builder's* obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 - PATENT FEES;
  - .15 any adjustment in premium for all bonds and insurance which the *Design-Builder* is required, by the *Contract Documents*, to purchase and maintain in relation to the performance of the *Work*;
  - .16 any adjustment in taxes and duties for which the *Design-Builder* is liable in relation to the performance of the *Work*;
  - .17 charges for long distance telephone and facsimile communications, courier services, expressage, photocopying, reproduction of *Contract Documents*, and petty cash items incurred in relation to the performance of the *Work*;
  - .18 the cost of removal and disposal of waste products and debris;
  - .19 costs incurred due to emergencies affecting the safety of persons or property;
- 6.3.5 Pending determination of the final amount of a *Change Directive*, the undisputed value of the work performed as the result of a *Change Directive* is eligible to be included in progress payments.
- 6.3.6 If the *Owner* and *Design-Builder* do not agree on the proposed adjustment in the *Contract Time* or the method of determining it, the adjustment shall be referred to the *Consultant* for determination.
- 6.3.7 If at any time after the start of the *Work* directed by a *Change Directive*, the *Owner* and the *Design-Builder* reach agreement on the amendment to the *Owner's Statement of Requirements* or the adjustment to the *Contract Price* and to the *Contract Time*, this agreement shall be recorded in a *Change Order* signed by the *Owner* and the *Design-Builder*.

#### **GC 6.4 CONCEALED OR UNKNOWN CONDITIONS**

- 6.4.1 If the *Owner* or the *Design-Builder* discover conditions at the *Place of the Work* which are:
- .1 subsurface or otherwise concealed physical conditions which existed before the commencement of the *Work* which differ materially from those indicated in the *Contract Documents*; or
  - .2 physical conditions of a nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the *Contract Documents*;
- then the observing party shall notify the other party in writing, if possible before conditions are disturbed, and in no event later than 5 *Working Days* after first observance of the conditions.
- 6.4.2 The *Consultant* or other consultants will promptly investigate such conditions. The *Consultant* will notify the *Owner* and the *Design-Builder* of the finding in writing. If the finding is that the conditions differ materially and this would cause an increase or decrease in the *Design-Builder's* cost or time to perform the *Work*, the *Owner* shall issue appropriate instructions for a change in the *Work* as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 6.4.3 If the *Consultant* finds that the conditions at the *Place of the Work* are not materially different or that no change in the *Contract Price* or the *Contract Time* is justified, the *Consultant* shall notify the *Owner* and *Design-Builder* in writing.

#### **GC 6.5 DELAYS**

- 6.5.1 If the *Design-Builder* is delayed in the performance of the *Work* by an action or omission of the *Owner* or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as agreed between the *Owner* and the *Design-Builder*. *Design-Builder* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Design-Builder* as the result of such delay.

- 6.5.2 If the *Design-Builder* is delayed in the performance of the *Work* by a stop work order issued by a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Design-Builder* or any person employed or engaged by the *Design-Builder* directly or indirectly, then the *Contract Time* shall be extended for such reasonable time as agreed between the *Owner* and the *Design-Builder*. The *Design-Builder* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Design-Builder* as the result of such delay.
- 6.5.3 If the *Design-Builder* is delayed in the performance of the *Work* by labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors' association, of which the *Design-Builder* is a member or to which the *Design-Builder* is otherwise bound), fire, unusual delay by common carriers or unavoidable casualties, or without limit to any of the foregoing, by a cause beyond the *Design-Builder's* control, then the *Contract Time* shall be extended for such reasonable time as agreed between the *Owner* and the *Design-Builder*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Design-Builder* agrees to a shorter extension. The *Design-Builder* shall not be entitled to payment for costs incurred by such delays unless such delays result from actions by the *Owner*.
- 6.5.4 No extension shall be made for delay unless notice in writing of claim is given promptly to the *Owner* and in no event later than 10 *Working Days* after the commencement of delay, providing however, that in the case of a continuing cause of delay only one notice of claim shall be necessary.
- 6.5.5 Any adjustment to *Contract Price* and *Contract Time* required as a result of GC 6.5 - DELAYS shall be made as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.

## **PART 7 DEFAULT NOTICE**

### **GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, SUSPEND THE WORK, OR TERMINATE THE CONTRACT**

- 7.1.1 If the *Design-Builder* should be adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Design-Builder's* insolvency, or if a receiver is appointed because of the *Design-Builder's* insolvency, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, by giving the *Design-Builder* or receiver or trustee in bankruptcy notice in writing, terminate the *Design-Builder's* right to continue with the *Work*.
- 7.1.2 If the *Design-Builder* should neglect to prosecute the *Work* properly or otherwise fails to comply with the requirements of the *Contract* to a substantial degree, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, notify the *Design-Builder* in writing that the *Design-Builder* is in default of the *Design-Builder's* contractual obligations and instruct the *Design-Builder* to correct the default in the 5 *Working Days* immediately following the receipt of such notice.
- 7.1.3 If the default cannot be corrected in the 5 *Working Days* specified, the *Design-Builder* shall be in compliance with the *Owner's* instructions if the *Design-Builder*:
- .1 commences the correction of the default within the specified time, and
  - .2 provides the *Owner* with an acceptable schedule for such correction, and
  - .3 corrects the default in accordance with such schedule.
- 7.1.4 If the *Design-Builder* fails to correct the default in the time specified or subsequently agreed upon, without prejudice to any other right or remedy the *Owner* may have, the *Owner* may:
- .1 correct such default and deduct the cost thereof from any payment then or thereafter due to the *Design-Builder*, or
  - .2 terminate the *Design-Builder's* right to continue with the *Work* in whole or in part or terminate the *Contract*.
- 7.1.5 If the *Owner* terminates the *Design-Builder's* right to continue with the *Work* as provided in paragraphs 7.1.1 and 7.1.4, the *Owner* shall be entitled to:
- .1 take possession of the *Construction*, and *Products*; utilize the *Construction Documents*, construction machinery, and equipment; subject to the rights of third parties, finish the *Work* by whatever reasonable method the *Owner* may consider expedient, but without undue delay or expense;
  - .2 withhold further payment to the *Design-Builder* until a final certificate for payment is issued;
  - .3 charge the *Design-Builder* the amount by which the full cost of finishing the *Work* and a reasonable allowance to cover the cost of corrections to *Work* performed by the *Design-Builder* that may be required under GC 12.3 - WARRANTY, exceeds the unpaid balance of the *Contract Price*; however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Design-Builder* the difference; and

- .4 on expiry of the warranty period, charge the *Design-Builder* the amount by which the cost of corrections to the *Design-Builder's* work under GC 12.3 - WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the *Design-Builder* the difference.
- 7.1.6 The *Design-Builder's* obligation under the *Contract* as to quality, correction, and warranty of the work performed by the *Design-Builder* up to the time of termination shall continue in force after such termination.
- 7.1.7 The *Owner* may, if conditions arise which make it necessary for reasons other than as provided in paragraphs 7.1.1 and 7.1.4, suspend performance of the *Work* or terminate the *Contract* by giving written notice to that effect to the *Design-Builder* identifying the reason for the suspension and the expected length of the suspension. Such suspension or termination shall be effective in the manner specified in said notice and shall be without prejudice to any claims which either party may have against the other.
- 7.1.8 The *Design-Builder* upon receiving notice of suspension or termination from the *Owner* shall suspend all operations as soon as reasonably possible except *Work* which, in the *Design-Builder's* opinion, is necessary for the safety of personnel and for the care and preservation of the *Work*, the materials and plant. Subject to any directions in the notice of suspension or termination, the *Design-Builder* shall discontinue ordering materials, facilities, and supplies and make every reasonable effort to delay delivery of existing orders and, in the event of termination, to cancel existing orders on the best terms available.
- 7.1.9 During the period of suspension, the *Design-Builder* shall not remove from the site any part of the *Work*, or any *Product* or materials without the consent of the *Owner*.
- 7.1.10 If the *Work* should be suspended for a period of 30 days or less, the *Design-Builder*, upon the expiration of the period of suspension, shall resume the performance of the *Work* in accordance with the *Contract Documents*. If the suspension was not due to an act or an omission of the *Design-Builder*, the *Contract Price* and *Contract Time* shall be adjusted as provided in paragraph 6.5.1 of GC 6.5 - DELAYS.
- 7.1.11 If, after 30 days from the date of notice of suspension of the *Work* the *Owner* and the *Design-Builder* agree to continue with and complete the *Work*, the *Design-Builder* shall resume operations and complete the *Work* in accordance with any terms and conditions agreed upon by the *Owner* and the *Design-Builder*.

## **GC 7.2 DESIGN-BUILDER'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT**

- 7.2.1 If the *Owner* should be adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Owner's* insolvency, or if a receiver is appointed because of the *Owner's* insolvency, the *Design-Builder* may, without prejudice to any other right or remedy the *Design-Builder* may have, by giving the *Owner* or receiver or trustee in bankruptcy notice in writing, terminate the *Contract*.
- 7.2.2 If the *Work* should be suspended or otherwise delayed for a period of 30 days or more under the *Owner's* direction as provided in paragraph 7.1.7 of GC 7.1 - OWNER'S RIGHT TO PERFORM THE WORK, SUSPEND THE WORK, OR TERMINATE THE CONTRACT or under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Design-Builder* or of anyone directly or indirectly employed or engaged by the *Design-Builder*, the *Design-Builder* may, without prejudice to any other right or remedy the *Design-Builder* may have, by giving the *Owner* notice in writing, terminate the *Contract*.
- 7.2.3 The *Design-Builder* may notify the *Owner* in writing that the *Owner* is in default of the *Owner's* contractual obligations if:
- .1 the *Owner* fails to furnish, when so requested by the *Design-Builder*, reasonable evidence that financial arrangements have been made to fulfil the *Owner's* obligations under the *Contract*,
  - .2 the *Owner* fails to pay the *Design-Builder* the amounts due under the *Contract* or awarded by arbitration or court,
  - .3 the *Owner* has made an assignment of the *Contract* without the required consent of the *Design-Builder*, or
  - .4 the *Owner* persistently disregards communications or reasonable requests from the *Design-Builder* for information or instructions, or otherwise violates the requirements of the *Contract* to a substantial degree.
- 7.2.4 The *Design-Builder's* notice in writing to the *Owner* provided under paragraph 7.2.3 shall advise that if the default is not corrected within 5 *Working Days* following the receipt of the notice, the *Design-Builder* may, without prejudice to any other right or remedy the *Design-Builder* may have, suspend the *Work* or terminate the *Contract*.

7.2.5 If the *Design-Builder* terminates the *Contract* under the conditions set out above, the *Design-Builder* shall be entitled to be paid for all *Work* performed including reasonable profit, for loss sustained upon *Products* and construction machinery and equipment, and such other damages as the *Design-Builder* may have sustained as a result of the termination of the *Contract*.

## **PART 8 DISPUTE RESOLUTION**

### **GC 8.1 AUTHORITY OF THE CONSULTANT**

- 8.1.1 Differences between the parties to the *Contract* as to the interpretation, application, or administration of the *Contract* or any failure to agree where agreement between the parties is called for, collectively referred to as disputes, which are not resolved in the first instance by findings of the *Consultant* as provided in GC 2.1 - CONSULTANT, shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION.
- 8.1.2 If a dispute is not resolved promptly, the *Consultant* shall give such written instructions as in the *Consultant's* opinion are necessary for the proper performance of the *Work* and to prevent delays pending settlement of the dispute. The *Design-Builder* shall act immediately according to such instructions, it being understood that by so doing the *Design-Builder* will not jeopardize any claim the *Design-Builder* may have. If it is subsequently determined that such instructions were in error or at variance with the *Contract Documents*, the *Owner* shall pay the *Design-Builder* costs incurred by the *Design-Builder* in carrying out such instructions which the *Design-Builder* was required to do beyond what the *Contract Documents* correctly understood and interpreted would have required, including costs resulting from interruption of the *Work*.

### **GC 8.2 NEGOTIATION, MEDIATION, AND ARBITRATION**

- 8.2.1 In accordance with the latest edition of the Rules for Mediation of Construction Disputes as provided in CCDC 40, the parties shall appoint a Project Mediator
- .1 within 30 days after the *Contract* was awarded, or
  - .2 if the parties neglected to make an appointment within the 30 day period, within 15 days after either party by notice in writing requests that the Project Mediator be appointed.
- 8.2.2 A party shall be conclusively deemed to have accepted a finding of the *Consultant* under GC 2.1 - CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 *Working Days* after receipt of that finding, the party sends a notice in writing of dispute to the other party and to the *Consultant*, which contains the particulars of the matter in dispute and the relevant provisions of the *Contract Documents*. The responding party shall send a notice in writing of reply to the dispute within 10 *Working Days* after receipt of the notice of dispute setting out particulars of this response and any relevant provisions of the *Contract Documents*.
- 8.2.3 The parties shall make all reasonable efforts to resolve their disputes by amicable negotiations and agree to provide, without prejudice, frank, candid, and timely disclosure of relevant facts, information, and documents to facilitate these negotiations.
- 8.2.4 After a period of 10 *Working Days* following receipt of a responding party's notice in writing of reply under paragraph 8.2.2, the parties shall request the Project Mediator to assist the parties to reach agreement on any unresolved dispute. The mediated negotiations shall be conducted in accordance with the latest edition of the Rules for Mediation of Construction Disputes as provided in CCDC 40.
- 8.2.5 If the dispute has not been resolved within 10 *Working Days* after the Project Mediator was requested under paragraph 8.2.4 or within such further period agreed by the parties, the Project Mediator shall terminate the mediated negotiations by giving notice in writing to both parties.
- 8.2.6 By giving a notice in writing to the other party, not later than 10 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.2.5, either party may refer the dispute to be finally resolved by arbitration under the latest edition of the Rules for Arbitration of Construction Disputes as provided in CCDC 40. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.
- 8.2.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.2.6 is not binding on the parties and, if a notice is not given under paragraph 8.2.6 within the required time, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.

- 8.2.8 If neither party requires by notice in writing given within 10 *Working Days* of the date of notice requesting arbitration in paragraph 8.2.6 that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.2.6 shall be
- .1 held in abeyance until
    - (1) *Substantial Performance of the Work*,
    - (2) the *Contract* has been terminated, or
    - (3) the *Design-Builder* has abandoned the *Work*,whichever is earlier, and
  - .2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.2.6.

### **GC 8.3 RETENTION OF RIGHTS**

- 8.3.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of any rights or recourses, provided the party has given the notices required under Part 8 of the General Conditions - DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.2.
- 8.3.2 Nothing in Part 8 of the General Conditions - DISPUTE RESOLUTION shall be construed in any way to limit a party from asserting any statutory right to a lien under applicable lien legislation of the jurisdiction of the *Place of the Work* and the assertion of such right by initiating judicial proceedings is not to be construed as a waiver of any right that party may have under paragraph 8.2.6 to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.

## **PART 9 PROTECTION OF PERSONS AND PROPERTY**

### **GC 9.1 PROTECTION OF WORK AND PROPERTY**

- 9.1.1 The *Design-Builder* shall protect the *Work* and the *Owner's* property and property adjacent to the *Place of the Work* from damage which may arise as the result of the *Design-Builder's* operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:
- .1 errors in the *Contract Documents* issued by the *Owner*;
  - .2 acts or omissions by the *Owner*, other contractors, their agents and employees.
- 9.1.2 Should the *Design-Builder* in the performance of the *Contract* damage the *Work*, the *Owner's* property, or property adjacent to the *Place of the Work*, the *Design-Builder* shall be responsible for the making good such damage at the *Design-Builder's* expense.
- 9.1.3 Should damage occur to the *Work* or *Owner's* property for which the *Design-Builder* is not responsible, as provided in paragraph 9.1.1, the *Design-Builder* shall at the *Owner's* expense make good such damage to the *Work* and, if the *Owner* so directs, to the *Owner's* property. The *Contract Price* and *Contract Time* shall be adjusted as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.

### **GC 9.2 DAMAGES AND MUTUAL RESPONSIBILITY**

- 9.2.1 If either party to the *Contract* should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone for whom the other party is responsible in law, then that party shall be reimbursed by the other party for such damage. The reimbursing party shall be subrogated to the rights of the other party in respect of such wrongful act or neglect if it be that of a third party.
- 9.2.2 Claims for damage under paragraph 9.2.1 shall be made in writing to the party liable within reasonable time after the first observance of such damage and if undisputed shall be confirmed by *Change Order*. Disputed claims shall be resolved as set out in Part 8 of the General Conditions - DISPUTE RESOLUTION.
- 9.2.3 If the *Design-Builder* has caused damage to the work of another contractor on the *Project*, the *Design-Builder* agrees upon due notice to settle with the other contractor by negotiation or arbitration. If the other contractor makes a claim against the *Owner* on account of damage alleged to have been so sustained, the *Owner* shall notify the *Design-Builder* and may require the *Design-Builder* to defend the action at the *Design-Builder's* expense. The *Design-Builder* shall satisfy a final order or judgment against the *Owner* and pay the costs incurred by the *Owner* arising from such action.
- 9.2.4 If the *Design-Builder* becomes liable to pay or satisfy a final order, judgment, or award against the *Owner*, then the *Design-Builder*, upon undertaking to indemnify the *Owner* against any and all liability for costs, shall have the right to appeal in the name of the *Owner* such final order or judgment to any and all courts of competent jurisdiction.

### **GC 9.3 TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS**

- 9.3.1 For the purposes of applicable environmental legislation, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.
- 9.3.2 Prior to the *Design-Builder* commencing the *Work*, the *Owner* shall
- .1 take all reasonable steps to determine whether any toxic or hazardous substances or materials are present at the *Place of the Work*, and
  - .2 provide the *Design-Builder* with a written list of any such substances and materials.
- 9.3.3 The *Owner* shall take all reasonable steps to ensure that no person suffers injury, sickness, or death and that no property is injured, damaged, or destroyed as a result of exposure to, or the presence of, toxic or hazardous substances or materials which were at the *Place of the Work* prior to the *Design-Builder* commencing the *Work*.
- 9.3.4 Unless the *Contract Documents* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with legal requirements, to dispose of, store or otherwise render harmless, toxic or hazardous substances or materials which were present at the *Place of the Work* prior to the *Design-Builder* commencing the *Work*.
- 9.3.5 If the *Design-Builder*
- .1 encounters toxic or hazardous substances or materials at the *Place of the Work*, or
  - .2 has reasonable grounds to believe that toxic or hazardous substances or materials are present at the *Place of the Work*,
- which were not disclosed by the *Owner*, as required under paragraph 9.3.2, or which were disclosed but have not been dealt with as required under paragraph 9.3.4, the *Design-Builder* shall
- .3 take all reasonable steps, including stopping the *Work*, to ensure that no person suffers injury, sickness, or death and that no property is injured or destroyed as a result of exposure to or the presence of the substances or materials, and
  - .4 immediately report the circumstances to the *Owner* in writing.
- 9.3.6 If the *Design-Builder* is delayed in performing the *Work* or incurs additional costs as a result of taking steps required under paragraph 9.3.5.3, the *Contract Time* shall be extended and the *Design-Builder* shall be reimbursed for all reasonable costs incurred as a result of the delay and as a result of taking those steps.
- 9.3.7 The *Owner* and the *Design-Builder* may jointly rely upon the advice of an independent expert in a dispute under paragraph 9.3.6 and, in that case, the expert shall be jointly selected, retained, and paid by the *Owner* and the *Design-Builder*.
- 9.3.8 The *Owner* shall indemnify and hold harmless the *Design-Builder*, *Consultant*, other consultants, *Subcontractors*, *Suppliers*, and their agents and employees, from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or resulting from exposure to, or the presence of, toxic or hazardous substances or materials which were at the *Place of the Work* prior to the *Design-Builder* commencing the *Work*. This obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity set out in GC 12.1 - INDEMNIFICATION or which otherwise exist respecting a person or party described in this paragraph.
- 9.3.9 GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS shall govern over the provisions of paragraph 1.4.1 of GC 1.4 - RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

### **PART 10 GOVERNING REGULATIONS**

#### **GC 10.1 TAXES AND DUTIES**

- 10.1.1 The *Contract Price* shall include all taxes and customs duties in effect at the time of the proposal or bid closing except for *Value Added Taxes* payable by the *Owner* to the *Design-Builder* as stipulated in Article A-4 of the Agreement - CONTRACT PRICE.
- 10.1.2 Any increase or decrease in costs to the *Design-Builder* due to changes in such included taxes and duties after the time of the proposal or bid closing, as the case may be, shall increase or decrease the *Contract Price* accordingly.
- 10.1.3 Refunds that are properly due to the *Owner* and have been recovered by the *Design-Builder* will be promptly refunded to the *Owner*.

## **GC 10.2 LAWS, NOTICES, PERMITS, AND FEES**

- 10.2.1 The *Owner* shall obtain and pay for the permanent easements and rights of servitude.
- 10.2.2 Unless otherwise stated, the *Design-Builder* shall obtain and pay for the building permit and other permits, licences, or certificates necessary for the performance of the *Work* which were in force at the time of the proposal or bid closing.
- 10.2.3 The *Design-Builder* shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the performance of the *Work* and which relate to the *Work*, to the preservation of the public health, and to construction safety.
- 10.2.4 The *Design-Builder* shall not be responsible for verifying that the *Owner's Statement of Requirements* is in substantial compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the *Work*. If, after the time of the proposal or bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the *Contract Documents*, the *Design-Builder* shall notify the *Owner* in writing requesting direction immediately upon such variance or change becoming known. Changes shall be made as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 10.2.5 If the *Design-Builder* fails to notify the *Owner* in writing, fails to obtain direction as required in paragraph 10.2.4, and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, or codes; the *Design-Builder* shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses, and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations, or codes.

## **GC 10.3 PATENT FEES**

- 10.3.1 The *Design-Builder* shall pay the royalties and patent licence fees required for the performance of the *Contract*. The *Design-Builder* shall hold the *Owner* harmless from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Design-Builder's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention by the *Design-Builder* or anyone for whose acts the *Design-Builder* may be liable.
- 10.3.2 The *Owner* shall hold the *Design-Builder* harmless against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Design-Builder's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention in executing anything for the purpose of the *Contract*, the model, plan, or design of which was supplied to the *Design-Builder* as part of the *Contract Documents*.

## **GC 10.4 WORKERS' COMPENSATION**

- 10.4.1 Prior to commencing the *Work*, *Substantial Performance of the Work*, and the application for final payment, the *Design-Builder* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*, including payments due under it.
- 10.4.2 At any time during the term of the *Contract*, when requested by the *Owner*, the *Design-Builder* shall provide such evidence of compliance by the *Design-Builder* and *Subcontractors* and any other person performing the *Work* who is required to comply with such legislation.

## **PART 11 INSURANCE — BONDS**

### **GC 11.1 INSURANCE**

- 11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, and unless the *Owner* and the *Design-Builder* agree to obtain project-specific insurance, or higher insurance limits, the *Design-Builder* shall provide, maintain, and pay for the minimum insurance coverages specified in GC 11.1 - INSURANCE.

#### **.1 General Liability Insurance:**

The policy shall be in the joint names of the *Design-Builder*, the *Owner*, the *Consultant* and other consultants, with limits of not less than \$2,000,000 per occurrence and with a property damage deductible of not more than \$5,000. The insurance coverage shall not be less than the insurance required by IBC Forms 2100 and 2320, or their equivalent replacement. Umbrella or excess liability insurance may be used to achieve the desired limit. Where the *Design-Builder* maintains a single, blanket policy, the addition of the *Owner* is limited to liability arising out of the *Work* and all operations necessary or incidental thereto.

Completed Operations Liability coverage shall be maintained continuously from the commencement of the *Construction* until two years after *Substantial Performance of the Work*.

**.2 Errors and Omissions Insurance:**

The *Design-Builder* shall ensure that the *Consultant* and other consultants engaged in the performance of the *Design Services* each carry Errors and Omissions Insurance that have limits of not less than \$250,000 per claim and with an aggregate limit of not less than \$500,000 within any policy year. The *Consultant* or other consultants found to be at fault will be responsible for the deductible amount.

The policy shall be maintained continuously from the commencement of the *Work*, until 2 years after *Substantial Performance of the Work*.

**.3 Automobile Liability Insurance:**

The policy covers for bodily injury, death, and damage to property with respect to all licensed vehicles owned or leased by the *Design-Builder*. The policy shall have limits of not less than \$2,000,000 inclusive per occurrence. If the policy is issued pursuant to a government-operated automobile insurance system, the *Design-Builder* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Design-Builder*.

**.4 Aircraft and Watercraft Liability Insurance:**

The policy shall be for owned or non-owned aircraft and watercraft used directly or indirectly by the *Design-Builder* in the performance of the *Work*, including use of additional premises. The policy shall have limits of not less than \$2,000,000 inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof and limits of not less than \$2,000,000 for aircraft passenger hazard.

**.5 Property and Boiler and Machinery Insurance:**

(1) "All risks" property insurance shall be in the joint names of the *Design-Builder*, the *Owner*, the *Consultant*, all other consultants, and all *Subcontractors*. The insurance coverage shall not be less than the insurance required by IBC Forms 4042 and 4047, or their equivalent replacement. The insurance provided shall have limits of not less than the sum of the amount of the *Contract Price*, the applicable *Value Added Taxes*, and the full value of products provided by the *Owner* for incorporation into the *Work* as specified in the Supplementary Conditions. The policy shall have a deductible of not more than \$10,000.

(2) Boiler and machinery insurance shall be in the joint names of the *Design-Builder*, the *Owner*, the *Consultant*, all consultants, and all *Subcontractors*. The insurance coverage shall not be less than the insurance provided by the "Comprehensive Boiler and Machinery Form". The insurance provided shall have limits of not less than the replacement value of the boilers, pressure vessels, and other insurable objects forming part of the *Work*.

(3) The policies shall allow for partial or total use or occupancy of the *Work*. If because of such use or occupancy the *Design-Builder* is unable to provide coverage, the *Design-Builder* shall notify the *Owner* in writing. Prior to such use or occupancy, the *Owner* shall provide, maintain, and pay for all risk property and boiler insurance in the amounts described in sub-paragraphs (1) and (2), including coverage for such use or occupancy and shall provide the *Design-Builder* with proof of such insurance. The policies shall be amended to include permission for completion of *Construction* and shall include all insureds as specified in sub-paragraph (1). The *Design-Builder* shall refund to the *Owner* the unearned premiums applicable to the *Design-Builder's* policies upon termination of coverage.

(4) The policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Design-Builder* as their respective interests may appear. The *Design-Builder* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Design-Builder* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Design-Builder* shall be entitled to a reasonable extension of *Contract Time*.

(5) The *Design-Builder* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount at which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds and as provided in GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.3 - PROGRESS PAYMENT. In addition the *Design-Builder* shall be entitled to receive from the payments made by the insurer the amount of the *Design-Builder's* interest in the restoration of the *Work*.



- (6) In the case of loss or damage to the *Work* arising from the work of another contractor, or *Owner's* own forces, the *Owner*, in accordance with the *Owner's* obligations under paragraph 3.3.2.4 of GC 3.3 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, shall pay the *Design-Builder* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as provided in GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.3 - PROGRESS PAYMENT.

**.6 Equipment Insurance:**

The policy covers construction machinery and equipment used by the *Design-Builder* for the performance of the *Work*, including boiler insurance on temporary boilers and pressure vessels. The policy shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. Subject to satisfactory proof of financial capability by the *Design-Builder* for self-insurance, the *Owner* agrees to waive the equipment insurance requirement.

- 11.1.2 Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the *Work* until the date of the final certificate for payment.
- 11.1.3 The *Design-Builder* shall be responsible for deductible amounts under the policies except where otherwise provided in GC 11.1 - INSURANCE or where such amounts may be excluded from the *Design-Builder's* responsibility by the terms of GC 9.1 - PROTECTION OF WORK AND PROPERTY and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.
- 11.1.4 Prior to commencement of the *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Design-Builder* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements.
- 11.1.5 Where the full insurable value of the *Work* is substantially less than the *Contract Price*, the *Owner* may reduce the amount of insurance required or waive the Property and Boiler and Machinery Insurance requirement.
- 11.1.6 If the *Design-Builder* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and give evidence to the *Design-Builder* and the *Consultant*. The *Design-Builder* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the amount which is due or may become due to the *Design-Builder*.
- 11.1.7 All required insurance policies shall be placed with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.
- 11.1.8 All required insurance policies shall be endorsed to provide the *Owner* with not less than 30 days notice in writing in advance of any cancellation and material amendment or change restricting coverage.
- 11.1.9 All insureds shall cooperate with the *Design-Builder* to comply with any reporting requirements of the insurance policies in order to maintain the policies in good standing, to give notice in writing of any incidents which may result in a claim or loss covered by the policies and to provide documentation necessary in the defence or settlement of claims.

**GC 11.2 BONDS**

- 11.2.1 The *Design-Builder* shall, prior to commencement of the *Work* or within the time specified in the *Contract*, provide to the *Owner* such surety bonds as are required by the *Contract Documents*.
- 11.2.2 Such bonds shall be issued by a duly licensed surety company authorized to transact a business of suretyship in the province or territory of the *Place of the Work* and shall be maintained in good standing until the fulfilment of the *Contract*. The surety bonds shall be in accordance with the latest edition of the CCDC approved bond forms.

## PART 12 INDEMNIFICATION — WAIVER — WARRANTY

### GC 12.1 INDEMNIFICATION

- 12.1.1 The *Design-Builder* shall indemnify and hold harmless the *Owner*, the *Owner's* agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings (hereinafter called "claims"), by third parties that arise out of, or are attributable to, the *Design-Builder's* performance of the *Work*, provided such claims are:
- .1 attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and
  - .2 caused by negligent acts or omissions of the *Design-Builder*, the *Consultant*, all other consultants, all *Subcontractors* or anyone for whose acts the *Design-Builder* may be liable, and
  - .3 made in writing within a period of 2 years from the date of *Substantial Performance of the Work* or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work*.  
The *Owner* expressly waives the right to indemnity for claims other than those stated above.
- 12.1.2 The obligation of the *Design-Builder* to indemnify under this *Contract* shall be limited to the insurance coverages and limits as agreed to be provided in GC 11.1 - INSURANCE.
- 12.1.3 The *Owner* shall indemnify and hold harmless the *Design-Builder*, the *Consultant*, all other consultants, all *Subcontractors*, all *Suppliers*, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Design-Builder's* performance of the *Design Services* and *Construction*, which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the *Place of the Work* or a negligent act or omission or wilful default of the *Owner*, its agents and employees or any other person in respect of those acts the *Owner* may be liable.
- 12.1.4 GC 12.1 - INDEMNIFICATION shall govern over the provisions of paragraph 1.4.1 of GC 1.4 - RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

### GC 12.2 WAIVER OF CLAIMS

- 12.2.1 Waiver of Claims by *Owner*  
As of the date of the final certificate for payment, the *Owner* expressly waives and releases the *Design-Builder*, the *Consultant*, all other consultants, all *Subcontractors*, all *Suppliers*, and their agents and employees from all claims against them including without limitation those that might arise from the negligence or breach of contract by the *Design-Builder*, the *Consultant*, all other consultants, all *Subcontractors*, and their agents and employees except one or more of the following:
- .1 those made in writing prior to the date of the final certificate for payment and still unsettled;
  - .2 those arising from the provisions of GC 12.1 - INDEMNIFICATION or GC 12.3 - WARRANTY;
  - .3 those arising from the provisions of paragraph 9.3.5 of GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS and arising from the *Design-Builder* bringing or introducing any toxic or hazardous substances and materials to the *Place of the Work* after the *Design-Builder* commences the *Work*.  
In the Common Law provinces GC 12.2.1.4 shall read as follows:
  - .4 those made in writing within a period of 2 years from the date of *Substantial Performance of the Work* or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work* and arising from any liability of the *Design-Builder* for damages resulting from the *Design-Builder's* performance of the *Contract* with respect to substantial defects or deficiencies in the *Work* for which the *Design-Builder* is proven responsible. As used herein "substantial defects or deficiencies" means those defects or deficiencies in the *Construction* which affect the *Work* to such an extent or in such a manner that a significant part or the whole of the *Construction* is unfit for the purpose specified in the *Contract Documents*.  
In the Province of Quebec GC 12.2.1.4 shall read as follows:
  - .4 those arising under the provisions of Article 2118 of the Civil Code of Quebec.
- 12.2.2 Waiver of Claims by *Design-Builder*  
As of the date of the final certificate for payment, the *Design-Builder* expressly waives and releases the *Owner* from all claims against the *Owner* including without limitation those that might arise from the negligence or breach of contract by the *Owner* except:
- .1 those made in writing prior to the *Design-Builder's* application for final payment and still unsettled; and
  - .2 those arising from the provisions of GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS or GC 10.3 - PATENT FEES.

12.2.3 GC 12.2 - WAIVER OF CLAIMS shall govern over the provisions of paragraph 1.4.1 of GC 1.4 - RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

### **GC 12.3 WARRANTY**

- 12.3.1 The warranty period with regard to the *Contract* is one year from the date of *Substantial Performance of the Work* or such other periods specified in the *Contract Documents* for certain portions of the *Work* or *Products*.
- 12.3.2 The *Design-Builder* warrants that the *Design Services* meet the standard described in GC 2.1.4. and that the *Work* is in accordance with the *Contract Documents*.
- 12.3.3 Except for the provisions of paragraphs 12.3.2 and 12.3.6, the *Design-Builder* shall correct promptly, at the *Design-Builder's* expense, any work which is not in accordance with the *Contract Documents* or defects or deficiencies in the *Work* which appear prior to and during the warranty periods specified in the *Contract Documents*.
- 12.3.4 The *Owner* shall promptly give the *Design-Builder* notice in writing of observed defects and deficiencies that occur during the warranty period.
- 12.3.5 The *Design-Builder* shall correct or pay for damage resulting from the defects or deficiencies and the corrections made under the requirements of paragraph 12.3.3.
- 12.3.6 The *Design-Builder* shall be responsible for obtaining *Product* warranties in excess of one year on behalf of the *Owner* from the manufacturer. These *Product* warranties shall be issued by the manufacturer to the benefit of the *Owner*.
- 12.3.7 The *Design-Builder* does not warrant against the effects of corrosion, erosion or wear and tear of any *Product* or failure of any *Product* due to faulty operations or maintenance by the *Owner* or conditions of operation more severe than those specified for the *Product*.
- 12.3.8 The warranties and guarantees specified in GC 12.3 - WARRANTY or elsewhere in the *Contract Documents* are the only warranties and guarantees of the *Design-Builder* applicable to the *Work* and no other warranties or guarantees, statutory or otherwise, are or will be implied.

THE CORPORATION OF THE TOWN  
OF GANANOQUE  
INVESTMENT GRADE AUDIT (FINAL)  
OCTOBER 14, 2015



E0239A



\*Photo courtesy of Cree Inc.

October 14, 2015

Melanie Kirkby  
Rick Cooper  
Town of Gananoque  
30 King Street East, P.O. Box 100  
Gananoque, ON K7G 2T6

Dear Mrs. Melanie Kirkby

We are pleased to present to you this Investment Grade Audit of your streetlight network.

We have concluded our detailed analysis of your street lighting system by revising the annual energy consumption and savings estimates for the Town of Gananoque to reflect the proposed upgrade to LED based on the GIS/GPS mapping. Your street lighting network is currently consuming 466,121 kWh. By upgrading to LEDs, your projected annual energy consumption will fall substantially to 155,185 kWh resulting in 310,936 kWh energy savings, equivalent to a 67% consumption reduction.

The total project cost has increased as we found 39 more fixtures compared to the desktop review. As well, the total number of decorative fixtures has increased from 140 to 220. (You will find the total project costs for Cobra Heads and Decoratives identified separately on page 10 of this report). The IESO incentive has decreased from \$68,290 to \$63,669. The final project cost of \$609,877 includes an allowance for 35% rewiring, 100% refusing and a 2% arm replacement.

We look forward to moving the project to the next phase. We will arrange for a conference call to discuss the contents of this report in the next few days, but until then please feel free to contact us should you have any questions.

Yours truly,

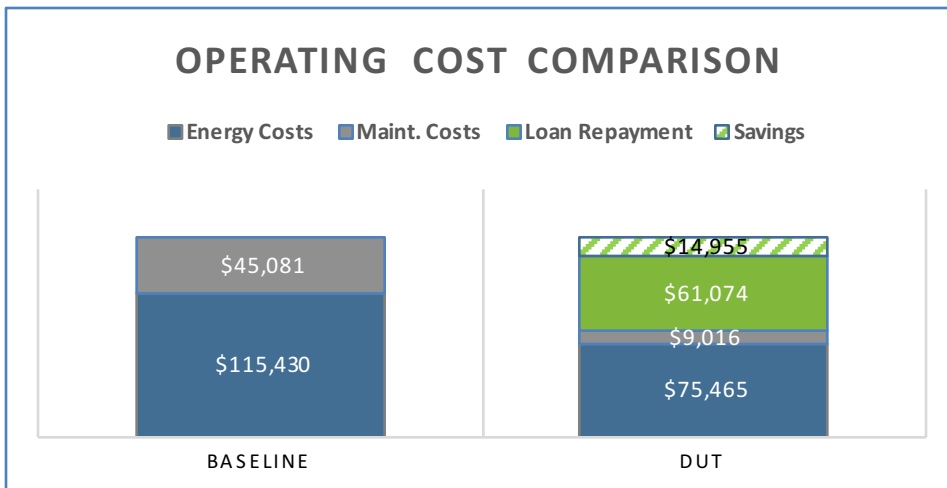


Sean Neely,  
President

# EXECUTIVE SUMMARY

The table below summarizes our findings based on the lighting Inventory obtained through a GIS/GPS audit of fixtures and using up to date utility rates from your Hydro Company to calculate current and projected electricity costs. The savings that will be achieved following the LED upgrade will be significant and will benefit the entire Town.

CURRENT STATUS	BEFORE UPGRADE	POST UPGRADE	VARIANCE	PERCENT
Number of Fixtures	641	641	0	0%
Annual Electricity Consumption (kWh)	466,121	155,185	310,936	67% ↓
Annual Electricity Costs	\$115,430	\$75,465	\$39,965	35% ↓
Annual Maintenance Cost (5 yr. avg.)	\$45,081	\$9,016	\$36,064	80% ↓
Total Street Lights Expenditures	\$160,511	\$84,481	\$76,030	47% ↓
Average Annual Cost per Fixture	\$250	\$132	\$119	47% ↓



Please note that in the diagram the loan repayment reflects an Infrastructure Ontario loan with a period of 10 years.

We revised the total project cost to reflect the new lighting inventory that will be replaced obtained through the GIS/GPS.

	D.U.T.
Number of Fixtures	641
Total Project Costs	\$609,877
IESO Incentive	-\$63,669
Net Project Costs	\$546,208
Price per Fixture Post IESO Incentive	\$852.12
Payback Period (Years)	6.7

# INTRODUCTION

RealTerm Energy Corp. has examined in detail the Town of Gananoque’s existing streetlight network records to produce this Investment Grade Audit. Our analysis included the following stages:

- Evaluate existing GPS/GIS data of the entire street light inventory of the municipality
- Reconcile differences between the municipality’s and the Utility’s records if required
- Work with Cree Lighting to apply appropriate LED based lighting designs
- Update the replacement LED fixtures from the desktop review
- Examine in detail the municipality’s utility bills
- Confer with utility to address any questions or ambiguities found
- Examine detailed maintenance records of the municipality
- Establish baseline results for energy usage and maintenance costs
- Project revised estimated costs and cost savings

A summary of our findings, compared to our Desktop Review presented in 2015 is shown below:

	DESKTOP REVIEW	IGA RESULT	VARIANCE	PERCENT
Number of Fixtures	602	641	39	6%
Type of Fixture	HPS/MV	HPS/MV	NA	-
Energy Savings (%)	68.4%	66.7%	-1.7%	-
Energy Consumption (kWh)	524,159	466,121	(58,038)	-11%
Projected Annual Electricity Costs	\$113,387	\$115,430	\$2,043	2%
Annual Maintenance Cost (5 year average)	\$45,503	\$45,081	-\$422	-1%
Average Annual Cost per Fixture	\$264	\$250	-\$14	-5%
Total Street Lights Expenditures	\$158,890	\$160,511	\$1,621	1%
Total Project Costs	\$448,097	\$609,877	\$161,779	36%
IESO Incentive	-\$68,290	-\$63,669	\$4,621	-7%
Net Project Costs <i>after IESO</i>	\$379,807	\$546,208	\$166,400	44%

1. The energy consumption in kWh has decreased due to a different wattage distribution being found than was estimated in the desktop review inventory. However the projected electricity costs have slightly increased due to an higher total number of fixtures (increase of fixed fees).
2. Overall, the total project costs have increased due to the increase of the number of decorative fixtures, which are more expensive than cobra heads.



# GPS MAPPING

RealTerm Energy conducted a complete GIS inventory of the Town of Gananoque’s streetlights and used the information derived from this review to develop a detailed picture of the Town’s current streetlighting network including the following:

- Accurate count of all fixtures and fixture types
- Wattage of each existing fixtures
- Length of fixture arms, fixture heights, setbacks from roadway, pole spacing, etc.
- Exact GPS coordinates
- Road classifications
- Hydro pole ID numbers (when available)

From this database, we were able to assess the exact state of the Town’s streetlight inventory to enable us to clearly define the current street light inventory and energy demand, which we use to accurately estimate the energy savings obtained from the conversion of Gananoque’s current street lights to LEDs.

A detailed breakdown of the revised lighting inventory, obtained from the GIS/GPS audit appears below:

## GPS INVENTORY (Actual)

TYPE	SYSTEM WATTAGE	QTY	DEMAND(kw)
HPS 100W	130	219	28.5
HPS 150W	190	82	15.6
HPS 250W	310	95	29.5
HPS 400W	475	2	1.0
Sentinel light MV (250W)	285	21	6.0
Sentinel light MV (400W)	460	2	0.9
Deco - Post Top (Marina)	190	6	1.1
Decorative - Acorn Post Top	190	44	8.4
Decorative - Bell Downlighting	130	2	0.3
Decorative - Caged Acorn Post Top	190	69	13.1
Decorative - Cylindrical Post Top	190	8	1.5
Decorative - Victorian Lantern Post Top (Type I)	130	17	2.2
Victorian Lantern Post Top (Type II) 70W	100	5	0.5
Victorian Lantern Post Top (Type II & III) 100W	130	52	6.8
Decorative - Villa Lantern with Top Hat	130	8	1.0
Floodlight 175W	210	8	1.7
Floodlight 250W	310	1	0.3
<b>TOTAL</b>		<b>641</b>	<b>118.2</b>

*Compared to the desktop review, the net total number of fixtures has increased from 602 to 641 as we discovered 41 fewer cobra head fixtures and 80 more decorative fixtures than were indicated in the Town’s inventory.*



## LED REPLACEMENT INVENTORY

The reduced demand after the implementation of the LED street light upgrade will directly impact the annual energy consumption, measured in kWh. Our findings show that the demand will be reduced by 78.9 kW. This will result in energy savings 67% over the current consumption, equivalent to 310,936 kWh annually. The table below illustrates the proposed changes to the Town’s inventory, based upon our examination of the GPS data and lighting design results (see next page for more details on our design methodology)

### LED REPLACEMENTS (Actual, Post-Upgrade)

TYPE	WATTAGE	QTY	DEMAND (kW)	DESIGNLIGHTS CONSORTIUM*
XSPA_2GD-USN (38W)	38	81	3.1	DLC
XSPA_2GC-USN (43W)	43	191	8.2	DLC
XSPA_2GA-USN (53W)	53	58	3.1	DLC
XSPA_2HE-USN (65W)	65	20	1.3	DLC
XSPA_2HD-USN (73W)	73	20	1.5	DLC
XSPA_2HA-USN (101W)	101	24	2.4	DLC
XSPA_2HL-USN (168W)	168	27	4.5	DLC
GRPCL 30LEDE53 MVOLT 4K R3P7	70	9	0.6	Not DLC Listed
245L 20LEDE10 MVOLT 4K R5 RNA BK	71	8	0.6	DLC
AUL 070 5K ASB L3/L5 S DM H PCS	70	71	5.0	DLC
CA10T4-LAPR-3-SKY-50W-4K	50	9	0.5	Not DLC Listed
CA10T4-LAPR-3-SKY-68W-4K	68	15	1.0	Not DLC Listed
CA23T4-VS3AR-GAL-3-60W-4K	60	49	2.9	DLC
CA23T4-VS3AR-GAL-3-80W-4K	80	40	3.2	DLC
CLE17T4-GAL-3-80W-4K	80	8	0.6	DLC
SY21P1-GAL-3-60W-4K	60	2	0.1	DLC
OSQ A AA 3ME/40D A 40K UL BZ DIM Q4	79	8	0.6	DLC
OSQ A AA 3ME A 40K UL BZ DIM	112	1	0.1	DLC
<b>TOTAL</b>		<b>641</b>	<b>39.4</b>	

\*DLC listed products are LED products that have been tested at a DLC approved laboratory and that comply with specified performance and energy efficiency criteria. These products are eligible for IESO incentives. (See the DesignLights Consortium website at [www.designlights.org](http://www.designlights.org)). The ‘Not DLC listed’ products are not eligible for the IESO incentive. Please note that in the table above, 3 different types of decorative lights are not eligible for IESO incentives as they are not DLC listed. We have chosen these lights and are recommending them to you because in our professional opinion they are of equivalent quality and energy efficiency, and have the same type of independent testing as is done for DLC-listed lights; however because they are made in smaller quantities the manufacturer has not paid to submit them to the DLC list. They are less expensive by enough to offset the loss of incentive support.

### FORECASTED CHANGES IN ENERGY DEMAND

	Desktop Review	Investment Grade Audit	Difference
Energy Demand pre-upgrade (kW)	122.3	118.2	-4.1
Energy Demand post upgrade (kW)	41.9	39.4	-2.6
Difference (kW)	-80.4	-78.9	1.5

# LED LIGHTING DESIGN

RealTerm Energy’s technical evaluation team reviewed the GPS information we received and formulated a hybrid approach to completing roadway designs for The Town of Gananoque. After evaluating the configuration of each light fixture for road classification, pole spacing, mounting height, arm length and curb setback, we were able to conclude that Gananoque can achieve the same or better light levels than those of its current incumbent street lights. The lighting design as suggested for the most part meets RP-8 lighting levels. (RP-8 is a recommended, though not required practice for roadway illumination)

Those portions of the Town’s lights points that do not meet RP-8 could be for a number of reasons, including:

- Inadequate Pole Spacing (poles are spaced too far apart),
- Insufficient Mounting Height, or
- Missing Light Fixtures

We concluded that in order to fully comply with RP-8 guidelines, the high costs of the required pole additions, replacements, rewiring and retrenching would render the project uneconomical.

**Our analysis concludes that in all instances where RP-8 could not be achieved with a new LED fixture, this was also the case for the currently installed fixture.** In those instances, photometric design has been utilized to select an LED luminaire in which the wattage and distribution pattern combine to meet or exceed the lighting levels of the currently installed fixtures.

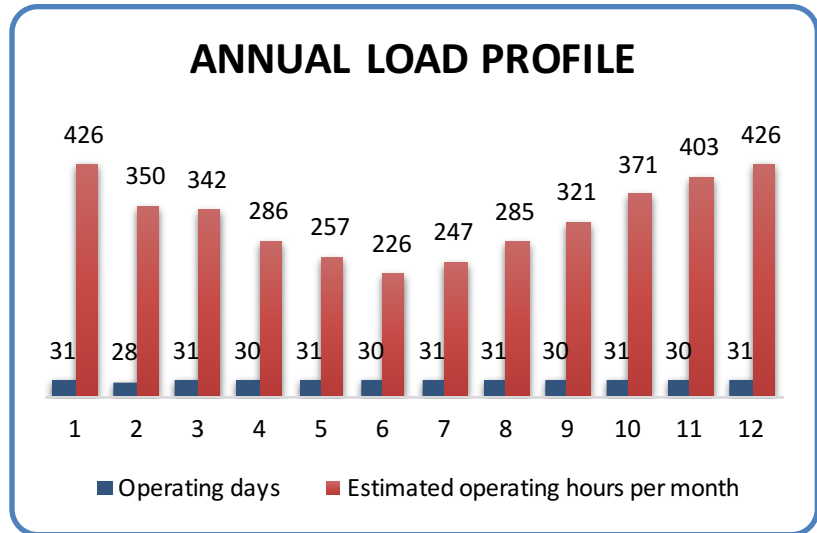
Based upon the replacement luminaires detailed in the following pages, we anticipate that the impact on the Town’s annual energy consumption will be as follows:

ENERGY CONSUMPTION	Desktop Review	%	IGA Results	%
Current Annual Energy Consumption (kWh)	524,159	-	466,121	-
Projected LED Annual Energy Consumption (kWh)	165,348	-	155,185	-
Annual Savings (kWh)	358,811	68%	310,936	67%

## ELECTRICAL COST ANALYSIS

### EASTERN ONTARIO POWER'S LOAD PROFILE

Based on the most recent 12 month street light energy consumption and demand figures provided by Eastern Ontario Power, we were able to assess the annual load profile used by the utility to charge the Town of Gananoque for its street lights. The annual load profile is a critical part of the Baseline calculation, used to project the actual energy consumption and future energy savings that will be realized after the upgrade.

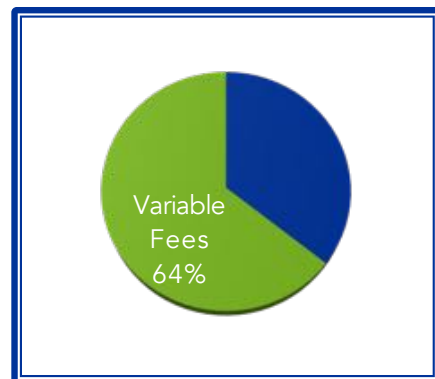


### BASELINE ENERGY CALCULATIONS

Utilities charge two types of fees: fixed and variable. The fixed fees will remain the same before and after the upgrade because that rate is charged on a per connection basis, while the variable components of the bill vary depending on the consumption, also known as 'demand'. Higher fixed fees as a percentage of the total mean less dollar savings from the upgrade due to a change in demand.

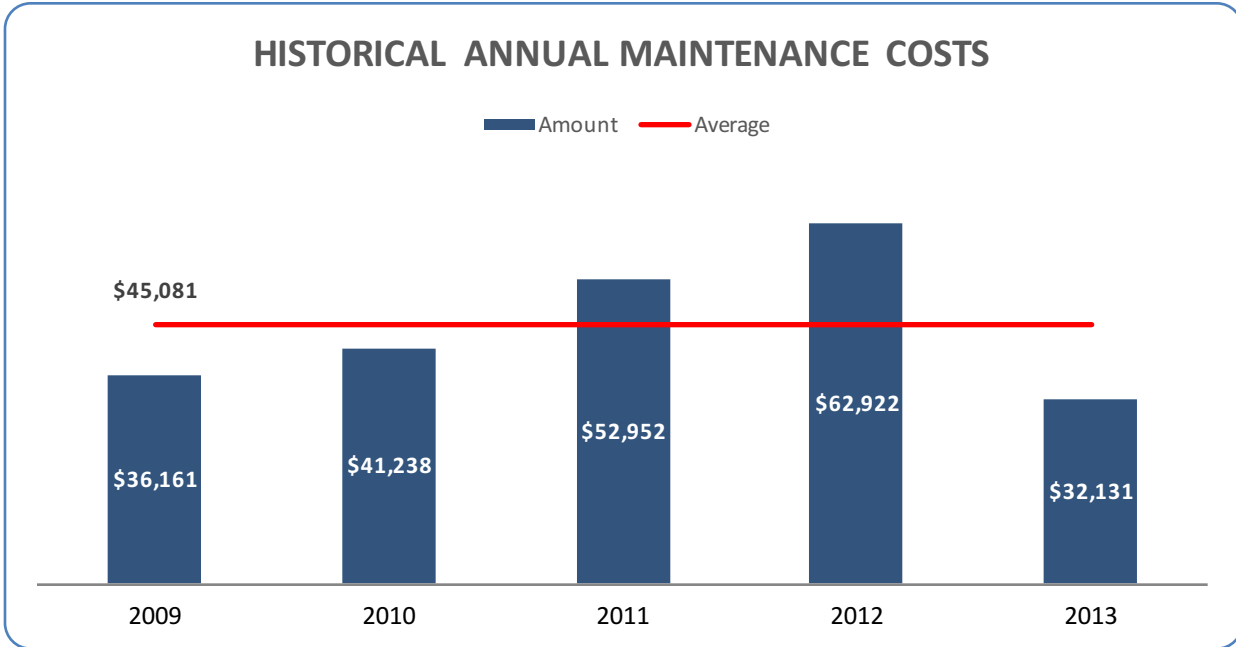
In the case of Eastern Ontario Power the fixed fees currently represent 36% of Gananoque's street light energy bill.

	Fixed Fees	Variable Fees	Total Cost
Before	\$41,152	\$74,278	\$115,430
After	\$41,152	\$34,313	\$75,465
Savings			(\$39,965)



## MAINTENANCE ANALYSIS

### BASELINE MAINTENANCE



We have examined the maintenance costs for the past 5 years when data was provided by the municipality. The average is \$45,081 per annum, which equates to roughly a cost per fixture of \$70 (pro rated for the scope of fixtures included in this IGA). We conservatively estimate that ongoing LED maintenance will equate to 80% savings over current HPS expenditures, or approximately \$36,064 in the first year.

However, \$70 per fixture is substantially above what we would expect annual maintenance to be for a network of this size. In our experience, a number approaching \$25-30 per year per fixture is more common in Ontario municipalities. This could be due to the age of your fixtures or the number of decoratives, but we believe further clarification of these expenses is warranted.

### Energy & Maintenance Total Savings

	Before	After	Savings
Energy	\$115,430	\$75,465	\$39,965
Maintenance	\$45,081	\$9,016	\$36,064
<b>Total</b>	<b>\$160,511</b>	<b>\$84,481</b>	<b>\$76,030</b>

# PROJECT COSTS & FINANCIAL OPTIONS

The following illustrates the option chosen by the Town to finance its LED upgrade which is The Design, Upgrade and Transfer option, where it is assumed that the Town itself arranges the financing for the project. Typically, this would be from a source like Infrastructure Ontario, with its low-cost interest rates.

## DESIGN, UPGRADE & TRANSFER

### PROJECT COSTS, SAVINGS AND INVESTMENT RETURN

PROJECT COSTS		PROJECT SAVINGS		VALUE	VARIANCE
Number of Fixtures	641	LED Energy Consumption	155,185 kWh	67%	↓
Total Project Costs	\$609,877	Year 1 LED Energy Costs	\$75,465	35%	↓
Total Project Costs for Cobraheads	\$189,391	Year 1 Maintenance Costs	\$9,016	80%	↓
Total Project Costs for Decoratives	\$420,486	Year 1 Operating Costs	\$84,481	\$76,030	↓
IESO Incentive	-\$63,669	Year 1 Cost per Fixture	\$132	\$119	↓
Net Project Costs	\$546,208				
Price per Fixture	\$852				

**Note regarding the IESO Incentive:**

The above incentive amount is calculated using the 2015 SOE guidelines. This amount may vary in 2016 at the sole discretion of the LDC.

The above project costs include a provision for the following:

- 35% of the fixtures being completely rewired
- 100% of the fixtures being refused, and
- An allowance for 2% of the arms to be replaced.

This minimizes the likelihood of service calls over the life of the fixtures, greatly reduce maintenance costs. Should less than this amount require rewiring or arm replacement, the costs shall be reduced from the final billing on a time and materials basis. In the unlikely case that the Hydro Company insists on charging a fee for changing the connections to the secondary bus line when near high tension lines, RTE will not be responsible for these fees.

## FINANCIAL APPRAISAL OF THE PROJECT

Design, Upgrade & Transfer	
Payback Period (Years)	6.7
IRR*	8.7%
NPV	\$100,862

\*Discount rate:5%

## INFRASTRUCTURE ONTARIO LOAN

Infrastructure Ontario offers loans at favorable rates to most municipalities seeking to improve their civic infrastructure. Interest rates vary with market conditions and are set at the prevailing rate at the time the loan is advanced. The table below summarizes payment options which would be available to fund the project through Infrastructure Ontario. Please note these rates change daily and are submitted below for evaluative and budgeting purposes.

CAPITAL COST	TERM (YEARS)	INTEREST RATE	ANNUAL PAYMENT	COST OF BORROWING
\$546,208	10	2.27%	\$61,074	\$64,537
\$546,208	15	2.80%	\$44,586	\$122,578
\$546,208	20	3.14%	\$36,745	\$188,690

\* Investment cost less IESO rebate

### NET SAVINGS AFTER FINANCING COSTS:

Year	1	2	3	4	5	6	7	8	9	10	11-15
Annual Savings	\$76,030	\$77,950	\$79,921	\$81,943	\$84,019	\$86,149	\$88,335	\$90,579	\$92,882	\$95,246	\$513,935
Loan Repayment	\$61,074	\$61,074	\$61,074	\$61,074	\$61,074	\$61,074	\$61,074	\$61,074	\$61,074	\$61,074	\$0
Net Savings	\$14,955	\$16,876	\$18,846	\$20,869	\$22,944	\$25,074	\$27,261	\$29,505	\$31,808	\$34,172	\$513,935

We have assumed that given the simple payback exceeds five years, that an Infrastructure Ontario loan with an amortization term of 10 years would optimize the overall savings potential to the Town.

As can be seen, there are significant net savings from the outset of the project, net of financing costs.

# GREENHOUSE GAS REDUCTION

ESTIMATED GREENHOUSE GAS REDUCTION	Desktop Review	IGA Results
Current Annual Energy Consumption (kWh)	524,159	466,121
Projected LED Annual Energy Consumption (kWh)	165,348	155,185
Annual kWh Savings	358,811	310,936
Estimated Annual GHG Reduction (metric tonnes)	36	24
GHG Reduction over Luminaire Life (metric tonnes)	825	544



## CONCLUSION AND RECOMMENDATION

- We have implemented a designed solution of selected LED luminaires that conform to RP-8 guidelines for the majority of the applications.
- This combination of LED luminaires will result in energy consumption savings of 310,936 kWh per year over the incumbent HPS fixtures, which is equivalent to **67% energy savings**.
- If the Town of Gananoque chooses to move forward with the Design, Upgrade and Transfer option, the total project cost will be \$609,877 which includes 2% arm replacement 35% re-wiring and re-fusing of all fixtures. The Town should expect a payback period of 6.7 years with an IESO Incentive of \$63,669.

The next steps to start the implementation of this new technology and start seeing energy and maintenance savings are as follows:

1. Meeting to review IGA with staff and RealTerm Energy team
2. Approval of the IGA
3. Submit IESO rebate (prepared by RealTerm, but municipal staff must submit)
4. Review contract to proceed with project
5. Sign contract



## CALCULATION ASSUMPTIONS

1. The electricity cost savings were calculated based on Eastern Ontario Power’s current rates valid at the date of the preparation of this IGA. This information can be obtained online on the Ontario Energy Board website<sup>1</sup>. The annual energy savings and the new LED street lighting system were calculated based on the data collected by the GIS/GPS mapping. Any changes in the below data will have as an effect changes in the energy consumption savings and in the energy cost savings.

Type of Light	# of Lights	Total Demand Before (kW)	Total Demand After (kW)	Annual Operating Hours
Cobra Head	421	81.4	24.1	3,942
Decorative	220	36.9	15.3	3,942

2. In Ontario, all electricity rates reflect the wholesale electricity price in some way. In the street lighting rate the variations of the wholesale electricity prices are reflected by the Monthly Average Hourly Price and the Global Adjustment. The Monthly Average Hourly Price and the Global Adjustment are changing monthly. In our calculation for Monthly Average Hourly Price we used \$0.02173/kWh and for Global Adjustment we used \$0.07802/kWh. These prices are the average prices of the last 12 months. The current and the historic Monthly Average Hourly Prices and Global adjustment prices are available on the IESO website<sup>2</sup>.
3. In the calculation of the energy cost of the LED lighting system we assumed that there will be no savings on the distribution volumetric rate, because this will be a matter for negotiation between the municipality and its LDC. These is the reason why although the energy consumption savings will be 67%, the energy cost savings is listed as only 35%. We have adopted this very conservative approach to protect the interests of the municipality as it plans ahead.
4. We have assumed that the saveONenergy program continues to be in effect as promised, using the currently published system rates, and that there will be no unexpected delays on the part of our partners which would prevent us from meeting the deadline for the Town to receive this incentive. While we will do everything we can to meet the requirements of this program and to gain this incentive for the Town, RealTerm Energy cannot take responsibility for those aspects which are outside of its control.

5. HST was not included through our calculations.  
<sup>1</sup> Ontario Energy Board. Electricity Distribution Rate Applications. Retrieved October 2015, from <http://www.ontarioenergyboard.ca/OEB/Industry/Regulatory+Proceedings/Applications+Before+the+Board/Electricity+Distribution+Rates/2014+Electricity+Distribution+Rate+Applications>  
<sup>2</sup> Independent Electricity System Operator. Price Overview - Monthly Average Hourly Prices, By Year. Retrieved October 2015, from <http://www.ieso.ca/Pages/Power-Data/price.aspx>

## TERMS AND CONDITIONS

The total project cost involves the following scope of work:

1. Data collection including GIS/GPS mapping of the existing and proposed luminaires
2. Lighting design by street
3. Removing 421 existing HID cobra head luminaires and the supply and installation of 421 cobra head LED luminaires with photocell controllers as shown in the table on the page 14
4. Removing 220 existing HID decorative luminaires and the supply and installation of 220 decorative LED luminaires as shown in the table on the page 6 and as shown in the Site Specific Fixture Replacements Appendix
5. Rewiring of 35% of the luminaires
6. Fuse and fuse holder replacement for 100% of the luminaires
7. Arm replacement of 2% of the cobra head luminaires davit arms
8. ESA permits and inspection of work
9. Recycling of the removed HID luminaires
10. Project management
11. Commissioning
12. Changing the utility bills on your behalf
13. Applying on your behalf for the available incentives.

For the avoidance of doubt, the scope of work set forth herein shall constitute the sole and entire scope of work for the Project and supersedes all prior and contemporaneous understandings, agreements, representations and warranties, both written and oral, with respect to the Project. The Parties have not relied on any statement, representation, warranty or agreement of the other Party or of any other person on such Party's behalf, including any representations, warranties, or agreements arising from statute or otherwise in law, except for the representations, warranties, or agreements expressly contained in this Agreement. Without limitation of the foregoing, the parties acknowledge and agree that the following items are not included in the scope of work:

1. Any cost related to upgrading your existing infrastructure to ESA standards;
2. Any cost related with the replacement of the existing relays for group-controlled streetlights
3. Any fees related to the connections to the secondary bus line when near high tension lines, in the unlikely case that your LDC insists on charging a fee.
4. Any other fees which may be charged by a third party

## TERMS AND CONDITIONS

The foregoing excluded items and any other items not included within the scope of work may be provided by Realterm Energy for additional cost pursuant to a separate written agreement or amendment between the parties only. The above list of exclusions is not meant to be an exhaustive list and shall not operate in any way to limit the exclusions of this paragraph or imply any obligation or duty on the party of Realterm Energy to complete any work other than the specifically defined scope of work set forth herein.

This IGA is valid until November 28, 2015.

The total project cost is in Canadian dollars and does not include HST.

# SITE SPECIFIC FIXTURE REPLACEMENTS

## LED DESIGNS FOR COBRA HEAD LIGHTS

### Sample Fixture Locations



### Replacement Details\*

139	
RTE_ID	139
FixQty	1
FixType	Cobrahead - HPS
FixHeight	25
ArmLength	6
FixVoltage	100
WireLocation	Overhead
Setback	4
RdWidth	28
NbLanes	2
RdClass	Local
DecoWithPCell	
DecoColour	
USPoleID	
Problems	
Comments	
SurvDate	42013
Surveyor	LDC
Name	139
FolderPath	Gananoque Design\38W_XSPA01GD_USN
POINT_X	-76.173329
POINT_Y	44.329164
WithBallast	130
Design_ID	2
LEDDesigned	38W_XSPA01GD_USN
PowerLevel	
LEDWattage	38
DesignName	
Performance_Ratio	0.292108
MountRatio	1.04
Replacement	FROM 130W Cobrahead - HPS TO 38W_XSPA01GD_USN

HPS 100 W





LED 38 W

**\*Sample Data:** Please note that while this map displays some of the 38W LEDs, not all of them will necessarily have been 100W HPS originally. Other sizes of lights may also have been converted to 38W LEDs.



## LED DESIGNS FOR COBRA HEAD LIGHTS

### Sample Fixture Locations



### Replacement Details\*

RTE_ID	33
FixQty	1
FixType	Cobrahead - HPS
FixHeight	25
ArmLength	8
FixVoltage	150
WireLocation	Underground
Setback	10
RdWidth	19
NbLanes	2
RdClass	Local
DecoWithPCell	
DecoColour	
URFPoleID	
Problems	
Comments	
SunCable	42013
Surveyor	
LDC	
Name	33
FolderPath	Gananoque Design\43W_XSPA01GC_USN
POINT_X	-76.175622
POINT_Y	44.324735
WthBallast	190
Design_ID	3
LEDDesigned	43W_XSPA01GC_USN
PowerLevel	
LEDVoltage	43
DesignName	
Performance_Ratio	0.226316
MountRatio	0.84
Replacement	FROM 150W Cobrahead - HPS TO 43W_XSPA01GC_USN

HPS 150 W



LED 43 W



**\*Sample Data:** Please note that while this map displays some of the 43W LEDs, not all of them will necessarily have been 150W HPS originally. Other sizes of lights may also have been converted to 43W LEDs.

## LED DESIGNS FOR COBRA HEAD LIGHTS

### Sample Fixture Locations



### Replacement Details\*

RTI_ID	54
FixQty	1
FixType	Cobrahead - HPS
FixHeight	20
ArmLength	6
FixVoltage	150
WireLocation	Overhead
Setback	1
RdWidth	20
NbLanes	2
RdClass	Local
DecoWithPCell	
DecoColour	
URPoleID	
Problems	Transformer present
Comments	
SurfDate	42013
Surveyor	
LDC	
Name	54
FolderPath	Gananoque Design53W_XSPA01GA_USN
POINT_X	-76.165197
POINT_Y	44.325911
WtrBallast	190
Design_ID	5
LEDDesigned	53W_XSPA01GA_USN
PowerLevel	
LEDVoltage	53
DesignName	
Performance_Ratio	0.278947
MountRatio	0.75
Replacement	FROM 190W Cobrahead - HPS TO 53W_XSPA01GA_USN

HPS 150 W



LED 53 W

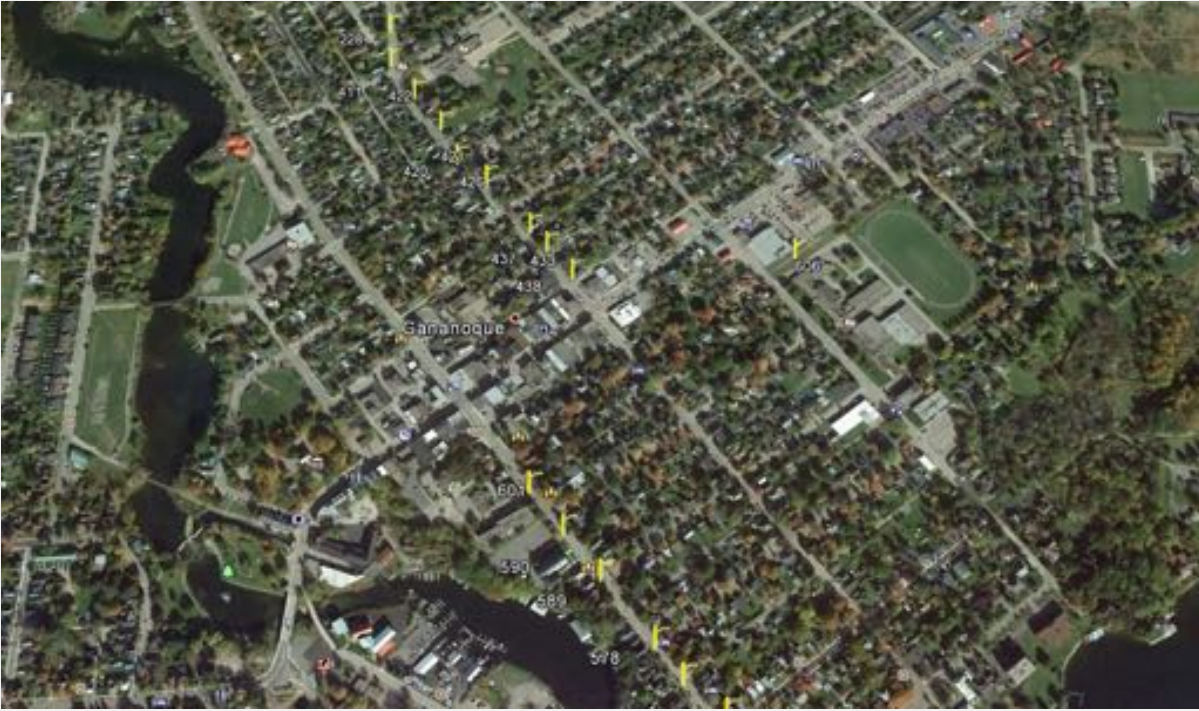


**\*Sample Data:** Please note that while this map displays some of the 53W LEDs, not all of them will necessarily have been 150W HPS originally. Other sizes of lights may also have been converted to 53W LEDs.



## LED DESIGNS FOR COBRA HEAD LIGHTS

### Sample Fixture Locations



### Replacement Details\*

RTE_ID	437
FlatCity	1
FlatType	Cobrahead - HPS
FlatHeight	26
ArmLength	6
FlatWattage	100
WireLocation	Overhead
Setback	3
RdWidth	28
NrLanes	2
RcClass	Collector
DecoWithPCell	
DecoColour	
USPoleID	
Problems	
Comments	Arm set at 45
SurvDate	42013
Surveyor	
LDC	
Name	437
FolderPath	Gananoque
DesignID	Design65W_XSPA02HE_USN
POINT_X	-76.161504
POINT_Y	44.331553
WithBalkast	130
Design_ID	23
LEDDesigned	65W_XSPA02HE_USN
PowerLevel	
LEDWattage	65
DesignName	
Performance_Ratio	0.5
MountRabs	0.89285714285
Replacement	FROM 130W Cobrahead - HPS TO 65W_XSPA02HE_USN

HPS 100 W



LED 65 W

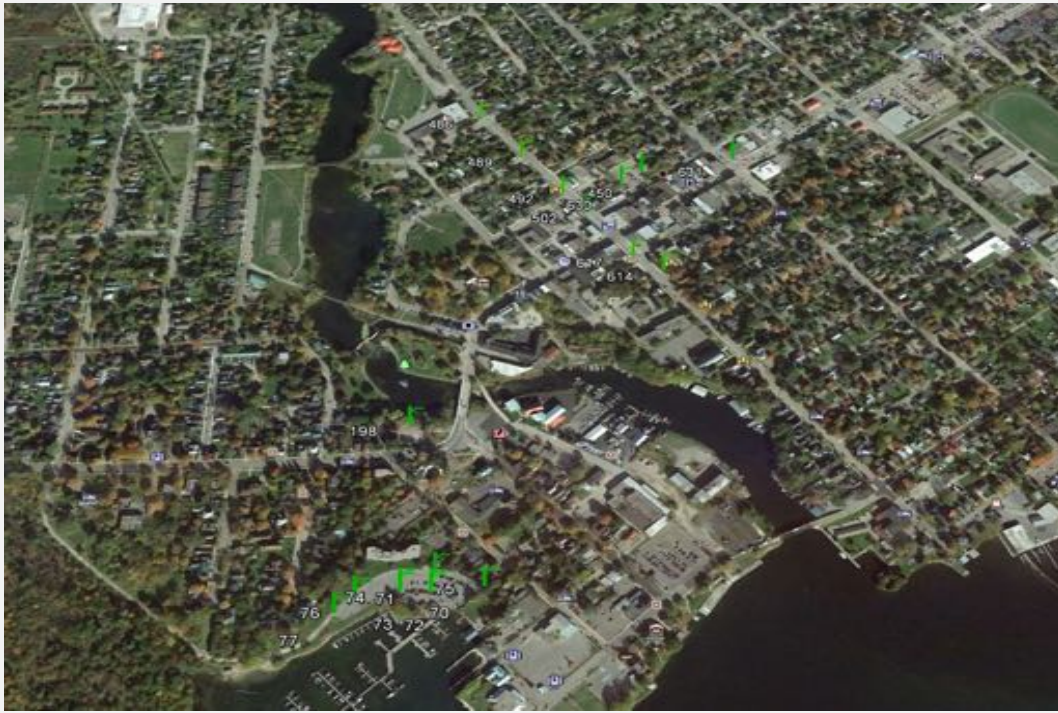


**\*Sample Data:** Please note that while this map displays some of the 65W LEDs, not all of them will necessarily have been 100W HPS originally. Other sizes of lights may also have been converted to 65W LEDs.



## LED DESIGNS FOR COBRA HEAD LIGHTS

### Sample Fixture Locations



### Replacement Details\*

<b>198</b>	
RTE_ID	198
FixtQty	1
FixtType	Cobrahead - HPS
FixtHeight	25
ArmLength	6
FixtWattage	150
WireLocation	Overhead
Setback	6
RdWidth	83
NbLanes	0
RdClass	Parking Lot
DecoWithPCell	
DecoColour	
UITPoleID	
Problems	
Comments	
SurvDate	42013
Surveyor	
LDC	
Name	198
FolderPath	Gananoque Design/73W_XSPA02HD_USN
POINT_X	-76.165273
POINT_Y	44.326653
WithBallast	190
Design_ID	24
LEDDesigned	73W_XSPA02HD_USN
PowerLevel	
LEDWattage	73
DesignName	
Performance_Ratio	0.384211
MountRatio	3.32
Replacement	FROM 190W Cobrahead - HPS TO 73W_XSPA02HD_USN

HPS 150 W



LED 73 W



**\*Sample Data:** Please note that while this map displays some of the 73W LEDs, not all of them will necessarily have been 150W HPS originally. Other sizes of lights may also have been converted to 73W LEDs.

## LED DESIGNS FOR COBRA HEAD LIGHTS

### Sample Fixture Locations



### Replacement Details\*

314	
RTE_ID	314
FixQty	1
FixType	Cobrahead - HPS
FixHeight	25
ArmLength	8
FixWattage	250
WireLocation	Overhead
Setback	11
RdWidth	32
NoLanes	2
RdClass	Arterial
DecoWithPCeil	
DecoColour	
UTFPoleID	
Problems	
Comments	
SunDate	42044
Surveyor	
LDC	
Name	314
FolderPath	Gananoque Design\101W_XSPA03HA_USN
POINT_X	-76.969321
POINT_Y	44.33729
WithBallast	310
Design_ID	33
LEDDesigned	101W_XSPA03HA_USN
PowerLevel	
LEDWattage	101
DesignName	
Performance_Ratio	0.325606
MountRatio	1.4
Replacement	FROM 310W Cobrahead - HPS TO 101W_XSPA03HA_USN

HPS 250 W



LED 101 W

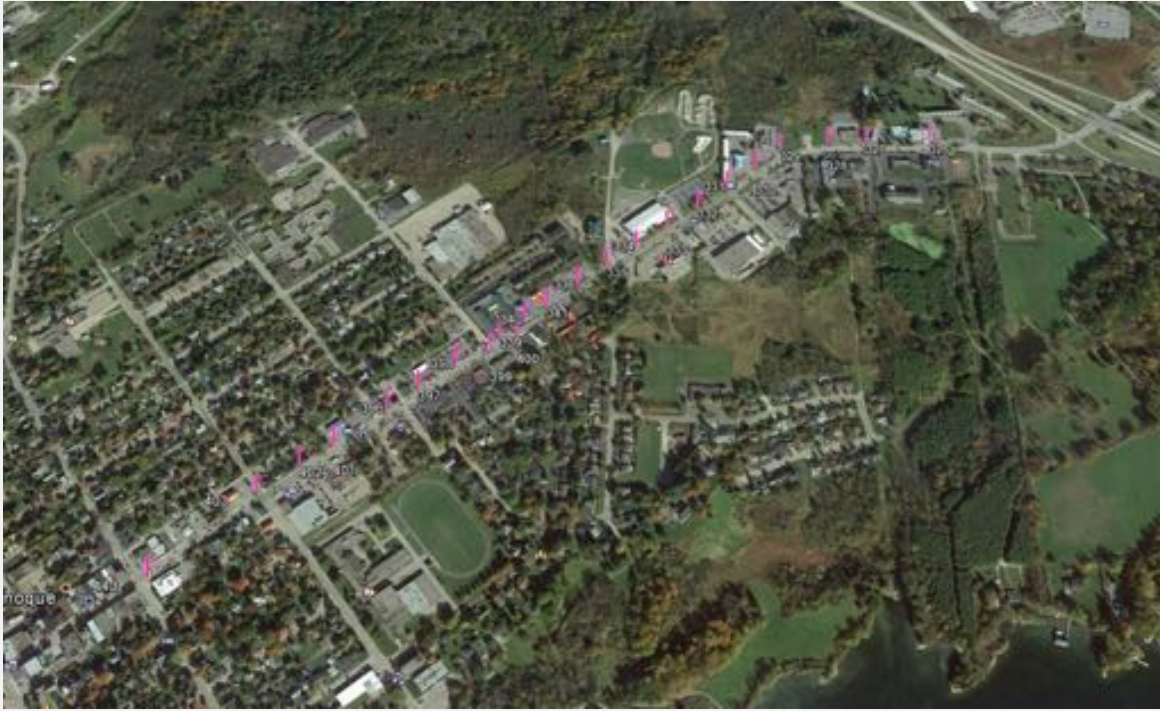


**\*Sample Data:** Please note that while this map displays some of the 101W LEDs, not all of them will necessarily have been 250W HPS originally. Other sizes of lights may also have been converted to 101W LEDs.



## LED DESIGNS FOR COBRA HEAD LIGHTS

### Sample Fixture Locations



### Replacement Details\*

341	
RTE_ID	341
FixQty	1
FixType	Cobrahead - HPS
FixHeight	30
ArmLength	8
FixWattage	150
WireLocation	Overhead
Setback	3
RdWidth	45
NBLanes	3
RdClass	Arterial
DecoWithPCell	
DecoColour	
UtilPoleID	
Problems	
Comments	
SunDate	42013
Surveyor	
LDC	
Name	341
FolderPath	Gananoque
Design	Design\168W_XSPA02HD_USN
POBt_X	-76.153995
POBt_Y	44.335163
WithBallast	190
Design_ID	53
LEDDesigned	168W_XSPA02HD_USN
PowerLevel	
LEDWattage	168
DesignName	
Performance_Ratio	0.884211
MountRatio	1.366666667
Replacement	FROM 150W Cobrahead - HPS TO 168W_XSPA02HD_USN

HPS 150 W



LED 168 W

**\*Sample Data:** Please note that while this map displays some of the 168W LEDs, not all of them will necessarily have been 150W HPS originally. Other sizes of lights may also have been converted to 168W LEDs.

## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

RTE_ID	643
FidCity	1
FidType	Deco - Post Top (Marina)
FidHeight	20
ArmLength	0
FidVoltage	150
WireLocation	Underground
Setback	
RdWidth	
NBLanes	
RdClass	Marina
DecoWithPCell	No
DecoColour	Black
USPoleID	
Problems	
Comments	
SurfDate	
Surveyor	
LDC	
Name	643
FolderPath	Gananoque Design\GRPCL 30LEDE53 MVOLT 4K R3 P7 PCLL NL
POINT_X	-76.164287
POINT_Y	44.324296
WithBallast	150
Design_ID	75
LEDDesigned	GRPCL 30LEDE53 MVOLT 4K R3 P7 PCLL NL
PowerLevel	0
LEDVoltage	70
DesignName	Sketch 1
Performance_Ratio	0.368421
MountRatio	0
Replacement	FROM 190W Deco - Post Top (Marina) TO GRPCL 30LEDE53 MVOLT 4K R3 P7 PCLL NL

#### Decorative – Post Top



#### GRPCL 30LEDE53





## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

304	
RTE_ID	304
FixCity	1
FixType	Decorative - Acorn Post Top (Type I)
FixHeight	20
ArmLength	
FixVoltage	150
WireLocation	Underground
Setback	0
RdWidth	15
NbLanes	0
RdClass	Park
DecoWithPCell	
DecoColour	
USPoleID	
Problems	
Comments	IMAGE 9. White pole. Bk top.
SurfDate	42044
Surveyor	
LDC	
Name	304
FolderPath	Gananoque Design/CA23T4-VS3AR-GAL-3-80W
POINT_X	-76.165795
POINT_Y	44.326976
WWhBallast	190
Design_ID	92
LEDDesigned	CA23T4-VS3AR-GAL-3-80W
PowerLevel	0
LEDWattage	80
DesignName	Sketch C
Performance_Ratio	0.421053
MounRatio	#VALUE!
Replacement	FROM 190W Decorative - Acorn Post Top (Type I) TO CA23T4-VS3AR-GAL-3-80W

Decorative –  
Acorn Post Top (Type I & II)



CA23T4-



## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

	10
RTE_ID	10
FixCity	1
FixType	Decorative - Acorn Post Top (Type III)
FixHeight	10
ArmLength	
FixWattage	150
WireLocation	Underground
Setback	1
RdWidth	34
Nblanes	2
RdClass	Arterial
DecoWithPCall	
DecoColour	Br
URPoleID	
Problems	
Comments	IMAGE 2
SunDate	42013
Surveyor	
LDC	
Name	10
FolderPath	Gananoque Design\CA23T4-VS3AR-GAL-3-80W-4K
POINT_X	-76.171983
POINT_Y	44.325713
WWBallast	190
Design_ID	90
LEDDesigned	CA23T4-VS3AR-GAL-3-80W-4K
PowerLevel	0
LEDWattage	80
DesignName	Sketch A
Performance_Ratio	0.421053
MoundRatio	#VALUE!
Replacement	FROM 190W Decorative - Acorn Post Top (Type III) TO CA23T4-VS3AR-GAL-3-80W-4K

Decorative –  
Acorn Post Top (Type III)



CA23T4-



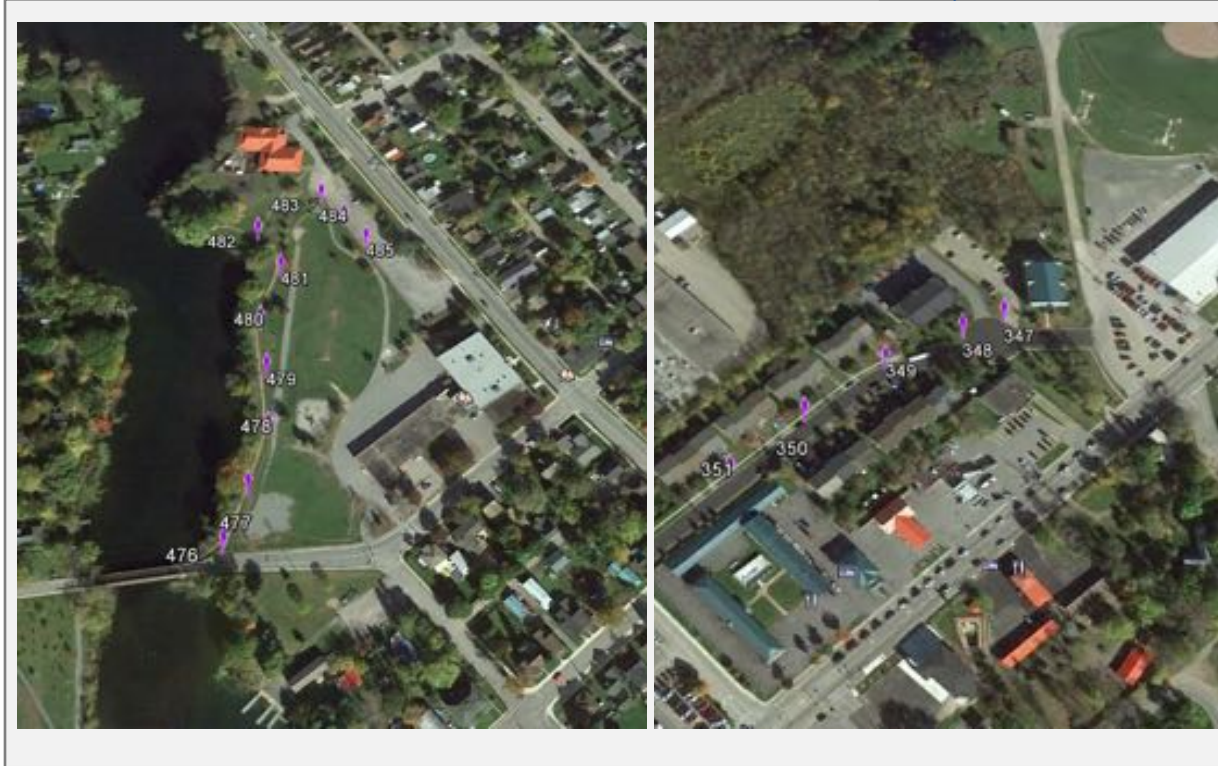
CA10T4-





## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

350	
RTE_ID	350
FixQty	1
FixType	Decorative - Acorn Post Top (Type IV)
FixHeight	26
ArmLength	
FixWattage	150
WireLocation	Underground
Setback	15
RdWidth	31
NbLanes	2
RdClass	Local
DecoWithPCell	No
DecoColour	White
USPoleID	
Problems	
Comments	Assuming Wattage / Type 2
SurvDate	42013
Surveyor	
LDC	
Name	350
FolderPath	Gananoque Design/CA10T4-LAPR-3-SKY-68W-4K
POINT_X	-76.154732
POINT_Y	44.335888
WithBallast	190
Design_ID	95
LEDDesigned	CA10T4-LAPR-3-SKY-68W-4K
PowerLevel	0
LEDWattage	68
DesignName	Sketch F
Performance_Ratio	0.357895
MountRatio	#VALUE!
Replacement	FROM 190W Decorative - Acorn Post Top (Type IV) TO CA10T4-LAPR-3-SKY-68W-4K

Decorative –  
Acorn Post Top (Type IV)



CA10T4



## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

451	
RTE_ID	451
FixQty	1
FixType	Decorative - Bell Downlighting
FixHeight	15
ArmLength	3
FixVoltage	100
WireLocation	Underground
Setback	0
RdWidth	0
NBLanes	0
RdClass	
DecoWithPCeil	No
DecoColour	Black
URPointID	
Problems	
Comments	
SurfDate	42013
Surveyor	
LDC	
Name	451
FolderPath	Gananoque Design/SY21P1-GAL-3-60W-4K
POINT_X	-78.162365
POINT_Y	44.330573
WithBallast	130
Design_ID	100
LEDDesigned	SY21P1-GAL-3-60W-4K
PowerLevel	0
LEDVoltage	60
DesignName	Sketch K
Performance_Ratio	0.461538
MoundRatio	-0.2
Replacement	FROM 130W Decorative - Bell Downlighting TO SY21P1-GAL-3-60W-4K

Decorative –  
Bell Downlighting



SY21P1





## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

<b>431</b>	
RTE_ID	431
FixQty	1
FixType	Decorative - Caged Acorn Post Top
FixHeight	24
ArmLength	
FixVoltage	150
WireLocation	Underground
Setback	8
RdWidth	24
NbLanes	2
RdClass	Local
DecoWithPCell	No
DecoColour	Black
UBSPoleID	
Problems	
Comments	
SunDate	42013
Surveyor	
LDC	
Name	431
FolderPath	Gananoque Design\CA23T4-VS3AR-GAL-3-60W-4K
POINT_X	-76.161935
POINT_Y	44.332265
WireBallast	190
Design_ID	91
LEDDesigned	CA23T4-VS3AR-GAL-3-60W-4K
PowerLevel	0
LEDWattage	60
DesignName	Sketch B
Performance_Ratio	0.315789
MounRatio	#!VALUE!
Replacement	FROM 190W Decorative - Caged Acorn Post Top TO CA23T4-VS3AR-GAL-3-60W-4K

Decorative –  
Caged Acorn Post Top



CA23T4-



## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

289	
RTE_ID	289
FixQty	1
FixType	Decorative - Cylindrical Post Top
FixHeight	15
ArmLength	
FixVoltage	150
WireLocation	Underground
Setback	4
RdWidth	12
NBLanes	0
RdClass	Park
DecoWithPCeil	
DecoColour	Bk
UBPoleID	
Problems	
Comments	IMAGE 4 (Type 2)
SurfDate	42044
Surveyor	
LDC	
Name	289
FolderPath	Gananoque Design\CLE17T4-GAL-3-80W-4K
POINT_X	-76.163311
POINT_Y	44.321944
WireBallast	190
Design_ID	101
LEDDesigned	CLE17T4-GAL-3-80W-4K
PowerLevel	0
LEDVoltage	80
DesignName	Sketch L
Performance_Ratio	0.421053
MounRatio	#VALUE!
Replacement	FROM 190W Decorative - Cylindrical Post Top TO CLE17T4-GAL-3-80W-4K

Decorative –  
Cylindrical Post Top



CLE17T4



## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



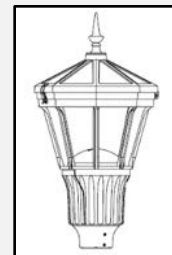
### Replacement Details

RTE_ID	274
FixQty	1
FixType	Decorative - Victorian Lantern Post Top (Type I)
FixHeight	15
ArmLength	
FixVoltage	100
WireLocation	Underground
Setback	2
RdWidth	15
NbLanes	0
RdClass	Park
DecorWithPCell	
DecorColour	Blk
USPoleID	
Problems	
Comments	IMAGE 7 (Type 1)
SunDate	42044
Surveyor	
LDC	
Name	274
FolderPath	Gananoque Design\AUL 070 5K AS B L3 S DM H PCS
POINT_X	-76.161159
POINT_Y	44.323775
WithBallast	130
Design_ID	78
LEDDesigned	AUL 070 5K AS B L3 S DM H PCS
PowerLevel	0
LEDVoltage	70
DesignName	Sketch G
Performance_Ratio	0.538462
MountRatio	#VALUE!
Replacement	FROM 130W Decorative - Victorian Lantern Post Top (Type I) TO AUL 070 5K AS B L3 S DM H PCS

Decorative –  
Victorian Lantern Post Top (Type I)



AUL 070 5K





## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



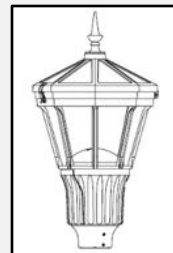
### Replacement Details

643	
RTE_ID	643
FixCity	1
FixType	Deco - Post Top (Marina)
FixHeight	20
ArmLength	0
FixVoltage	150
WireLocation	Underground
Setback	
RdWidth	
NBLanes	
RdClass	Marina
DecoWithPCell	No
DecoColour	Black
USPoleID	
Problems	
Comments	
SurfDate	
Surveyor	
LDC	
Name	643
FolderPath	Gananoque Design/GRPCL 30LEDE53
POINT_X	-76.164287
POINT_Y	44.324296
WithBallast	150
Design_ID	75
LEDDesigned	GRPCL 30LEDE53 MVOLT 4K R3 P7 PCLL NL
PowerLevel	0
LEDVoltage	70
DesignName	Sketch 1
Performance_Ratio	0.368421
MountRatio	0
Replacement	FROM 150W Deco - Post Top (Marina) TO GRPCL 30LEDE53 MVOLT 4K R3 P7 PCLL NL

Decorative –  
Victorian Lantern Post Top (Type II)



AUL 070 5K



## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

RTE_ID	284
FixtQty	1
FixtType	Decorative - Victorian Lantern Post Top (Type III)
FixtHeight	10
ArmLength	
FixtWattage	100
WireLocation	Underground
Setback	2
RdWidth	12
NbLanes	0
RdClass	Park
DecoWithPCell	
DecoColour	Bk
UtilPoleID	
Problems	
Comments	IMAGE 6, Beach
SurvDate	42044
Surveyor	
LDC	
Name	284
FolderPath	Gananoque Design/GRPCL 30LEDE53 MVOLT 4K R3 P7 PCLL NL
POINT_X	-76.163373
POINT_Y	44.322583
WithBallast	130
Design_ID	78
LEDDesigned	GRPCL 30LEDE53 MVOLT 4K R3 P7 PCLL NL
PowerLevel	0
LEDWattage	70
DesignName	Sketch 1
Performance_Ratio	0.538462
MountRatio	#VALUE!
Replacement	FROM 130W Decorative - Victorian Lantern Post Top (Type III) TO GRPCL 30LEDE53 MVOLT 4K R3 P7 PCLL NL

### Decorative – Victorian Lantern Post Top (Type III)



### GRPCL



## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

296	
RTE_ID	296
FixQty	1
FixType	Decorative - Villa Lantern with Top Hat
FixHeight	15
ArmLength	
FixWattage	100
WireLocation	Underground
Setback	8
RdWidth	12
NBLanes	0
RdClass	Park
DecoWithPCell	
DecoColour	Blk
UTIPoleID	
Problems	
Comments	IMAGE 5
SurfDate	42044
Surveyor	
LDC	
Name	296
FolderPath	Gananoque Design\245L 20LEDE10 MVOLT 4K R5 RNABK P7 PCLL NL
POINT_X	-76.163481
POINT_Y	44.323112
WtrBallast	130
Design_ID	79
LEDDesigned	245L 20LEDE10 MVOLT 4K R5 RNABK P7 PCLL NL
PowerLevel	0
LEDWattage	71
DesignName	Sketch J
Performance_Ratio	0.546154
MountRatio	#N/A!
Replacement	FROM 130W Decorative - Villa Lantern with Top Hat TO 245L 20LEDE10 MVOLT 4K R5 RNABK P7 PCLL NL

Decorative –  
Villa Lantern with Top Hat



245L 20LEDE10





## LED DESIGNS FOR DECORATIVE FIXTURES

### Sample Fixture Locations



### Replacement Details

638	
RTE_ID	638
FixQty	1
FixType	Floodlight
FixHeight	25
ArmLength	3
FixWattage	175
WireLocation	Underground
Setback	0
RdWidth	
NBLanes	3
RdClass	Arterial
DecoWithPCell	
DecoColour	
UsePoleID	
Problems	
Comments	Added by Customer
SurvDate	
Surveyor	
LDC	
Name	638
FolderPath	Gananoque Design\OSQ AAA 40D A 40K UL BZ DIM Q4
POINT_X	-76.145323
POINT_Y	44.33851
WithBallast	210
Design_ID	111
LEDDesigned	OSQ AAA 40D A 40K UL BZ DIM Q4
PowerLevel	0
LEDWattage	79
DesignName	
Performance_Ratio	0.37619
MountRatio	<0.12
Replacement	FROM 210W Floodlight TO OSQ A AA 40D A 40K UL BZ DIM Q4

### Floodlight



### OSQ A AA





## COBRA HEAD FIXTURES



## DECORATIVE FIXTURES

CA23T4-



SY21P1-



CLE17T4-



AUL 070-



CA10T4-



245L-



The appendix to this report contains the spec sheets of the above luminaires and photometric designs by type of street.



# APPENDIX A

- PRODUCT WARRANTY

**CANADIAN LIMITED WARRANTY FOR CREE® LED LIGHTING FIXTURES  
(INCLUDING BETALED® TECHNOLOGY; TRUEWHITE® TECHNOLOGY; AND ESSENTIA® FIXTURES)**

This limited warranty is provided by the Cree company described below ("Seller") to the original purchaser of the LED lighting product that is identified on Seller's invoice ("you") reflecting its original purchase (the "Product") in Canada. The Seller is the Cree company identified as such on the invoice. This limited warranty may be transferred to subsequent purchasers of the Product, provided that such Product is resold in new condition and in its original packaging. Seller warrants that the Product, when delivered in new condition and in its original packaging, will be free of defects in material and workmanship for a period of **TEN (10) YEARS** from the date of original purchase. The determination of whether the Product is defective shall be made by Seller in its sole discretion with consideration given to the overall performance of the Product. A Product shall not be considered defective solely as a result of the failure of individual LED components to emit light if the number of inoperable components is less than 10% of the total number of LED components in the Product.

If Seller determines the Product is defective, Seller will elect, in its sole discretion, to refund you the purchase price of the Product, repair the Product or replace the Product.

**Exclusions:**

1. This limited warranty will not apply to loss or damage to the Product caused by: negligence; abuse; misuse; mishandling; improper installation, storage or maintenance; damage due to fire or acts of God; vandalism; civil disturbances; power surges; improper power supply; electrical current fluctuations; corrosive environment installations; induced vibration; harmonic oscillation or resonance associated with movement of air currents around the Product; alteration; accident; failure to follow installation, operating, maintenance or environmental instructions prescribed by Seller or applicable electrical codes; or improper service of the Product performed by someone other than Seller or its authorized service provider.
2. This limited warranty excludes field labour and service charges related to the repair or replacement of the Product.
3. **THIS LIMITED WARRANTY IS VOID IF THE PRODUCT IS NOT USED FOR THE PURPOSE FOR WHICH IT IS DESIGNED.**
4. **THERE ARE NO REPRESENTATIONS, WARRANTIES OR CONDITIONS, WHETHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OR CONDITIONS AGAINST INFRINGEMENT OR OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR DURABILITY FOR A REASONABLE PERIOD OF TIME, OTHER THAN THOSE EXPRESSLY CONTAINED IN THIS LIMITED WARRANTY AND THOSE LEGAL WARRANTIES PROVIDED UNDER PROVINCIAL LAW WHICH CANNOT BE WAIVED.**
5. IN NO EVENT SHALL SELLER BE LIABLE FOR INCIDENTAL, COMPENSATORY, CONSEQUENTIAL, INDIRECT, SPECIAL OR OTHER DAMAGES. SELLER'S AGGREGATE LIABILITY WITH RESPECT TO A DEFECTIVE PRODUCT SHALL IN ANY EVENT BE LIMITED TO THE MONIES PAID TO SELLER FOR THAT DEFECTIVE PRODUCT. THE LIMITATIONS CONTAINED IN THIS SECTION APPLY REGARDLESS OF THE BASIS OF THE CLAIM OR THE FORM OF ACTION INCLUDING, WITHOUT LIMITATION, NEGLIGENCE OR OTHER TORT, OR BREACH OF CONTRACT.

Seller reserves the right to utilize new, reconditioned, refurbished, repaired or remanufactured products or parts in the warranty repair or replacement process. Such products and parts shall be comparable in function and performance to an original product or part, as determined by Seller in its sole discretion, and warranted as set out in this limited warranty for the remainder of the original warranty period.

In order to make a warranty claim, you must notify Seller in writing within sixty (60) days after your discovery of the defect, provide proof of purchase such as the invoice and comply with Seller's other warranty requirements as set out in this limited warranty. Upon receiving that notice, Seller may require you to promptly return the Product to Seller, or its authorized service provider, freight prepaid. Your warranty claim should be addressed to Cree Canada Corp., 3-6889 Rexwood Road, Mississauga, ON L4V 1R2.

This limited warranty only applies to specified LED fixtures set out above. Any warranties applicable to finish, poles, lamps, CR Series downlights, LR24™ troffers, certain BetaLED® Technology outdoor fixtures (specifically Class II as defined per IEC/EN60598), backup batteries, controls, occupancy sensors, photocells and other fixture accessories can be found at [www.cree.com/canada/warranty](http://www.cree.com/canada/warranty).

This limited warranty is effective for purchases of Product on or after the effective date set forth below. Seller reserves the right to modify this warranty from time to time. Any modification of this warranty shall be effective for all orders placed with Seller on or after the effective date of such revised warranty.

The parties acknowledge that they have required that this document be prepared in English. Les parties reconnaissent avoir exigé que les présents soient rédigés en anglais.

Effective Date: September 24, 2012



**STATEMENT OF LIMITED WARRANTY  
FOR ACUITY BRANDS LIGHTING, INC.  
LED COMMERCIAL OUTDOOR PRODUCTS  
FOR: REALTERM ENERGY  
QUOTE NO.: 968-14-17096-22  
8/12/2014**

Subject to the exclusions set forth below, Acuity Brands Lighting, Inc. ("Acuity") warrants its commercial outdoor light emitting diode (LED) fixtures, including the LED arrays and the LED drivers and integral control devices ("Product(s)"), to be free from defect in material and workmanship (the "General Warranty") for a period of ten (10) years from the date of shipment from Acuity's facilities. The LED arrays in the Product(s) will be considered defective in material or workmanship only if a total of 15% or more of the individual light emitting diodes in the Product(s) fail to illuminate, and the painted finish of the LED Luminaire(s) will be considered defective in material or workmanship only if there is substantial deterioration, in the form of blistering, cracking, or peeling (the "Painted Finish Warranty"). The painted finish is not warranted against fading or chalking, as LED Luminaire(s) may naturally fade or chalk over time due to normal aging.

Acuity Controls, PowerSentry®, stand alone Acuity Emergency Product(s) (e.g.: exit combo, emergency unit, emergency remote) and emergency batteries, lamps, and poles are excluded from the General Warranty. Acuity Controls, PowerSentry®, stand alone Acuity Emergency Products and emergency batteries, Acculamp® brand lamps, and poles are warranted separately; and the terms of such warranties are located at [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx). Manufacturers of lamps, emergency batteries and poles incorporated into the Product(s) are solely responsible for any costs or expenses related to any claims, repairs, or replacements associated with any such component(s). Assistance with warranty claims for any such component(s), and/or copies of each applicable manufacturer's warranty, may be obtained from an authorized Acuity post-sales or customer service representative.

This Statement of Limited Warranty ("Warranty") applies only when the Product(s) are installed in applications in which ambient temperatures are within the range of specified operating temperatures and are operated within the electrical values shown on the LED driver Label. Acuity will not be responsible under this Warranty for any failure of the Product(s) that results from external causes such as: acts of nature; physical damage; exposure to adverse or hazardous chemical or other substances; use of reactive cleaning agents and/or harsh chemicals to clean the Product(s); environmental conditions; vandalism; fire; power failure, improper power supply, power surges or dips, and/or excessive switching; induced vibration; animal or insect activity; fault or negligence of purchaser, any end user of the Product(s) and/or any third party not engaged by Acuity; improper or unauthorized use, installation, handling, storage, alteration, maintenance or service, including failure to abide by any product classifications or certifications, or failure to comply with any applicable standards, codes, recommendations, product specification sheets, or instructions of Acuity; use of the Product(s) with products, processes or materials supplied by any end user or third party; or any other occurrences beyond Acuity's reasonable control. Acuity also will not be responsible under this Warranty for any substantial deterioration in the Product finish that is caused by failure to clean, inspect or maintain the finish of the Product(s). If the Product(s) are used on existing foundations, anchorages or structures, the end user is solely responsible for the structural integrity of such existing foundations, anchorages or structures and all consequences arising from their use. Adequate records of operating history, maintenance, and/or testing must be kept by the end user and provided to Acuity upon request to substantiate that the Product(s) have failed to comply with the terms of this Warranty. Neither polycarbonate nor acrylic material used in the Products is warranted against yellowing, as yellowing may naturally occur over time due to normal aging. The Product(s) are not warranted against costs that may be incurred in connection with changes or modifications to the Product(s) required to accommodate site conditions and/or faulty building construction or design. In addition, the Product(s) are not warranted against cost resulting from installation of a third party component, failures of third party supplied components, or failures of Acuity supplied Product(s) caused by a third party supplied component. Acuity supplied Product(s) are not to be used in excess of an average of 12 hours per day; usage in excess of these operational parameters will void this Warranty.

If Acuity determines, at its sole discretion, the Product(s) fail to comply with the terms of this Warranty, Acuity, at its option, will repair or replace the Product(s) with the same or a functionally equivalent Product(s) or component part(s). This Warranty excludes labor and equipment required to remove and/or reinstall original or replacement parts. This Warranty extends only to the Product(s) as delivered to, and is for the sole and exclusive benefit of, the original end user of the Product(s) at the original location. This Warranty may not be transferred or assigned by the original end user. The repair or replacement of any Product(s) or component part within the Product(s) is the sole and exclusive remedy for failure of the Product(s) to comply with the terms of this Warranty and does not extend the Warranty period. Warranty claims regarding the Product(s) must be submitted in writing within (30) days of discovery of the defect or failure to an authorized Acuity post-sales or customer service representative. Product(s) or component part(s) may be required to be returned for inspection and verification of non-conformance by Acuity, but no Product(s) or component part(s) will be accepted for inspection, verification or return unless accompanied by a "return authorization number" which can be obtained only from an authorized Acuity post-sales or customer service representative. Acuity is not responsible for any costs and expenses incurred in connection with shipment of Product(s) to Acuity, but Acuity shall bear all cost and expense incurred in connection with shipment of replacement Product(s) to the customer.

**THE FOREGOING WARRANTY TERMS ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, AND ACUITY EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, RELATING DIRECTLY OR INDIRECTLY TO THE PRODUCT(S), WHETHER ORAL, WRITTEN, OR ARISING BY COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO AGENT, DISTRIBUTOR OR OTHER SUPPLIER OF ACUITY PRODUCTS HAS THE AUTHORITY TO MODIFY OR AMEND THIS WARRANTY WITHOUT EXPRESS WRITTEN AUTHORIZATION FROM ACUITY.**

The total liability of Acuity on any and all claims of any kind, whether in contract, warranty, tort (including negligence), strict liability or otherwise, arising out of or in connection with, or resulting from, Acuity's performance or breach of this Warranty, or from Acuity's sale, delivery, resale, repair, or replacement of any Product(s) or the furnishing of any services, shall in no event exceed the purchase price allocable to the Product(s) that give rise to the claim, and any and all such liability shall terminate upon the expiration of the warranty period specified above.



**STATEMENT OF LIMITED WARRANTY  
FOR ACUITY BRANDS LIGHTING, INC.  
LED COMMERCIAL OUTDOOR PRODUCTS  
FOR: REALTERM ENERGY  
QUOTE NO.: 968-14-17096-22  
6/12/2014**

IN NO EVENT SHALL ACUITY BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR PUNITIVE DAMAGES, EVEN IF INFORMED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER AS THE RESULT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR ANY OTHER THEORY, INCLUDING WITHOUT LIMITATION LABOR OR EQUIPMENT REQUIRED TO REMOVE AND/OR REINSTALL ORIGINAL OR REPLACEMENT PARTS, LOSS OF TIME, PROFITS OR REVENUES, LACK OR LOSS OF PRODUCTIVITY, INTEREST CHARGES OR COST OF CAPITAL, COST OF SUBSTITUTE EQUIPMENT, SYSTEMS, SERVICES OR DOWNTIME COSTS, DAMAGE TO OR LOSS OF USE OF PROPERTY OR EQUIPMENT OR ANY INCONVENIENCE ARISING OUT OF ANY BREACH OF THE FOREGOING WARRANTY OR OBLIGATIONS UNDER SUCH WARRANTY.

Acuity reserves the right to modify or discontinue this Warranty without notice provided that any such modification or discontinuance will only be effective with respect to any Product(s) purchased after such modification or discontinuance.





### **10 Year Extended Warranty**

Order # \_\_\_\_\_ Project name: \_\_\_\_\_

This limited warranty is provided by Cyclone Lighting ("the seller") to the original purchaser of an LED Cyclone Lighting fixture. Seller warrants that the driver and the LED array ("The LED Engine") of the lighting fixture, when delivered in new condition and in its original packaging, will be free of defects for a period of **TEN (10) YEARS** from the date of original purchase. The determination of whether the LED Engine is defective shall be made by Seller in its sole discretion. A Product shall not be considered defective solely as a result of the failure of individual LED components to emit light if the number of inoperable components is less than 10% of the total number of LED components in the Product.

If Seller determines the LED Engine is defective, Seller will elect, in its sole discretion, to repair or replace the components. Replacements will be furnished in exchange for defective components (Driver or LED arrays). Seller reserves the right to utilize new, reconditioned, refurbished, repaired or remanufactured products or parts in the warranty repair or replacement process. Such products and parts will be comparable in function and performance to an original product or part, as determined by Seller in its sole discretion, and warranted for the remainder of the original warranty period. Replacing such defective components will constitute fulfillment of Cyclone Lighting's obligation and liabilities.

This limited warranty will not apply in case of negligence, abuse, misuse, mishandling, fire, acts of God, vandalism, civil disturbances, power surges, improper power supply, electrical current fluctuations, corrosive environment, induced vibration, improper installation, storage or maintenance

This limited warranty excludes field labor and service charges related to the repair or replacement of the Product. **THIS LIMITED WARRANTY IS VOID IF THE PRODUCT IS NOT USED FOR THE PURPOSE FOR WHICH IT IS DESIGNED.**

In order to make a warranty claim, you must notify Seller in writing within sixty (60) days after your discovery of the defect. Upon receiving that notice, Seller will coordinate with you the proper way to handle your claim. Your warranty claim should be addressed to Cyclone Lighting, Inc., 2175 des Entreprises, Terrebonne, Qc. J6Y 2W9

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**IN NO EVENT SHALL SELLER BE LIABLE FOR INCIDENTAL, COMPENSATORY, CONSEQUENTIAL, INDIRECT, SPECIAL OR OTHER DAMAGES. SELLER'S AGGREGATE LIABILITY WITH RESPECT TO A DEFECTIVE PRODUCT SHALL IN ANY EVENT BE LIMITED TO THE MONIES PAID TO SELLER FOR THAT DEFECTIVE PRODUCT.**

This warranty is effective for purchases of Product on or after the effective date set forth below. Seller reserves the right to modify this warranty from time to time. Any modification of this warranty shall be effective for all orders placed with Seller on or after the effective date of such revised warranty.

Warranty rev.1 November 1<sup>st</sup> 2014

# APPENDIX B

- LIGHTING DESIGNS LAYOUT



We are sending the details of the proposed CREE luminaires in a separate file, as well as copies of the lighting design layouts performed for various applications in the Town. They will be sent electronically.

# APPENDIX C

- SPEC SHEETS

## Field Adjustable Output

For use with XSP1™, XSP2™, XSP2L™, LEDway® High Output and OSQ™ LED Street and Area Luminaires

### Description:

The Field Adjustable Output option enables the XSP Series, LEDway® High Output and OSQ™ street and area luminaires to be tuned to the exact needs of a particular application. With multiple levels of adjustment, the XSP Series, LEDway® High Output and OSQ Series luminaires offer maximum flexibility to best meet a variety of applications using a single luminaire. When N or U options are ordered (XSP Series, LEDway® High Output), the luminaires will have the field adjustable option as well as a wattage label that indicates the maximum available wattage of the luminaire.

### XSP1™ Street/Area Luminaires

Input Power Designator	System Watts		Lumen Multipliers		Optics Qualified on the DesignLights Consortium Qualified Products List	
	120-277V	347-480V	Types II, II Short, II Long and III Including BLS	Types V and V Short	4000K	5700K
A	53	59	1.00	1.00	2, G, 3, H	2, G, 3, H
B	48	54	0.91	0.92	2, G, 3, H	2, G, 3, H
C	43	50	0.86	0.85	2, G, 3, H	2, G, 3, H
D	38	46	0.77	0.78	2, G, 3, H	2, G, 3, H
E	34	41	0.70	0.70	2, G, 3, H	2, G, 3, H
F	29	36	0.61	0.59	2, G, 3, H	2, G, 3, H
G	27	34	0.52	0.49	N/A	N/A
H	19	26	0.40	0.37	N/A	N/A
I	15	21	0.29	0.27	N/A	N/A

### XSP2™ Street/Area Luminaires

Input Power Designator	System Watts		Lumen Multipliers		Optics Qualified on the DesignLights Consortium Qualified Products List	
	120-277V	347-480V	Types II, II Short, II Long and III Including BLS	Types V and V Short	4000K	5700K
A	101	106	1.00	1.00	2, G, 3, H	2, G, 3, H
B	91	99	0.91	0.95	2, G, 3, H	2, G, 3, H
C	83	90	0.86	0.88	2, G, 3, H	2, G, 3, H
D	73	79	0.77	0.80	2, G, 3, H	2, G, 3, H
E	65	71	0.70	0.73	2, G, 3, H	2, G, 3, H
F	56	62	0.61	0.63	2, G, 3, H	2, G, 3, H
G	53	59	0.52	0.52	N/A	N/A
H	37	43	0.40	0.40	N/A	N/A
I	29	34	0.29	0.29	N/A	N/A

### XSP2L™ Street/Area Luminaires

Input Power Designator	System Watts		Lumen Multipliers		Optics Qualified on the DesignLights Consortium Qualified Products List	
	120-277V	347-480V	Types II, II Short, II Long and III Including BLS	Types V and V Short	4000K	5700K
L*	168	N/A	1.00	N/A	2, 3	2, G, 3, H
M	153	N/A	0.91	1.00	2, 3	2, G, 3, H
N	134	N/A	0.85	0.91	2, G, 3, H	2, G, 3, H
O	112	N/A	0.75	0.81	2, G, 3, H	2, G, 3, H
P	94	N/A	0.64	0.70	N/A	N/A
Q	76	N/A	0.51	0.57	N/A	N/A
R	56	N/A	0.37	0.42	N/A	N/A

\* Input power designator L not available on XSP Series Area Luminaires



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Rev. Date: 05/22/2014

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T (800) 473-1234 F (800) 890-7507



For use with XSP1™, XSP2™, XSP2L™, LEDway® High Output and OSQ™ LED Street and Area Luminaires

### LEDway® High Output Luminaires – Single Module

Input Power Designator	System Watts		Lumen Multipliers Types II Medium and III Medium	Optics Qualified on the DesignLights Consortium Qualified Products List	
	120-277V	347-480V		4000K	5700K
A	136	140	1.00	2ME, 3ME	2ME, 3ME
B	130	133	0.97	2ME, 3ME	2ME, 3ME
C	123	126	0.94	2ME, 3ME	2ME, 3ME
D	117	119	0.91	2ME, 3ME	2ME, 3ME
E	107	109	0.86	2ME, 3ME	2ME, 3ME
F	97	99	0.81	2ME, 3ME	2ME, 3ME
G	87	89	0.76	2ME, 3ME	2ME, 3ME
H	78	79	0.67	2ME, 3ME	2ME, 3ME
I	68	69	0.61	2ME, 3ME	2ME, 3ME

### LEDway® High Output Luminaires – Double Module

Input Power Designator	System Watts		Lumen Multipliers Types II Medium and III Medium	Optics Qualified on the DesignLights Consortium Qualified Products List	
	120-277V	347-480V		4000K	5700K
A	274	279	1.00	2ME, 3ME	2ME, 3ME
B	265	265	0.97	2ME, 3ME	2ME, 3ME
C	252	251	0.94	2ME, 3ME	2ME, 3ME
D	238	237	0.91	2ME, 3ME	2ME, 3ME
E	214	217	0.86	2ME, 3ME	2ME, 3ME
F	198	198	0.81	2ME, 3ME	2ME, 3ME
G	172	177	0.76	2ME, 3ME	2ME, 3ME
H	153	157	0.67	2ME, 3ME	2ME, 3ME
I	136	137	0.61	2ME, 3ME	2ME, 3ME



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T (800) 473-1234 F (800) 890-7507



For use with XSP1™, XSP2™, XSP2L™, LEDway® High Output and OSQ™ LED Street and Area Luminaires

### OSQ™ LED Area Luminaires – Input Power Designators A & J

Q Option Setting	System Watts 120-480V		Lumen Multipliers	Optics Qualified on the DesignLights Consortium Qualified Products List		
	Input Power Designator A	Input Power Designator J		3000K	4000K	5700K
Q9 (Standard)	112	168	1.00	N/A	N/A	N/A
Q8	107	160	0.98	N/A	N/A	N/A
Q7	101	152	0.94	N/A	N/A	N/A
Q6	96	143	0.91	N/A	N/A	N/A
Q5	87	131	0.85	N/A	N/A	N/A
Q4	79	120	0.80	N/A	N/A	N/A
Q3	71	108	0.73	N/A	N/A	N/A
Q2	64	96	0.68	N/A	N/A	N/A
Q1	56	84	0.61	N/A	N/A	N/A

### OSQ™ LED Area Luminaires – Input Power Designator S

Q Option Setting	System Watts 120-277V	Lumen Multipliers	Optics Qualified on the DesignLights Consortium Qualified Products List		
	Input Power Designator S		3000K	4000K	5700K
Q9 (Standard)	223	1.00	N/A	N/A	N/A
Q8	213	0.98	N/A	N/A	N/A
Q7	202	0.94	N/A	N/A	N/A
Q6	191	0.91	N/A	N/A	N/A
Q5	175	0.85	N/A	N/A	N/A
Q4	160	0.80	N/A	N/A	N/A
Q3	144	0.73	N/A	N/A	N/A
Q2	128	0.68	N/A	N/A	N/A
Q1	112	0.61	N/A	N/A	N/A

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# XSP1™ — XSPA02/G

Cree® LED Street/Area Light - Single Module - Horizontal Tenon Mount - Type II and Type II w/Backlight Control

## Product Description

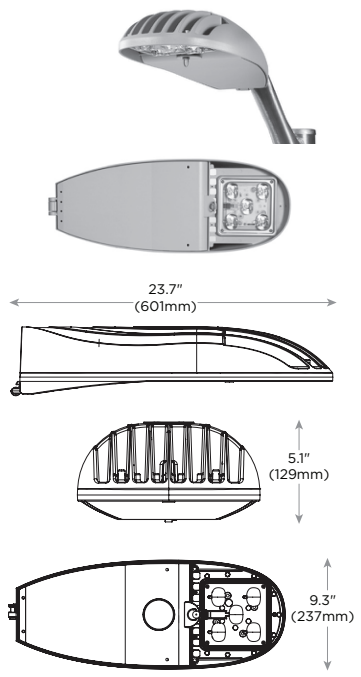
Designed from the ground up as totally optimized LED street and area lighting system, the XSP Series delivers incredible efficiency without sacrificing application performance. Beyond substantial energy savings and reduced maintenance, Cree achieves better optical control with our NanoOptic® Precision Delivery Grid™ optic than a traditional cobra head luminaire. The Cree® XSP Series LED luminaires are the better alternative for traditional street and area lighting with better payback and better performance.

## Performance Summary

- Utilizes BetaLED® Technology
- NanoOptic® Precision Delivery Grid™ optic
- Made in the U.S.A. of U.S. and imported parts
- CRI: Minimum 70 CRI
- CCT: 4000K (+/- 300K), 5700K (+/- 500K)
- Limited Warranty\*: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

## Accessories

Field Installed Accessories	
<b>XA-SP1BLS</b> Backlight Control Shield - Provides 1/2 Mounting Height Cutoff <b>XA-SP1BRDSPK</b> Bird Spikes	<b>XA-XSP4PTMNT</b> Four Point Mounting Kit - Includes Large Bracket for mounting to 2" (51mm) IP, 2.375" (60mm) O.D., Small Bracket for mounting to 1.25" (32mm) IP, 1.66" (42mm) O.D. tenon, and mounting bolts
Tenons (must specify color)	
<b>Square Internal Mount Tenons</b> - Mounts to 4" (102mm) square aluminum or steel poles PD-1H4 - Single      PD-2H4(180) - 180° Twin PD-2H4(90) - 90° Twin      PD-3H4(90) - 90° Triple PD-4H4(90) - 90° Quad	<b>Round External Mount Tenons</b> - Mounts to 2-3/8 - 3" (60 - 76mm) round aluminum or steel poles or tenons PT-1H - Single                      PT-3H(90) - 90° Triple PT-2H(90) - 90° Twin              PT-4H(90) - 90° Quad PT-2H(180) - 180° Twin
<b>Wall Mount Tenon</b> WM-2L	<b>Direct Arm Pole Adaptor Bracket</b> - Mounts to 3 - 6" (76 - 152mm) round or square aluminum or steel poles XA-TMDA8



## Ordering Information

Example: XSPA02GA-US

XSP	A	O			A	-			
Product	Version	Mounting	Optic	Modules	Input Power Designator	-	Voltage	Color Options	Options
XSP	A	O Horizontal Tenon	Z Type II G Type II w/BLS	G 4000K N 5700K	A 53W	-	U Universal 120-277V V 347-480V*	S Silver T Black Z Bronze B Platinum Bronze W White	<b>F Fuse</b> - When code dictates fusing, use time delay fuse - Not available with V voltage <b>G Small Four Point Mounting</b> - Mounts to 1.25" (32mm) IP, 1.66" (42mm) O.D. horizontal tenon <b>J Large Four Point Mounting</b> - Mounts to 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon <b>K Occupancy Control</b> - Refer to Occupancy Control spec sheet for details <b>N Utility Label and NEMA Photocell Receptacle</b> - Includes Q option - Refer to Field Adjustable Output spec sheet for details <b>Q Field Adjustable Output</b> - Refer to Field Adjustable Output spec sheet for details <b>R NEMA Photocell Receptacle</b> - Photocell by others <b>U Utility</b> - Label per ANSI C136.15 - Includes exterior wattage label that indicates the maximum available wattage of the luminaire - Includes Q option - Refer to Field Adjustable Output spec sheet for details

\* See www.cree.com/canada/warranty for warranty terms  
 \* 347-480V utilizes magnetic step-down transformer. For input power for 347-480V, refer to the Lumen Output, Electrical, and Lumen Maintenance data table



Rev. Date: 03/03/14



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**XSPI™ — XSPA02/G**  
LED Street/Area Light

**Product Specifications**

**CONSTRUCTION & MATERIALS**

- Die cast aluminum housing
- Tool-less entry
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5° to allow for fixture leveling (includes two axis T-level to aid in leveling)
- Luminaire secured with two mounting bolts standard; optional four point mounting available
- Designed with 0-10V dimming capabilities. Controls by others
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, black, bronze, platinum bronze and white are available

**ELECTRICAL SYSTEM**

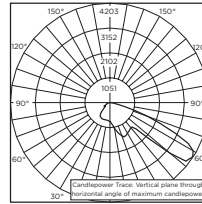
- **Input Voltage:** 120-277V or 347-480V, 50/60Hz
- Class 2 output
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used
- Compatible with control systems; consult factory for details

**REGULATORY & VOLUNTARY QUALIFICATIONS**

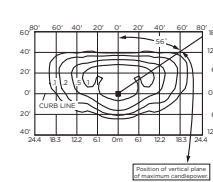
- cULus Listed
- Suitable for wet locations
- Product qualified on the DesignLights Consortium ("DLC") Qualified Products List ("QPL") when ordered with 2, G, 3 or H optics. Exceptions apply when N, U, or Q options are ordered - see Field Adjustable Output spec sheet for details
- Certified to ANSI C136.31-2001, 3G grid and overpass vibration standards
- Meets CALTrans 611 Vibration testing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- Dark Sky Friendly, IDA Approved when ordered with the Type II and Type III optics

**Photometry**

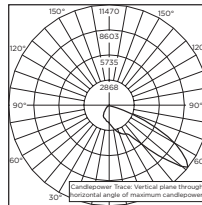
All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory.



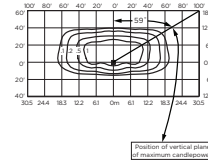
ITL Test Report #: 76664  
BXSPA'2GA-U  
Initial Delivered Lumens: 4,891



BXSPA'2GA-U  
Mounting Height: 25' (7.6m)  
Initial Delivered Lumens: 4,806  
Initial FC at grade



ITL Test Report #: 76042  
BXSPA'GHL-U  
Initial Delivered Lumens: 11,092



BXSPA'GGA-U  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 4,209  
Initial FC at grade

**EPA and Weight**

Weight 120-277V	Weight 347-480V	EPA				
		1@90°	2@90°	2@180°	3@90°	4@90°
18.0 lbs (8kg)	22.0 lbs (9kg)	0.71	1.02	1.43	1.74	2.04

**Lumen Output, Electrical, and Lumen Maintenance Data**

XSPI™ Street/Area Lights													
Input Power Designator	4000K		5700K		System Watts 120-277V	System Watts 347-480V	Total Current					50K Hours Projected Lumen Maintenance Factor @ 15° C (59° F)***	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11			120V	208V	240V	277V	347V		480V
<b>Type II Distribution</b>													
A	4,806	BI UO GI	5,340	BI UO GI	53	59	0.44	0.25	0.22	0.20	0.17	0.15	99%
<b>Type II Distribution w/BLS</b>													
A	4,209	BI UO GI	4,674	BI UO GI	53	59	0.44	0.25	0.22	0.20	0.17	0.15	99%

\*Actual production yield may vary between -4 and +10% of initial delivered lumens  
 \*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf)  
 \*\*\* For recommended lumen maintenance factor data see TD-13. Projected L<sub>m</sub> based on 11,088 hours LM-80-08 testing; > 150,000 hours

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# XSP2™ — XSPA02/G

Cree® LED Street/Area Light – Double Module – Horizontal Tenon Mount – Type II and Type II w/Backlight Control

## Product Description

Designed from the ground up as totally optimized LED street and area lighting system, the XSP Series delivers incredible efficiency without sacrificing application performance. Beyond substantial energy savings and reduced maintenance, Cree achieves better optical control with our NanoOptic® Precision Delivery Grid™ optic than a traditional cobra head luminaire. The Cree® XSP Series LED luminaires are the better alternative for traditional street and area lighting with better payback and better performance.

## Performance Summary

Utilizes BetaLED® Technology

NanoOptic® Precision Delivery Grid™ optic

Made in the U.S.A. of U.S. and imported parts

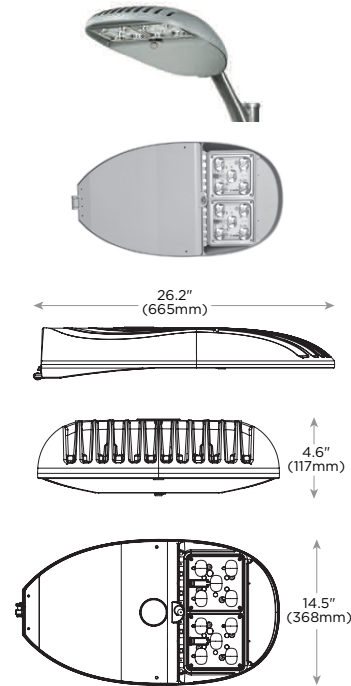
CRI: Minimum 70 CRI

CCT: 4000K (+/- 300K), 5700K (+/- 500K)

Limited Warranty\*: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

## Accessories

Field Installed Accessories	
<b>XA-SP2BLS</b> Backlight Control Shield - Provides 1/2 Mounting Height Cutoff <b>XA-SP2RDSPK</b> Bird Spikes	<b>XA-XSP4PTMNT</b> Four Point Mounting Kit - Includes Large Bracket for mounting to 2" (51mm) IP, 2.375" (60mm) O.D., Small Bracket for mounting to 1.25" (32mm) IP, 1.66" (42mm) O.D. tenon, and mounting bolts
Tenons (must specify color)	
<b>Square Internal Mount Tenons</b> - Mounts to 4" (102mm) square aluminum or steel poles PD-1H4 – Single      PD-2H4(180) – 180° Twin PD-2H4(90) – 90° Twin      PD-3H4(90) – 90° Triple PD-4H4(90) – 90° Quad	<b>Round External Mount Tenons</b> - Mounts to 2-3/8" – 3" (60 – 76mm) round aluminum or steel poles or tenons PT-1H – Single                      PT-3H(90) – 90° Triple PT-2H(90) – 90° Twin              PT-4H(90) – 90° Quad PT-2H(180) – 180° Twin
<b>Wall Mount Tenon</b> WM-2L	<b>Direct Arm Pole Adaptor Bracket</b> - Mounts to 3 – 6" (76 – 152mm) round or square aluminum or steel poles XA-TMDA8



## Ordering Information

Example: XSPA02HA-US

XSP	A	O			A	-			
Product	Version	Mounting	Optic	Modules	Input Power Designator	-	Voltage	Color Options	Options
XSP	A	O Horizontal Tenon	Z Type II G Type II w/BLS	H 4000K P 5700K	A 101W	-	U Universal 120-277V V 347-480V*	S Silver T Black Z Bronze B Platinum Bronze W White	<b>F Fuse</b> - When code dictates fusing, use time delay fuse - Not available with V voltage <b>G Small Four Point Mounting</b> - Mounts to 1.25" (32mm) IP, 1.66" (42mm) O.D. horizontal tenon <b>J Large Four Point Mounting</b> - Mounts to 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon <b>K Occupancy Control</b> - Refer to Occupancy Control spec sheet for details <b>N Utility Label and NEMA Photocell Receptacle</b> - Includes Q option - Refer to Field Adjustable Output spec sheet for details <b>Q Field Adjustable Output</b> - Refer to Field Adjustable Output spec sheet for details <b>R NEMA Photocell Receptacle</b> - Photocell by others <b>U Utility</b> - Label per ANSI C136.15 - Includes exterior wattage label that indicates the maximum available wattage of the luminaire - Includes Q option - Refer to Field Adjustable Output spec sheet for details

\* See www.cree.com/canada/warranty for warranty terms

\* 347-480V utilizes magnetic step-down transformer. For input power for 347-480V, refer to the Lumen Output, Electrical, and Lumen Maintenance data table



Rev. Date: 03/03/14



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**XSP2™ — XSPA02/G**  
LED Street/Area Light

**Product Specifications**

**CONSTRUCTION & MATERIALS**

- Die cast aluminum housing
- Tool-less entry
- Mounts on 1.25" (32mm) IP, 1.66" (42mm) O.D. or 2" (51mm) IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5° to allow for fixture leveling (includes two axis T-level to aid in leveling)
- Luminaire secured with two mounting bolts standard; optional four point mounting available
- Designed with 0-10V dimming capabilities. Controls by others
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, black, bronze, platinum bronze and white are available

**ELECTRICAL SYSTEM**

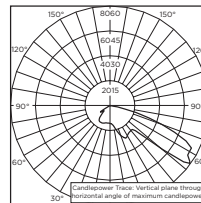
- **Input Voltage:** 120-277V or 347-480V, 50/60Hz
- Class 2 output
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used
- Compatible with control systems; consult factory for details

**REGULATORY & VOLUNTARY QUALIFICATIONS**

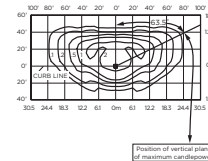
- cULus Listed
- Suitable for wet locations
- Product qualified on the DesignLights Consortium ("DLC") Qualified Products List ("QPL") when ordered with 2, G, 3 or H optics. Exceptions apply when N, U, or Q options are ordered - see Field Adjustable Output spec sheet for details
- Certified to ANSI C136.31-2001, 3G grid and overpass vibration standards
- Meets CALTrans 611 Vibration testing
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- Dark Sky Friendly, IDA Approved when ordered with the Type II and Type III optics

**Photometry**

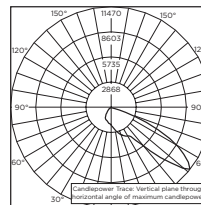
All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory.



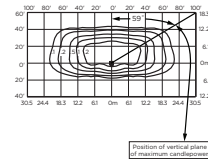
ITL Test Report #: 76663  
BXSPA\*2HA-U  
Initial Delivered Lumens: 9,532



BXSPA\*2HA-U  
Mounting Height: 25' (7.6m)  
Initial Delivered Lumens: 9,612  
Initial FC at grade



ITL Test Report #: 76042  
BXSPA\*GHA-U  
Initial Delivered Lumens: 11,092



BXSPA\*GHA-U  
Mounting Height: 25' (7.6m) A.F.G.  
Initial Delivered Lumens: 8,417  
Initial FC at grade

**EPA and Weight**

Weight 120-277V	Weight 347-480V	EPA				
		1@90°	2@90°	2@180°	3@90°	4@90°
26.0 lbs (12kg)	29.0 lbs (13.2kg)	0.69	1.14	1.38	1.83	2.28

**Lumen Output, Electrical, and Lumen Maintenance Data**

XSP2™ Street/Area Lights													
Input Power Designator	4000K		5700K		System Watts 120-277V	System Watts 347-480V	Total Current					50K Hours Projected Lumen Maintenance Factor @ 15° C (59° F)***	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11			120V	208V	240V	277V	347V		480V
<b>Type II Distribution</b>													
A	9,612	B2 U0 G2	10,680	B2 U0 G2	101	106	0.86	0.49	0.43	0.38	0.30	0.23	99%
<b>Type II Distribution w/BLS</b>													
A	8,417	B1 U0 G1	9,352	B1 U0 G1	101	106	0.86	0.49	0.43	0.38	0.30	0.23	99%

\*Actual production yield may vary between -4 and +10% of initial delivered lumens  
 \*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf)  
 \*\*\* For recommended lumen maintenance factor data see TD-13. Projected L<sub>m</sub> based on 11,088 hours LM-80-08 testing; > 150,000 hours

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# CA10T4



MERIDIAN



CA10T4  
EPA: 2.25F  
Weight: 27lbs-12kg



## Luminaire

Round shape. Luminous prismatic hood, with a finish, guard and utility life.

One piece injection-molded vessel, UV resistant.  
LPR: Clear prismatic acrylic.  
DPR: Clear prismatic polycarbonate.

Tool-free opening system.

Seamless silicone gasket.

IP66 rated.

\*Cyclo-tech® coated stainless steel hardware.

### Utility Meter:

Complete with built-in removable door and tool-free latch opening system, giving access to electrical components, such as the driver, the terminal block connector and the Test-Lock Photocell (optional).

fits on a 4"(10cm) x 3"(7.6cm) long tenon.

## Optics

High performance acrylic refractor lenses.

### LED

SKY 2-3-6P  
IESNA Type II, III or V  
Refractor lens.



\*The SKY light engine consists of an aluminum LED board on a cast aluminum alloy passive heat sink. Designed and tested for optimal thermal management. High transparency acrylic lenses achieve the suitable LED distribution.

## Sources

### Lamp

4K = High power LED 4000 K (neutral white) ± 150K.

### Electrics

Auto-adjustable driver, Class 1, min. of 90% power factor. Tool-free removable tray with "quick" connectors.

120, 208, 240, 277 or 347 volts available

Consult factory for other source and ballast types

## Finish / Options

5 mil/127 microns polyester super durable powder coating.

A wide variety of RAL colors are available in textured (TD) or smooth (SM) finish.

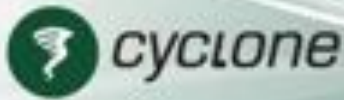
### Options

- DM: Dimmable driver 0-10 volts.
- HS: House side shield.
- PC: Testlock photocell.
- PR: Testlock photocell receptacle.
- PDR: Dimmable PR receptacle (ANSI C136.41)
- FX: Shorting cap.
- RSD: Reducer for 3"(7.6cm) Ø tenon.
- TP: Tamperproof hardware.

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# CA10T4-LAPR

## LED light engine technical information

SOURCE: LED 4800K ± 150K, 70 CRI minimum<sup>1</sup>  
 WATERPROOF RATING: IP66 optical system  
 MAINTENANCE: Tool-free utility access filter

LED code definition: 42W 350MA - 2 - 4K

- LED wattage
- LED current
- Optical distribution
- Color temperature



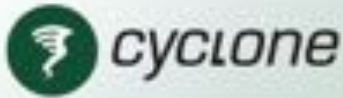
LED CODE	DELIVERED LUMENS	EFFICACY (LM/W)	LED WATTAGE	SYSTEM WATTAGE <sup>2</sup>	BUG RATING	HID EQUIVALENCY <sup>4</sup>
34W350MA-3-4K	2371	62	34	38	B1-U3-G1	70W
34W350MA-3-4K	3009	79	34	38	B1-U3-G1	70W
34W350MA-5-4K	2619	69	34	38	B1-U3-G1	70W
50W350MA-3-4K	3107	64	50	56	B1-U3-G2	100W
50W350MA-3-4K	4513	81	50	56	B1-U3-G1	100W
50W350MA-5-4K	3928	70	50	56	B2-U3-G2	100W
68W700MA-3-4K	4742	63	68	75	B1-U3-G2	150W
68W700MA-3-4K	6017	80	68	75	B1-U3-G2	150W
68W700MA-5-4K	5238	70	68	75	B2-U3-G2	150W



<sup>1</sup>Typical CRI Color Rendering Index per IESNA Illuminance  
<sup>2</sup>IESNA E17 fixture input maximum 4000 lumens  
<sup>3</sup>System wattage includes the LED and the Driver  
<sup>4</sup>Equivalency should always be verified by a third party laboratory test

Note: Photo optic and construction of various LED technology. LED includes 6000K & higher for change without notice and at the discretion of Cyclone Lighting.  
 Cyclone Lighting reserves the right to substitute materials or change the manufacturing process of its products without prior notification.  
 For more details and pricing visit us at [www.cycloneighting.com](http://www.cycloneighting.com)





# CA23T4



SYMPHONY



CA23T4-00A09  
EPA: 2.50W  
Weight: 38lbs (17kg)



### Luminaire

Round shape. Heavy spun aluminum hood with a finial, guard and utility filler.

One piece injection-molded vessel, UV resistant.  
VSSAF: PCND acrylic, 75% diffusing  
VSSAR: Ribbed acrylic.

Tool-free opening system.

Seamless silicone gasket.

IP66 rated.

"Cyclo-Tech" coated stainless steel hardware.

#### Utility filler:

Complete with built-in removable door and tool-free latch opening system, giving access to electrical components, such as the driver, the terminal block connector and the Twist Lock Photocell (optional).

Slip fits on a 4" [10cm] Ø x 3" [7cm] long tenon.

### Optics

High performance acrylic refractor lenses.

LED:  
GAL-2-3-8"  
ESPR type I, II or V  
Refractor lenses.



\*The GALAXY light engine consists of an aluminum LED board on a die cast aluminum alloy passive heat sink. Designed and tested for optimal thermal management. High transparency acrylic lenses achieve the suitable BS distribution. A compression gasket with a double coated tempered glass lens mounted on a die cast aluminum alloy lens frame allow for an IP66 rated LED light engine.

### Sources

Temp:  
4K = High power LED 4000 K (neutral white) ± 100K

Electric:  
Auto-adjustable driver, Class 1, min. of 90% power factor. Tool-free removable tray with "quick" connectors.

120, 208, 240, 277 or 347 volts available

Consult factory for other source and ballast types

### Finish / Options

5 mil/127 microns polyester super durable powder coating.

A wide variety of RAL colors are available in textured (TX) or smooth (SM) finish.

#### Option

- DM: Dimmable driver 0-10 volts.
- HS: House side shield.
- PT: Twist Lock photocell.
- PR: Twist Lock photocell Receptacle.
- PRD: Dimmable PT Receptacle (ANSI C136.41).
- PC: Shorting cap.
- RSD: Reducer for 3" [7cm] Ø tenon.
- SP: Tamperproof hardware.

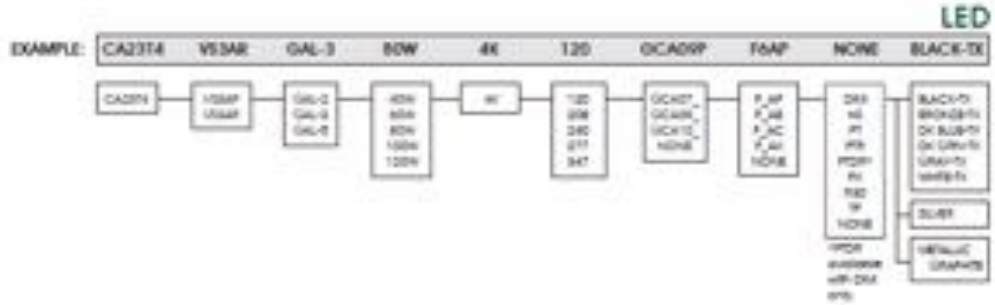
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**cyclone**

**CA23T4**

ORDERING TEMPLATE: Luminaire Globe Optic Watt Lamp Volt Guard Finial Options Color



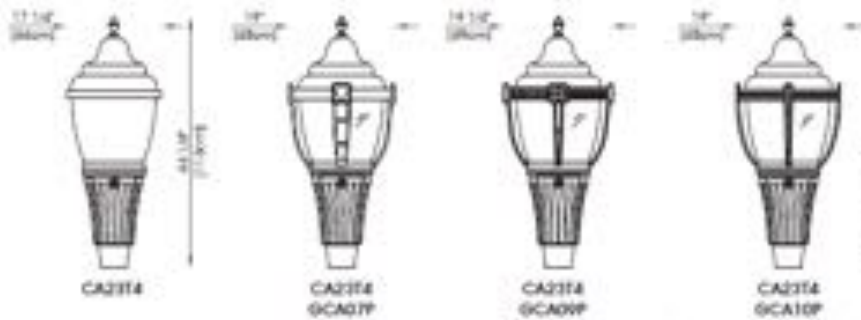
SYMPHONY

**Finials**

- F\_01: Standard Sunburst, Luminaire color standard
- F\_02: Standard Sunburst, 2025 2027MS
- F\_03: Standard Sunburst, 2025 2027MS
- F\_04: Standard Sunburst, Different color than luminaire

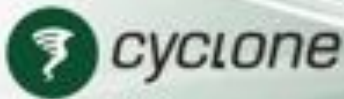


**Luminaires / Guards / Options**



- Optional Fin:
- GCA\_0: Brass fin with clear coat
  - GCA\_1: Clearer fin with clear coat
  - GCA\_2: Same color as luminaire
  - GCA\_3: Different color than luminaire

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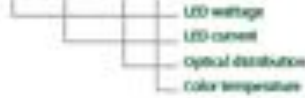


CA23T4

### LED light engine technical information

SOURCE: LED 4000K ± 150K, 70 CRI minimum<sup>1</sup>  
 WATERPROOF RATING: IP66 optical system  
 MAINTENANCE: Tool free utility series filter  
 Dark Sky friendly optical systems.

LED code definition: 40W 350MA - 2 - 4K



SYMPHONY

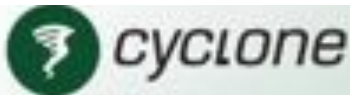
LED CODE	DELIVERED LUMENS	EFFICACY (LM/W)	LED WATTAGE	SYSTEM WATTAGE <sup>2</sup>	BUG RATING	HID EQUIVALENCY <sup>3</sup>
40W350MA-2-4K	4315	98	40	44	B1-U3-G1	70W
40W350MA-3-4K	3999	87	40	44	B1-U3-G2	70W
40W350MA-5-4K	4507	102	40	44	B2-U3-G1	70W
60W350MA-2-4K	6472	101	60	65	B2-U3-G1	100W
60W350MA-3-4K	6640	102	60	65	B2-U3-G2	100W
60W350MA-5-4K	6629	102	60	65	B2-U3-G1	100W
80W350MA-2-4K	8630	100	80	86	B2-U3-G2	150W
80W350MA-3-4K	8300	97	80	86	B2-U3-G2	150W
80W350MA-5-4K	8838	100	80	86	B3-U3-G2	150W
100W350MA-3-4K	10787	101	100	107	B2-U3-G2	200W
100W350MA-3-4K	9960	93	100	107	B2-U3-G3	200W
100W350MA-5-4K	10341	97	100	107	B3-U3-G2	200W
120W350MA-2-4K	12729	99	120	128	B3-U3-G3	250W
120W350MA-3-4K	11454	89	120	128	B3-U3-G3	250W
120W350MA-5-4K	12020	94	120	128	B3-U3-G2	250W

<sup>1</sup> B1-B3: CRI of LED is over 100/100 hours.  
<sup>2</sup> B1-B3: CRI of LED is over 100/100 hours.  
<sup>3</sup> System wattage includes the LED and the driver.  
<sup>4</sup> Performance should always be verified by a third party photometric test.

Note: Due to rapid and continuous advances in LED technology, LED luminaires data is subject to change without notice and at the discretion of Cyclone Lighting. Cyclone Lighting reserves the right to substitute materials or change the manufacturing process of its products without prior notification. See latest specs and updates on website at [www.cycloneighting.com](http://www.cycloneighting.com)

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# CLE17T4



LEVANTO

CLE17T4-GCL03-DJP-F2AP  
EPA: 0.96 ft  
Weight: 35 lbs - 16 kg



## Luminaire

Round shape. Yoke mount cast aluminum housing with utility fliter.

Cast aluminum lens module.  
GAL: Clear tempered glass lens, 98% transmissive.

Tool-free opening system.

Seamless silicone gasket.

IP66 rated.

"Cyclo-Tech" coated stainless steel hardware.

**Utility fliter:**  
Complete with built-in removable door and tool-free latch opening system, giving access to electrical components, such as the driver, the terminal block connector and the Twist Lock PhotoCell (optional).

Slip fits on a 4 1/8" (103mm) x 3 1/8" (77mm) long tenon.

## Optics

High performance acrylic refractor lenses.

LED  
GAL 2-3-6"  
IESNA type II, III or V  
Refractor lenses.

\*The GALAXY light engine consists of an aluminum LED board on a die cast aluminum alloy passive heat sink. Designed and tested for optimal thermal management. High transparency acrylic lenses achieve the subtle LED distribution. A compression gasket with a double coated tempered glass lens mounted on a die cast aluminum alloy lens frame allow for an IP66 rated LED light engine.

## Sources

**Lamp**  
4K = High power LED, 4000K (neutral white) ±150K.

**Electric**  
Auto-adjustable driver, Class 1, min. of 90% power factor, on a tool-free removable tray with "quick" connectors.

120, 208, 240, 277 or 347 volts available.

Consult factory for other source of ballast type.

## Finish / Options

8mil/127microns polyester super durable powder coating.

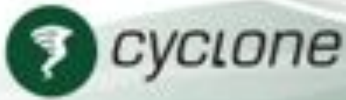
A wide variety of RAL color are available in textured (TX) or smooth (SM) finish.

**Options**  
DM: Dimmable driver 0-10 volts.  
PL: Twist Lock photoCell.  
PR: Twist Lock photoCell (Receptacle).  
PDR: Dimmable PT Receptacle (ANSI C136.41).  
PX: Shopping cap.  
R30: Reducer for 3" (77mm) Ø tenon.  
TP: Tamperproof hardware.

30 vibration tested according to ANSI C136.31.

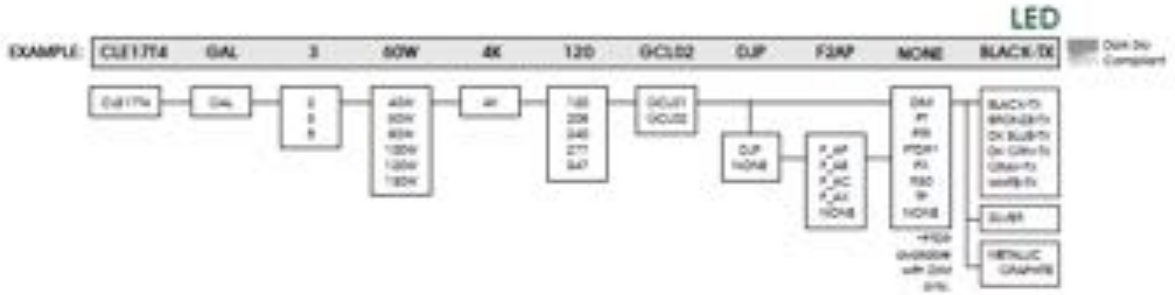
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CLE1714

ORDERING TEMPLATE: Luminaire Lens Optic Watt Lamp Volt Guard Coupler Focal Options Color



LEVANTO

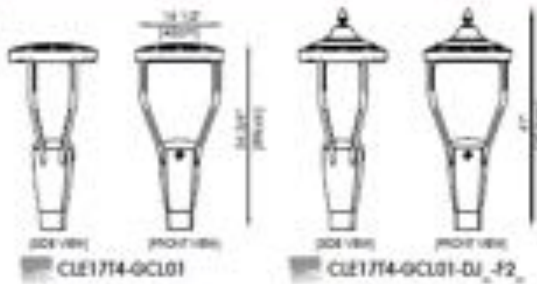
Finials

- F\_4F: Model aluminum, finished color (standard)
- F\_4B: Model aluminum, brass painted
- F\_4C: Model aluminum, clear powder coated
- F\_4D: Model aluminum, different color than luminaire

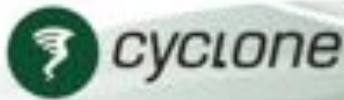


Luminaires / Options

DIN 20 Compliant



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CLE17T4

### LED light engine technical information

SOURCE: LED 4000K ± 150K, 70 CRI minimum\*  
 WATERPROOF RATING: IP66 optical system  
 MAINTENANCE: Tool free utility series filter  
 Dark Sky friendly optical system.



LED CODE	DELIVERED LUMENS	EFFICACY (LM/W)	LED WATTAGE	SYSTEM WATTAGE <sup>2</sup>	BUG RATING	HID EQUIVALENCY <sup>4</sup>
40W350MA-2-4K	3891	90	40	43	B1-U0-G1	70W
40W350MA-3-4K	3906	90	40	43	B1-U0-G1	70W
40W350MA-5-4K	3921	90	40	43	B2-U0-G0	70W
60W350MA-2-4K	5836	91	60	64	B1-U0-G1	150W
60W350MA-3-4K	5824	91	60	64	B1-U0-G1	150W
60W350MA-5-4K	5834	91	60	64	B2-U0-G1	150W
80W350MA-2-4K	7781	91	80	85	B1-U0-G1	150W
80W350MA-3-4K	7644	90	80	85	B1-U0-G2	150W
80W350MA-5-4K	7806	92	80	85	B3-U0-G1	150W
100W350MA-2-4K	9727	91	100	106	B2-U0-G1	200W
100W350MA-3-4K	9302	88	100	106	B2-U0-G2	200W
100W350MA-5-4K	9757	92	100	106	B3-U0-G1	200W
120W350MA-2-4K	11672	92	120	127	B2-U0-G2	250W
120W350MA-3-4K	10919	86	120	127	B2-U0-G2	250W
120W350MA-5-4K	11700	92	120	127	B3-U0-G1	250W
130W450MA-2-4K	12645	92	130	138	B2-U0-G2	250W
130W450MA-3-4K	12092	88	130	138	B2-U0-G2	250W
130W450MA-5-4K	12885	92	130	138	B3-U0-G2	250W

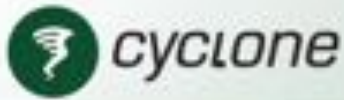
LEWANTO

\*NSA 196.21 Calculated CRI's are 100 minimum.  
 NSI 196.21 Reported more than 100 000 hours.  
<sup>1</sup>System voltage includes the LED and the Driver.  
<sup>2</sup>Actual system should always be verified by a third party photometric test.

Note: Due to rapid and continuous advances in LED technology, LED luminaires are subject to change without notice and at the discretion of Cyclone Lighting. Cyclone Lighting reserves the right to substitute materials or change the manufacturing process of its products without prior notification. See latest recalls and updates on recalls at [www.cyclonelighting.com](http://www.cyclonelighting.com)

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# SY21P1

CSI NCR Certified



DOMIA

SY21P1  
EPA, 1.10 IP  
Weight: 23 lbs - 10 kg



## Luminaire

Round shape head module. Heavy spun shade with lens installation system.

Cast aluminum lens module.  
 DAL: Clear tempered glass lens, 98% transmissive.  
 FT1GC: Clear tempered glass lens, 91% transmissive.  
 SD1GC: Clear tempered glass SAG lens.

Tool-free opening system.

Seamless silicone gasket.

IP66 rated.

"Cyclo Tech" coated stainless steel hardware.

For 2 3/8" (ø) lens, 0.154" (mm) wall.

## Optics

Look to the right

High performance acrylic refractor lenses or pre-anodized aluminum reflector with a 95% minimum reflection level.

LED  
 DAL-2-3-5  
 EDNA type I, II or V  
 Refractor lens.



HID  
 SD2-SD3-SD5  
 EDNA type I, II or V  
 Segmented reflector.



HID  
 SD1-SD2-SD3  
 EDNA type I, II or III  
 Segmented reflector.



## Sources

Lamps  
 DL = High power LED, 4000K (neutral white) @ 150K.

MH = Metal halide  
 HPS = High pressure sodium  
 E17 = medium base  
 E26, E28 & E18 = mogul base

Electric:  
 HID: High power factor of 90%. Tool-free removable tray with "quick" connector.  
 LED: Auto-adjustable driver, Class 1, min. of 90% power factor. Tool-free removable tray with "quick" connector.

120, 208, 240, 277 or 347 volts available.

Consult factory for other source and ballast types.

## Finish / Options

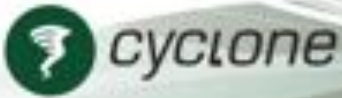
5mil/127microns polyester super durable powder coating.

A wide variety ofRAL colors are available in textured (TX) or smooth (SM) finish.

### Options

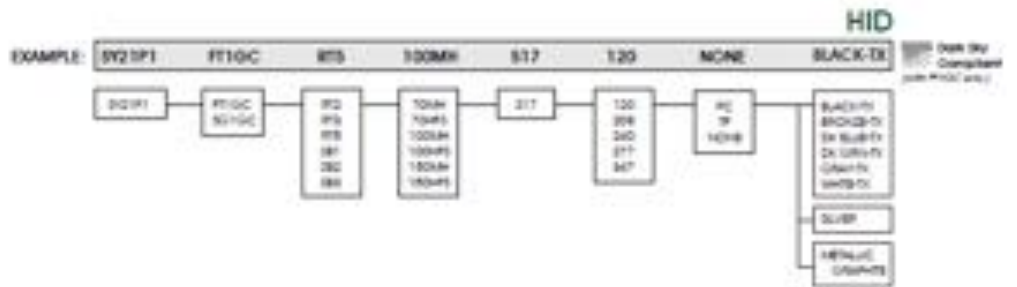
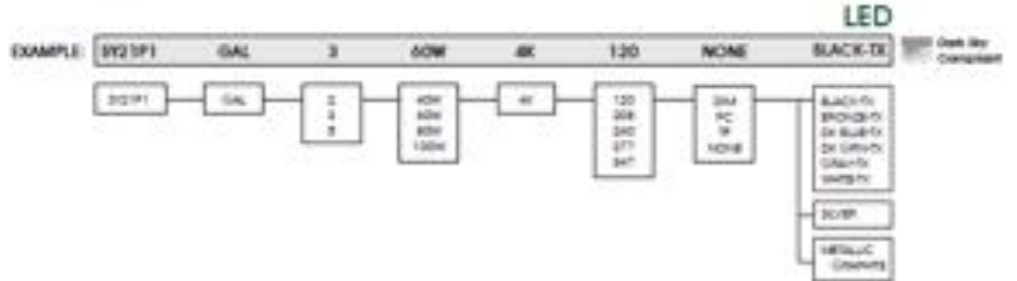
DM: Dimmable driver 0-10 volts.  
 PC: Button type Photocell.  
 TP: Tamperproof hardware.

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SY21P1

ORDERING TEMPLATE: Luminaire Lens Optic Watt Lamp Volt Options Color



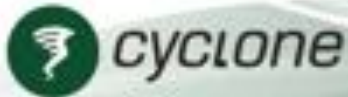
DOMIA

Luminaire

 Dark Sky Compliant



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SY21P1

### LED light engine technical information

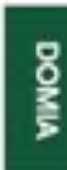
SOURCE: LED 4000K ± 150K, 70 CRI minimum<sup>1</sup>  
 WATERPROOF RATING: IP66 optical system  
 MAINTENANCE: Tool-free utility series filter  
 Dark Sky friendly optical system.

LED code definition: 40W 350MA - 2 - 4K



LED CODE	DELIVERED LUMENS	EFFICACY (LM/W)	LED WATTAGE	SYSTEM WATTAGE <sup>2</sup>	BUG RATING	HID EQUIVALENCY <sup>4</sup>
40W350MA-2-4K	4419	102	40	43	B1-U0-G1	70W
40W350MA-3-4K	4737	110	40	43	B1-U0-G1	70W
40W350MA-5-4K	4749	107	40	43	B2-U0-G1	70W
60W350MA-2-4K	6680	104	60	64	B1-U0-G1	100W
60W350MA-3-4K	7105	111	60	64	B1-U0-G1	100W
60W350MA-5-4K	7408	113	60	64	B3-U0-G1	100W
80W350MA-2-4K	9043	108	80	85	B1-U0-G1	150W
80W350MA-3-4K	9474	111	80	85	B2-U0-G2	150W
80W350MA-5-4K	9688	113	80	85	B3-U0-G1	150W
100W350MA-2-4K	11304	107	100	108	B2-U0-G2	200W
100W350MA-3-4K	11804	112	100	108	B2-U0-G2	200W
100W350MA-5-4K	12157	114	100	108	B3-U0-G2	200W

<sup>1</sup>IES TM-21 Calculated L70s over 50,000 hours.  
<sup>2</sup>IES TM-21 Reported more than 30,000 hours.  
<sup>3</sup>System wattage includes the LED and the driver.  
<sup>4</sup>Darkness should always be verified to confirm early placement test.



Note: Due to rapid and continuous advances in LED technology, LED systems may be subject to change without notice and at the discretion of Cyclone Lighting. Cyclone Lighting reserves the right to suspend, modify or change the manufacturing process of its products without prior notification. See latest results and updates on website at [www.cycloneighting.com](http://www.cycloneighting.com)

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## Contempo LED Series 245L

### PRODUCT OVERVIEW

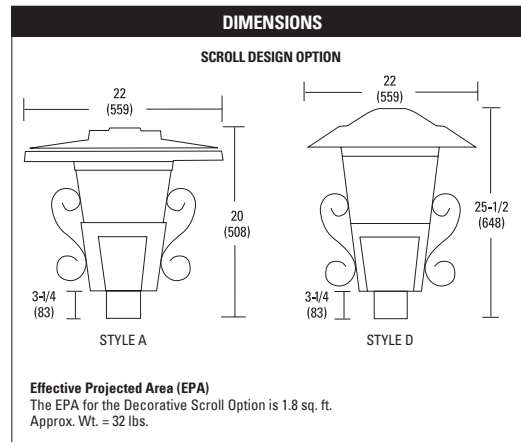
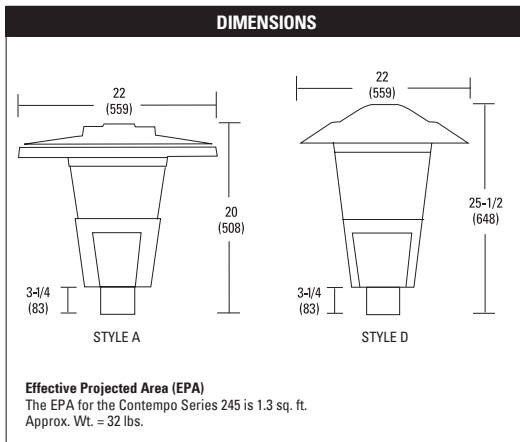


#### Applications:

Streetscapes  
Walkways  
Pathways  
Parks

#### Features:

- Die-cast aluminum housing and spun aluminum hood for long-life performance
- Optical assembly designed for maximum performance, available in Type II, Type III and Type V
- Multi-gasketing to provide weatherproof protection of optical assembly for full illumination performance
- Hinged hood and captive screw latching provision afford quick, easy access to electrical and optical area for servicing
- Available with two different style hoods and an added scroll option for a more decorative look
- Cone mounting fitter with three set screws allows secure installation to pole sizes 2-3/8" or 3" O.D.
- Prismatic reflectors available in acrylic, glass and polycarbonate
- Rain pattern lens available in acrylic or polycarbonate
- Complies with ANSI: C136.2, C136.10, C136.15
- CSA listed and suitable for up to 30°C ambient
- Rated L70, LED life greater than 100,000 hours at 25°C
- Replaces up to 150W HPS light source incumbent models
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at [www.designlights.org/QPL](http://www.designlights.org/QPL) to confirm which versions are qualified.



*All dimensions are inches (millimeters) unless otherwise noted.*

Note: Specifications subject to change without notice.  
Contempo Series 245L LED



## Contempo LED Series 245L

### ORDERING INFORMATION

Example: 245L 20LEDE70 MVOLT 4K R2 RNA

Series	Performance Package	Voltage	Color Temperature (CCT)
245L Contempo LED	<b>20LEDE10</b> 20 Chips, 1050 mA Driver, 71 input watts <b>20LEDE70</b> 20 Chips, 700 mA Driver, 44 input watts <b>10LEDE10</b> 10 Chips, 1050 mA Driver, 38 input watts <b>10LEDE70</b> 10 Chips, 700 mA Driver, 26 input watts <b>10LEDE53</b> 10 Chips, 525 mA Driver, 19 input watts <b>10LEDE35</b> 10 Chips, 350 mA Driver, 13 input watts	<b>MVOLT</b> Multi-volt, 120-277V <b>347</b> 347V <b>480</b> 480V	<b>3K</b> 3000K <b>4K</b> 4000K <b>5K</b> 5000K

Distribution	Optics	Options	
<b>R2</b> Type II <b>R3</b> Type III <b>R5</b> Type V	<b>GL</b> <sup>1</sup> Glass <b>AY</b> <sup>2</sup> Acrylic <b>PY</b> <sup>2</sup> Polycarbonate <b>RNA</b> Rain Pattern Acrylic <b>RNP</b> Rain Pattern Polycarbonate	<u>Paint</u> <sup>3</sup> <b>(blank)</b> Gray (standard) <b>BK</b> Black <b>DDB</b> Dark Bronze <b>WH</b> White <b>BZ</b> Bronze  <u>Photocontrol</u> <b>(blank)</b> 3 pin NEMA Photocontrol Receptacle (standard) <b>NR</b> <sup>4</sup> No Photocontrol Receptacle <b>P5</b> 5 pin NEMA Photocontrol Receptacle (dimnable driver included) <b>P7</b> 7 pin NEMA Photocontrol Receptacle (dimnable driver included) <b>PCSS</b> <sup>5,6</sup> Solid State Lighting Photocontrol (120-277V) <b>PCLL</b> <sup>5,6</sup> Solid State Long Life Photocontrol	<u>Hood Style</u> <b>(blank)</b> Style A <b>SD</b> Style D  <u>Miscellaneous</u> <b>SS</b> Stainless steel hardware <b>NL</b> NEMA Label <b>XL</b> Not CSA Listed <b>SH</b> Shorting Cap <b>DE</b> <sup>7</sup> ROAM Dimming Enabled <b>DM</b> DM 0V-10V dimmable driver only (leads attached) <b>DD</b> <sup>8</sup> Decorative scroll design <b>CR</b> Enhanced Corrosion Resistant Finish <b>HSS</b> House Side Shield

- Notes:**
1. Available in R3 & R5 only
  2. Available in R2 & R5 only
  3. Other colors available, please contact factory
  4. PC and SH not available with NR option
  5. Standard failure mode="Fail On"
  6. Photocontrols supplied with ANSI Standard Turn-On levels
  7. Specifies a ROAM dimming enabled fixture with a dimming control module factory installed. NEMA photocontrol receptacle required. Additional hardware and services required. ROAM deployment must be purchased separately.
  8. Scroll color must be specified

**AEL** American Electric Lighting  
 AEL Headquarters, 3825 Columbus Road, Granville, OH 43023  
 www.americanelectricalighting.com  
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**Warranty** Five-year limited warranty. Complete warranty terms located at: [www.acuitybrands.com/CustomResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomResources/Terms_and_conditions.aspx)  
 Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

*Please contact your sales representative for the latest product information.*

## Contempo LED Series 245L

### OPERATING CHARACTERISTICS

DLC products are listed in **BOLD**  
Non DLC products are indicated by shaded box

LED Quantity, mA, CCT	Input Watts	TOTAL LUMENS				
		R2-AY	R5-AY	R2-PY	R2-GL	R5-GL
20LEDE10 3k	71	2834	3298	2421	2956	3016
20LEDE10 4k	71	3565	4148	3045	3718	3492
20LEDE10 5k	71	3843	4472	3280	4008	4086
20LEDE70 3k	44	2175	2530	1854	2268	2323
20LEDE70 4k	44	2745	3194	2317	2863	2904
20LEDE70 5k	44	2959	3443	2531	3086	3153
10LEDE10 3k	38	1515	1763	1291	1562	1601
10LEDE10 4k	38	1904	2215	1626	1971	2016
10LEDE10 5k	38	2252	2389	1750	2119	2174
10LEDE70 3k	26	1141	1327	984	1197	1203
10LEDE70 4k	26	1462	1701	1237	1506	1535
10LEDE70 5k	26	1569	1825	1333	1621	1659
10LEDE53 3k	19	902	1050	770	937	954
10LEDE53 4k	19	1134	1319	966	1179	1199
10LEDE53 5k	19	1223	1423	1041	1268	1294
10LEDE35 3k	13	755	813	553	673	685
10LEDE35 4k	13	813	946	695	844	863
10LEDE35 5k	13	877	1020	749	911	929

DLC products are listed in **BOLD**  
Non DLC products are indicated by shaded box

LED Quantity, mA, CCT	Input Watts	TOTAL LUMENS					
		R2-RNA	R3-RNA	R5-RNA	R2-RNP	R3-RNP	R5-RNP
20LEDE10 3k	71	3522	3713	4183	3277	3486	3919
20LEDE10 4k	71	4230	4671	5262	4121	4385	4930
20LEDE10 5k	71	4775	5035	5673	4443	4727	5314
20LEDE70 3k	44	3696	2842	3202	2498	2658	2988
20LEDE70 4k	44	3391	3575	4028	3142	3343	3759
20LEDE70 5k	44	3655	3854	4342	3387	3604	4052
10LEDE10 3k	38	1921	2025	2282	1788	1903	2139
10LEDE10 4k	38	2417	2547	2870	2249	2393	2691
10LEDE10 5k	38	2605	2746	3094	2425	2580	2901
10LEDE70 3k	26	1438	1516	1708	1338	1423	1600
10LEDE70 4k	26	1809	1907	2149	1683	1791	2013
10LEDE70 5k	26	1950	2056	2317	1814	1930	2170
10LEDE53 3k	19	1113	1174	1322	1038	1104	1241
10LEDE53 4k	19	1400	1476	1663	1305	1389	1561
10LEDE53 5k	19	1509	1591	1793	1407	1497	1683
10LEDE35 3k	13	798	842	948	746	794	892
10LEDE35 4k	13	1004	1059	1193	938	998	1122
10LEDE35 5k	13	1082	1141	1286	1011	1076	1210

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 www.americanelectricalighting.com  
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**Warranty** Five-year limited warranty. Complete warranty terms located at:  
[www.acuitybrands.com/CustomResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomResources/Terms_and_conditions.aspx)  
 Actual performance may differ as a result of end-user environment and application.  
 All values are design or typical values, measured under laboratory conditions at 25 °C.  
 Specifications subject to change without notice.  
 Please contact your sales representative for the latest product information.



## Georgian Full Cutoff LED Series GRPCL/GRSCL

### PRODUCT OVERVIEW

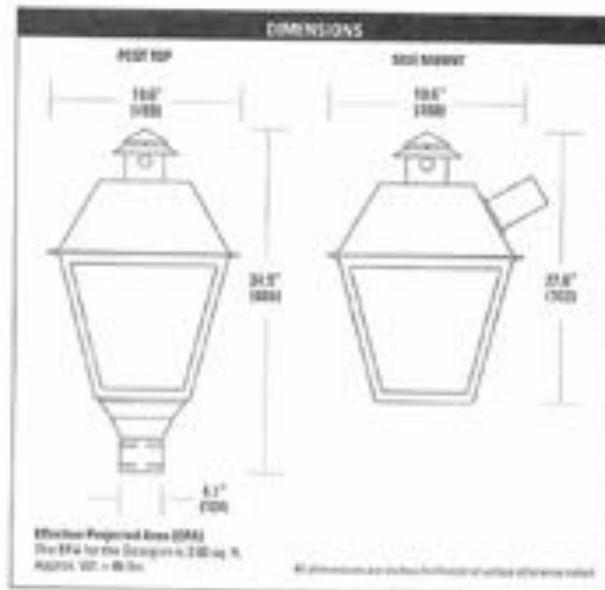


#### Features:

- Two-piece cast aluminum housing
- Coverings are hinged and open with a simple 1/4 turn thumb screw for easy maintenance
- Choice of two mounting arrangements: side entry or post top
- No Lenses Supplied with this product. Supplied with Neoprene Gasketing to seal LED driver chamber. LED Lenses are sealed to prevent ingress of contaminants.
- All exposed screws are stainless steel
- Extruded corrosion resistant finish is standard
- Cast aluminum siphon accepts 3" to 3-1/2" O.D. X 4" long tenon or pole. Mounting hardware included
- A photocell option is supplied when ordering the photocell receptacle
- Certified by CSA standards
- Complies with ANSI: C136.1, C136.18, C136.15, C06.05

#### Applications:

Residential areas  
Architectural landscape lighting  
Parks, walkways  
Recreational areas  
Commercial environments



Note: Specifications subject to change without notice.  
Georgian Full Cutoff LED Series GRPCL/GRSCL

**AEL** American  
Electric  
Lamp

# Georgian Full Cutoff LED

## Series GRPCL/GRSCL

### ORDERING INFORMATION

Example: GRSCL 30LEDE53 MVOLT 4K R3

Series	Wattage / Source	Voltage	Color Temperature (CCT)	Distribution
<b>GRPCL</b> Georgian Post Top Full Cutoff LED	<b>30LEDE70</b> 30 Chips 700 mA <b>30LEDE53</b> 30 Chips 525 mA <b>30LEDE70</b> 30 Chips 700 mA	<b>MVOLT</b> Multi volt, 120-277V <b>34F</b> 347V <b>480</b> 480V	<b>3K</b> 3000K <b>4K</b> 4000K <b>5K</b> 5000K	<b>R2</b> Roadway Type II <b>R3</b> Roadway Type III
<b>GRSCL</b> Georgian Side Mount Full Cutoff LED	<b>30LEDE53</b> 30 Chips 525 mA			

Options		
<b>Cut/fin</b> (finch)	<b>Photocontrol</b> (finch)	<b>Miscellaneous</b> (finch)
<b>RZ</b> Black (standard) <b>RZ</b> Bronze <b>R00</b> Dark Bronze <b>GY</b> Gray <b>WH</b> White <b>BR</b> Silver Bronze	<b>NR<sup>1</sup></b> 3 pin NEMA Photocoupled Receptacle (standard) <b>PE</b> 3 pin NEMA Photocoupled Receptacle (dimmerable driver included) <b>PE</b> 7 pin NEMA Photocoupled Receptacle (dimmerable driver included) <b>PCSL<sup>2</sup></b> Solid State Lighting Photocoupled (CB 277V) <b>PCLL<sup>3</sup></b> Solid State Long Life Photocoupled	<b>LS<sup>1</sup></b> CSA Listing (standard) <b>UL</b> UL94 Labul <b>LS<sup>1</sup></b> Ladder Rail <b>SC</b> Shunting Cap <b>RCS</b> Recess Side Shield <b>SL</b> Hot CSA Listed <b>CS</b> Decorative Chimney <b>CS</b> Decorative Canopy <b>CS</b> Conical Base <b>CLB</b> Constant Light Output
<b>Terminal Block</b> <b>T1</b> Wired to L1 & L2 Positions <b>T3</b> 3 Wire Operation (L1, N, L2 Positions) <sup>4</sup>		

**Notes:**

1. Other colors available, please contact factory
2. PE and SE not available with NR system
3. Standard factory finish is "Hot Dip"
4. Photocoupled supplied with ANSI Standard Turn-On Levels
5. Ships with unit, field installed

**AEL** American Electric Lighting  
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www.ael.com  
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**Warranty:** For your limited warranty, complete warranty terms located at [www.ael.com](http://www.ael.com) or [www.ael.com/Products/LED/LED%20Series\\_and\\_options.aspx](http://www.ael.com/Products/LED/LED%20Series_and_options.aspx). Actual performance may differ as a result of end user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.  
Please contact your sales representative for the latest product information.

# OSQ Series

OSQ™ LED Area/Flood Luminaire – Medium

## Product Description

The OSQ™ Area/Flood luminaire blends extreme optical control, advanced thermal management and modern, clean aesthetics. Built to last, the housing is forged cast aluminum with an integral, weatheright LED driver compartment. Versatile mounting configurations offer simple installation. Its slim, low-profile design minimizes wind load requirements and blends seamlessly into the site providing even, quality illumination. X input power designator is a suitable upgrade for HID applications up to 250 Watt. Y input power designator is a suitable upgrade for HID applications up to 400 Watt.

**Applications:** Parking lots, walkways, campuses, car dealerships, office complexes, and internal roadways

## Performance Summary

<p><b>BeamOptix™ Precision Delivery Optic™ optics</b></p> <p>Made in the U.S.A. of U.S. and imported parts</p> <p><b>CRI:</b> Minimum 70 CRI (4000K &amp; 5700K), 80 CRI (3000K)</p> <p><b>CCT:</b> 3000K (+/- 300K), 4000K (+/- 300K), 5700K (+/- 500K)</p> <p><b>Limited Warranty:</b> 10 years on luminaire/10 years on Colorfast DefendGuard™ finish</p> <p><small>For more information, please visit <a href="http://www.cree.com/ledlighting">www.cree.com/ledlighting</a> for complete details.</small></p>
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## Accessories

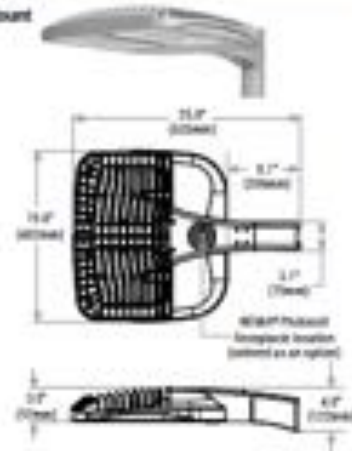
<p><b>Field installed</b></p> <p><b>BeamOptix™</b></p> <p>OSQ-BA-1000 – Field lighting optics</p> <p>OSQ-BA-2000 – Non-irrigation</p>
---

## Ordering Information

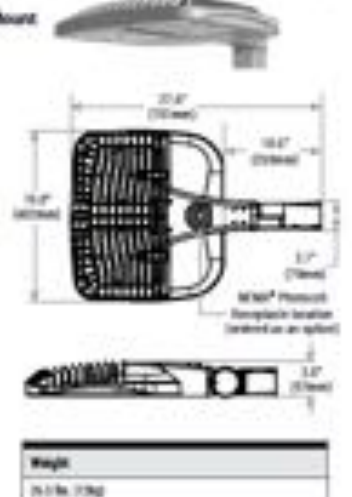
Fully assembled luminaire is composed of two components that must be ordered separately.  
 Example: OSQ-BA-1000 + Luminaire OSQ-4-100-200-0-400-1A-01

<b>Mount (Luminaire must be ordered separately)</b>	
OSQ	
OSQ-AA Adjustable Arm	Color Options: 01 Silver, 02 Black, 03 Polished Brass, 04 White
OSQ-BA Fixed Arm	

## AA Mount



## BA Mount



<b>Luminaire (Mount must be ordered separately)</b>									
OSQ	A	AA	Optic		Input Power Designator	CCT	Voltage	Color Options	Options
OSQ	A	AA	OSQ™	MTM	A	3000	120/277V	01	<p><b>0-10V Dimming</b></p> <ul style="list-style-type: none"> <li>- Refer to 01, spec sheet for details</li> <li>- Refer to 01, spec sheet for details</li> <li>- Can't exceed wattage if specified input power is integrated</li> </ul> <p><b>F Flood</b></p> <ul style="list-style-type: none"> <li>- When used in flood lighting, use three beam foot</li> </ul> <p><b>ML Multi-Beam</b></p> <ul style="list-style-type: none"> <li>- Refer to ML, spec sheet for details</li> <li>- High 100%, Low 80%</li> <li>- Intended for streetlight applications at 7' to 10'</li> </ul> <p><b>PWL Programmable Multi-Beam, 20' Ht Mounting Height</b></p> <ul style="list-style-type: none"> <li>- Refer to PWL, spec sheet for details</li> <li>- Intended for streetlight applications at 7' to 10'</li> </ul>
			OSQ™	MTM	A	3000	120/277V	01	<p><b>PWL Programmable Multi-Beam, 10' Ht Mounting Height</b></p> <ul style="list-style-type: none"> <li>- Refer to PWL, spec sheet for details</li> <li>- Intended for streetlight applications at 7' to 10'</li> </ul> <p><b>01 Field Adjustable Optic</b></p> <ul style="list-style-type: none"> <li>- Refer to Field Adjustable Optic spec sheet for details</li> </ul> <p><b>02 M80™ Forward Beam Optic</b></p> <ul style="list-style-type: none"> <li>- Intended for streetlight applications with maximum 40' Ht</li> <li>- Protected by glass</li> </ul> <p><b>03 Beam Optic</b></p> <ul style="list-style-type: none"> <li>- 01 and 02 optics are installed to the left</li> </ul> <p><b>04 Beam Optic</b></p> <ul style="list-style-type: none"> <li>- 01 and 02 optics are installed to the right</li> </ul>

\* Available with the edge beam area, correct with field-installed accessory (see table above)



OSQ™ LED Area/Flood Luminaire – Medium

Product Specifications

CONSTRUCTION & MATERIALS

- Slim, low profile design minimizes wind load requirements
- Luminaire housing is rugged die cast aluminum with an integral, weatherlight LED driver compartment and high performance heat sink
- Connector mounting (existing mounting method on direct arm mount). Mounting adapts to rugged die cast aluminum and mounts to 3-4" (76-102mm) square or round pole, secured by two 1/2" (12.7mm) UNC bolts spaced on 2" (51mm) centers
- Mounting for the adjustable arm mount adaptor is rugged die cast aluminum and mounts to 2" (51mm) (Ø 3.375" (86mm) Ø) hole
- Adjustable arm mount can be adjusted 100° in 2.5° increments
- Designed for uplight and downlight applications
- Exclusive ClearCast Diffuser® lens features an E-Cast epoxy primer with an ultra-thin powder topcoat, providing maximum resistance to corrosion, ultraviolet degradation and abrasion. Silver, bronze, black, and white are available
- Weight: 26.5 lbs. (12kg)

ELECTRICAL SYSTEM

- Input Voltage: 120-277V or 347-480V, 50/60Hz, Class 1 driver
- Power Factor: > 0.9 at full load
- Total Harmonic Distortion: < 20% at full load
- Integral 10kV surge suppression protection standard
- To address branch control, slow blow fuse or type I/CO breaker should be used
- IEC Source Current: 0.15 amp

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Enclosure rated IP66 per IEC 60529 when ordered without B option
- Consult factory for CE Certified products
- Complies with IEC 60825-1:2007, 30 mW and overpass vibration standards
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15 standards for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient wall fog conditions as defined in ASTM Standard G 117
- Meets Bay Area requirements within 4000A
- DLC qualified when ordered with 300 (30W, 300 uplight), or 400 and 570 (20W, 20W, 40W, 50W, 150, 240, 400, 500 uplight). Please refer to [www.designlights.org/DLP](http://www.designlights.org/DLP) for most current information
- Dark Sky Friendly: ICA approved. Please refer to [www.darksky.org/](http://www.darksky.org/) for most current information
- RoHS compliant. Consult factory for additional details

Electrical Data*							
Input Power Designator	System Watts (30-400W)	Total Current					
		120V	208V	240V	277V	347V	480V
A	110	0.97	0.55	0.49	0.40	0.34	0.25
J	148	1.27	0.69	0.74	0.54	0.46	0.33

\*Values are at 0.9 PF

Recommended LED Driver Lumen Maintenance Factors (LMF)							
Ambient	Input Power Designator	Light	Initial LMF	20k Hr Projected LMF	50k Hr Projected LMF	75k Hr Projected Calculated† LMF	100k Hr Calculated† LMF
0°C (32°F)	A/J	30W, 30W, 30W	1.00	0.90	0.74	0.60	0.54
		30W, 30W, 150W, 270, 400, 500, 400W	1.00	1.00	1.00	1.00	1.00
12°C (54°F)	A/J	30W, 30W, 30W	1.00	0.90	0.75	0.60	0.55
		30W, 30W, 150W, 270, 400, 500, 400W	1.00	1.00	1.00	1.00	0.97
18°C (64°F)	A/J	30W, 30W, 30W	1.00	0.87	0.70	0.57	0.53
		30W, 30W, 150W, 270, 400, 500, 400W	1.00	1.00	1.00	1.00	0.99
24°C (74°F)	A/J	30W, 30W, 30W	1.00	0.85	0.67	0.56	0.52
		30W, 30W, 150W, 270, 400, 500, 400W	1.00	1.00	1.00	1.00	0.97
28°C (82°F)	A/J	30W, 30W, 30W	1.00	0.83	0.65	0.54	0.51
		30W, 30W, 150W, 270, 400, 500, 400W	1.00	0.90	0.80	0.80	0.79

\*Current requirements address a 4000K and 5000K CCT (277V) are calculated per IES TM-10 based on 1000 Hr life and 70% lumen maintenance. To conform with IESNA TM-10 (1-11), Projected Lumen Maintenance (LMF) should be based on the conditions that are within the table. †As defined in IESNA TM-10 (1-11), Calculated Lumen Maintenance (LMF) is based on the conditions that are within the table. ‡To conform with IESNA TM-10 (1-11), Calculated Lumen Maintenance (LMF) should be based on the conditions that are within the table and not based on the conditions for the device under testing (DUT) as in paragraph 3.2.1.1.1.



Maximum weight - 40 lbs  
Maximum effective projected area - 1.38 sq. ft.

**Utility Arlington®  
Series Luminaire  
Full Cutoff LED**

AAE    DTG    6W    A2    B    LS    2

**DECORATIVE  
OUTDOOR**

**HOLOPHANE®**  
LUMINAIRE MANUFACTURING COMPANY  
An Energy Efficient Company

**ORDERING INFORMATION:**

<b>AUL</b>	<b>WATTAGE / DRIVER</b> DTG = TD W (385mA) 6W = 6W W (385mA)	<b>VOLTAGE</b> A2 = ALTOBSCENDING VOLTAGE (120 THRU 277 V) AA = ALTOBSCENDING VOLTAGE (247 THRU 480 V)	<b>COLOR</b> A = AZ SPICED F B = BLACK C = DARK GREEN D = BROWN GREEN E = BROWN F = DARK GREEN G = DARK GREEN H = GREEN I = WHITE J = BROWN	<b>OPTICS</b> LS = ASYMMETRIC FULL CUTOFF, FLAT GLASS LB = SYMMETRIC FULL CUTOFF, FLAT GLASS	<b>FINIAL (FACTORY INSTALLED)</b> B = BALL S = SPHERE
	<b>COLOR TEMPERATURE</b> 4K = 4000K 5K = 5000K 6K = 6000K				

OPTIONS

**OPTIONS**

DTG = CUTOFF DRIVER  
AA = MEGA TAPER (DUE PHOTOCONTROL RECEPTACLE ONLY)  
LS = 5 FEET OF PREWIRED LEADS  
L10 = 10 FEET OF PREWIRED LEADS  
L20 = 20 FEET OF PREWIRED LEADS  
L30 = 30 FEET OF PREWIRED LEADS  
L40 = 40 FEET OF PREWIRED LEADS  
L50 = 50 FEET OF PREWIRED LEADS  
PCS = DTL, SOLID STATE LIGHTING PHOTOCONTROL, 120VOLT VOLT (MUST BE USED WITH OPTION "V")  
P24 = DTL, TRIAC LIGHT PHOTOCONTROL, 247 VOLT (MUST BE USED WITH OPTION "V")  
P48 = DTL, TRIAC LIGHT PHOTOCONTROL, 480 VOLT (MUST BE USED WITH OPTION "V")  
PNC = SHORTING GAP (MUST BE USED WITH OPTION "V")



\*UNIT IS PROVIDED WITH 5 FEET OF PREWIRED LEADS UNLESS OTHERWISE SPECIFIED

100% ENERGY EFFICIENT LED LUMINAIRE. © 2014 HOLOPHANE

HOLOPHANE LUMINAIRE MANUFACTURING COMPANY  
1000 W. 10TH AVENUE, SUITE 100, DENVER, CO 80202  
TEL: 303.733.1111 FAX: 303.733.1112  
WWW.HOLOPHANE.COM

ORDER #:	TYPE:	DRAWN: SJK	DATE: 05/04/11	DWG #: LUM_ALE
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	<p><b>Utility Arlington® Series Luminaire Full Cutoff LED</b></p>
<p><b>Specifications</b></p> <p><b>GENERAL DESCRIPTION</b> The Utility Arlington LED is designed for ease of maintenance with the plug-in driver module common to each of the luminaires in Holophane's Utility Luminaire LED Series. A precision optical system maximizes post spacings while maintaining uniform illumination.</p> <p><b>OPTICAL SYSTEM</b> The optical system consists of a precisely engineered LED circuit board located in the top cover. A gasket between the cover and ring along with a flat glass plate and gasket beneath the reflector create a sealed optical compartment that meets an IP65 rating. Optics designed to provide an L.E.S., Asymmetric or Symmetric full cutoff distribution are available.</p> <p><b>LUMINAIRE HOUSING</b> The luminaire housing, cast of aluminum, anchors the optical system and provides an enclosure for the plug in electrical module. The electrical enclosure conforms to an IP55 rating. For use with units with an E.E.I.-N.E.M.A. twist lock photocell receptacle, the housing contains a glass "window" to allow light to reach the cell. The three station incoming terminal block are provided to a five conductor receptacle for ease in connecting the electrical module. A slipfit will accept a 3" High by 2 7/8" to 3 1/8" O.D. pole tenon.</p> <p><b>LUMINAIRE HOUSING DOOR</b> Cast of aluminum, the housing door is hinged and latched to the housing. The door forms the mount for the electrical module, and allows easy access during maintenance.</p> <p><b>ELECTRICAL MODULE</b> The electrical components are mounted to an aluminum plate that is removable with standard tools. A matching five plug connector connects the electrical components to the surge protector for quick replacement. For Photoelectric operation, the electrical module is provided with an E.E.I.-N.E.M.A. twist lock Photocell receptacle.</p> <p><b>TOP COVER</b> The octagonal cover, cast of aluminum, is attached to the top ring of the luminaire housing by two stainless steel hinge pins. The cover is latched by an overcenter, positive action, stainless steel latch which allows for optical chamber access.</p> <p><b>DRIVER</b> Voltage sensing 120-277V or 347-480V, 50/60 Hz electronic drivers are &gt;90% efficient. Potted for increased thermal management. Removable through hinged door housing. Available with 0-10V dimming control signal input. Refer to Driver Data Sheet for specific operating characteristics.</p> <p><b>FINISH</b> The luminaire is finished with polyester powder paint to ensure maximum durability.</p> <p><b>UL</b> The luminaire is UL listed as suitable for wet locations at a maximum of 40 degrees C ambient temperature.</p>	<p><b>DECORATIVE OUTDOOR</b></p>
	
<p>©2011 ACORN BARRIS LUMINAIRE INC. All Rights Reserved.</p>	
<p>THE DRAWING SHALL BE USED ONLY AS A GUIDE TO THE GENERAL APPEARANCE OF THE PRODUCT. IT IS NOT TO BE USED FOR CONSTRUCTION OF THE PRODUCT. THE DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE. THE DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE. THE DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE.</p>	<p>ORDER # _____ TYPE _____ DRAWING: BCK _____ DATE: 05/04/11 _____ DRAWN BY: LUM_AJA _____</p>





November 23, 2015

Chris Wagar  
Town of Gananoque  
30 King Street East, PO Box 100  
Gananoque, ON K7G 2T6

**Subject: Proceed Notice – LED Streetlight Upgrade**

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Dear Chris:

Having completed our Investment Grade Audit (IGA) of the streetlight network in the Town of Gananoque, we are ready to proceed to the next phase of the project. The IGA was conducted to more precisely assess the existing state of the network, and to incorporate custom lighting designs from the manufacturer into the final selection of energy efficient LED luminaires to replace your existing HPS fixtures. It is this final selection of LED luminaires that ultimately determines the energy savings and the IESO incentive that the township will receive.

You will recall that in our initial proposal, our desktop assessment of the potential energy savings was based upon a simple a one-for-one exchange, prior to actual design specifications being applied. Our Letter of Intent (LOI) authorized the Investment Grade Audit to precisely forecast the energy savings after the upgrade.

As detailed in the Investment Grade Audit, the final selection of luminaires as recommended by our design team will result in your street lighting network consuming 155,185 kWh as opposed to 466,121 kWh before the upgrade. This represents a 67% total reduction in street lighting energy use.

We have revised the total project costs from \$448,097 to \$609,877. Overall, the total project costs have increased due to the increase of the number of decorative fixtures, which are more expensive than cobra heads.

Pursuant to the terms of our Letter of Intent, we are pleased to work with you to move ahead with your streetlight upgrade. We have enclosed for your review and execution two draft CCDC 14 design-build stipulated price contracts, one for your cobra heads and one for your decoratives, which reflect the terms and conditions outlined in the LOI, and as updated by the IGA, and this notice. Once this Agreement has been signed, we will be able to order the luminaires for delivery.

The enclosed CCDC 14 documents are recognized by most municipalities in Ontario as a standard document for projects of this nature. Should you have any questions regarding the above, please do not hesitate to call Mark Gibson at 613-453-7674.

Thank you for allowing RealTerm Energy Corp. to address your request for an Energy Savings Proposal related to the retrofit of your existing municipal street lighting equipment.

Best regards,

**REALTERM ENERGY CORP.**



Sean Neely,  
President

**SUPPLEMENTARY CONDITIONS TO STANDARD DESIGN-BUILD STIPULATED PRICE  
CONTRACTS CCA-CSC-RAIC DOCUMENT 14-2000 “C:Cobraheads-0000554” and “C:Decos-  
0000555”, BETWEEN REAL TERM ENERGY and THE CORPORATION OF THE TOWN OF  
GANANOQUE, ONTARIO**

**NOVEMBER 23, 2015**

**GENERAL REFERENCE**

The standard Design-Build Stipulated Price Contract, CCA-CSC-RAIC Document 14-2000, consisting of the Agreement between Owner and Design-Builder, Definitions of the Design-Build Stipulated Price Contract and the General Conditions of the Design-Build Stipulated Price Contract (collectively, the “CCDC 14”), the Construction Documents and these Supplementary Conditions, are hereby made part of these Contract Documents.

The following Supplementary Conditions shall be read in conjunction with the CCDC 14.

The form of Agreement between Owner and Design-Builder to be signed is the pre-printed CCDC 14.

Article and paragraph references below are to the corresponding articles and paragraphs of the CCDC 14.

**AGREEMENT BETWEEN OWNER AND DESIGN-BUILDER**

***ARTICLE A-5 PAYMENT***

Paragraph 5.1 is deleted in its entirety and replaced with the following:

- “1 Subject to the provisions of the Contract Documents, and in accordance with legislation and statutory regulations respecting holdback percentages and, where such legislation or regulations do not exist or apply, subject to a holdback of ten percent (10%), the *Owner* shall make progress payments to the *Design-Builder* according to the following terms:
- 50% payment due and payable upon receipt of the LED fixtures by the Owner.
  - 50% payment due and payable upon receipt of invoice, such invoice to be billed monthly and calculated based upon the ratio of total fixtures installed divided by the total number of fixtures included in the Work.
  - All applicable taxes to be in addition to the above progress payments, as outlined.
  - Upon *Substantial Performance of the Work*, defined as when the *Work* is ready for use, pay the *Design-Builder* the unpaid balance of the *Holdback* when due together with such *Value Added Taxes* as may be applicable to such payment.

The *Design-Builder* shall submit to the *Owner*, at the same time as the invoice, a schedule of value for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment. The *Owner* shall make progress payments to the *Design-Builder* on account of the *Contract Price* when due in the amount certified by the *Owner*, who is acting as, and is hereinafter called, the ‘*Payment Certifier*’, together with such *Value Added Taxes* as may be applicable to such payment.

Paragraph 5.2 is deleted in its entirety.

**DEFINITIONS OF THE DESIGN-BUILD STIPULATED PRICE CONTRACT**

Paragraph 3 is deleted in its entirety and replaced with the following:

**“3. Construction**

*Construction* means the total construction and related services required by the *Contract Documents* and as more particularly described in Appendix 1.”

Paragraph 4 is deleted in its entirety and replaced with the following:

**“4. Construction Documents**

The *Construction Documents* consist of the output specifications, functional requirements and identified and recommended equipment that are prepared based on the *Contract Documents* by or on behalf of the *Design-Builder* and that are accepted and signed by the *Owner* and the *Design-Builder* after execution of the Agreement, as meeting the general functional intent of the *Contract Documents.*”

Paragraph 5 is deleted in its entirety and replaced with the following:

**“5. Consultant**

The *Consultant* for the purposes of this contract shall be The Corporation of the Town of Gananoque.

Paragraph 11 is deleted in its entirety and replaced with the following:

**“11. Design Services**

*Design Services* means the professional services for the design of the output specifications and functional requirements, and construction administration performed by the *Design-Builder* under the *Contract*, as more particularly described in Appendix 2.”

Paragraph 15 is deleted in its entirety and replaced with the following:

**“15. Place of Work**

The *Place of Work* is the designated sites or locations of the *Construction* more specifically described in Article A-1 “The Work” in the CCDC 14 Contract.”

**GENERAL CONDITIONS OF THE DESIGN-BUILD STIPULATED PRICE CONTRACT**

**PART 1 GENERAL PROVISIONS**

***GC 1.1 CONTRACT DOCUMENTS***

Paragraph 1.1.10.1 is deleted in its entirety and replaced with the following:

- “1.1.10 If there is a conflict within the *Contract Documents*:
- .1 the order of priority of documents, from highest to lowest, shall be
  - the Agreement between the *Owner* and the *Design-Builder*,
  - the Definitions,
  - Supplementary Conditions,
  - the General Conditions,
  - the Letter of Intent,
  - the Investment Grade Audit,
  - the Proceed Notice,
  - the *Owner’s Statement of Requirements*,
  - the *Construction Documents*:

- material and finishing schedules,
- drawings.”

Paragraph 1.1.11 is deleted in its entirety and replaced with the following:

“1.1.11 Copyright for the design and drawings prepared by or on behalf of the *Design-Builder* belongs to the *Design-Builder* or other *Subcontractors* or *Suppliers* who prepared them.”

Paragraph 1.1.12 is deleted in its entirety and replaced with the following:

“1.1.12 Plans, sketches, drawings, graphic representations, and specifications, including computer generated designs, when prepared by the *Design-Builder*, or other *Subcontractors* or *Suppliers*, are instruments of their service and shall remain their property whether the *Construction* for which they are made is executed or not.”

Paragraph 1.1.13 is deleted in its entirety and replaced with the following:

“1.1.13 Submissions or distribution of the *Design-Builder* or other *Subcontractors*' or *Suppliers*' plans, sketches, drawings, graphic representations, and specifications to meet official regulatory requirements or for other purposes in connection with the *Work* is not to be construed as publication in derogation of their reserved rights.”

Paragraph 1.14 is deleted in its entirety and replaced with the following:

“1.1.14 The *Owner* may retain copies, including reproducible copies, of plans, sketches, drawings, graphic representations, and specifications for information and reference in connection with the *Owner's* design and construction and the *Owner's* use and occupancy of the *Work*. As a condition precedent to the use of such documents, the *Owner* shall have paid in full for any *Design Services* rendered. The *Design-Builder* will, prior to any payment being issued under this *Contract*, deliver to the *Owner* a consent and acknowledgement signed by the *Design-Builder*, *Subcontractor* or *Supplier*, as the case may be, confirming its agreement that the *Owner* may use any material produced by the *Design-Builder*, *Subcontractor* or *Supplier*, as the case may be, and in which the *Design-Builder*, *Subcontractor* or *Supplier*, as the case may be, retains any copyright in the manner set forth in paragraphs 1.1.13 to 1.1.16.”

## **GC 1.6 CONFIDENTIALITY**

Paragraph 1.6.1 is deleted in its entirety and replaced with the following:

“1.6.1 The *Owner* and the *Design-Builder* shall keep confidential all matters respecting technical, commercial, and legal issues relating to or arising out of the *Work* or the performance of the *Contract* and shall not, without the prior written consent of the other party, disclose any such matters, except in strict confidence, to its professional advisors, *Subcontractors* and *Suppliers*.”

## **PART 2 DESIGN SERVICES AND ADMINISTRATION OF THE CONTRACT**

### **GC 2.1 CONSULTANT**

Paragraph 2.1.1 is deleted in its entirety and replaced with the following:

“2.1.1 The *Consultant* shall:  
.1 conduct a general review of the progress of the *Construction*, to the extent necessary, in order to determine to the *Consultant's* satisfaction that the *Construction* is performed in general conformity with the requirements of:  
(1) The *Contract Documents*, and

- (2) The applicable statutes, regulations, codes, and bylaws of all authorities having jurisdiction over the *Work*;
- .2 determine of amounts owing to the *Design-Builder* based on the *Consultant's* observations and evaluation of the *Design-Builder's* applications for payment;
- .3 issuance of certificates for payment in the value proportionate to the amount of the *Contract*, for *Work* performed and *Products* delivered to the *Place of the Work*;
- .4 interpret, in the first instance, of the requirements of the *Construction Documents* and the making of findings as to the performance thereunder by both the *Owner* and the *Design-Builder* without showing partiality to either the *Owner* or the *Design-Builder*, and in no event incurring liability for the result of such interpretations or findings rendered in good faith in such capacity;
- .5 interpret and find, in the first instance, claims, disputes, and other matters in question relating to the performance of the *Work* or the interpretation of the *Contract Documents*, except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER.
- .6 reject work which does not conform to the requirements of the *Contract Documents*;
- .7 require special testing and inspection of the *Construction* at the discretion of the *Consultant*, acting reasonably, whether or not such *Construction* has been fabricated, installed, or completed;
- .8 determine the date of *Substantial Performance of the Work* and the issuing of a certificate attesting to same;
- .9 verify the *Design-Builder's* application for final payment and the issuing of a certificate for payment; and
- .10 perform such other work that may be required from time to time that is agreed to by the *Owner* and the *Design-Builder* in writing and is acceptable to the *Consultant*.”

Paragraph 2.1.4 is deleted in its entirety and replaced with the following:

“2.1.4 The *Consultant* shall perform and fulfil the *Consultant's* duties and responsibilities to the standard of diligence, skill, and care that consultants would customarily provide in similar circumstances and in the same relative geographic location, subject to the *Consultant's* professional and legal obligations.”

Paragraph 2.1.5 is deleted in its entirety and replaced with the following:

“2.1.5 The *Owner* waives any right of action in negligence or otherwise any consultant employed by the *Design-Builder* in respect of performance of their duties and responsibilities as herein provided, except to the extent the *Owner* may be entitled to make a claim against the *Design-Builder* under the *Contract*.”

Paragraph 2.1.6 is deleted in its entirety and replaced with the following:

“2.1.6 If the *Consultant's* engagement is terminated, the *Design-Builder* shall engage a new *Consultant* to provide the *Consultant's* services. The *Design-Builder* shall notify the *Owner* in writing before appointing or reappointing a *Consultant*. The *Design-Builder* shall not appoint any *Consultant* to whom the *Owner* may reasonably object.”

### **PART 3 EXECUTION OF THE WORK**

#### **GC 3.3 CONSTRUCTION BY OWNER AND OTHER CONTRACTORS**

Paragraph 3.3.1 is deleted in its entirety and replaced with the following:

“3.3.1 The *Owner* reserves the right to perform work with own forces.”

Paragraph 3.3.2 is deleted in its entirety and replaced with the following:



- “3.3.2 When work is performed by the *Owner's* own forces, the *Owner* shall:
- .1 provide for the co-ordination of the activities and work of *Owner's* own forces with the *Work* of the *Contract*;
  - .2 assume overall responsibility for compliance with the applicable health and construction safety legislation at the *Place of the Work*;
  - .3 ensure that insurance coverage is provided to the same requirements as are called for in GC 11.1 – INSURANCE and co-ordinate such insurance with the insurance coverage of the *Design-Builder* as it affects the *Work*; and
  - .4 take all reasonable precautions to avoid labour disputes or other disputes on the *Project* arising from the work of the *Owner's* own forces.”

Paragraph 3.3.3 is deleted in its entirety and replaced with the following:

- “3.3.3 When work is performed by the *Owner's* own forces, the *Design-Builder* shall:
- .1 afford the *Owner* reasonable opportunity to introduce and store its products and use its construction machinery and equipment to execute its work;
  - .2 co-ordinate and schedule the *Work* with the work of *Owner's* own forces and connect as specified or shown in the *Contract Documents*;
  - .3 participate with the *Owner* in reviewing its schedules when directed by the *Owner*; and
  - .4 where part of the *Work* is affected by or depends upon for its proper execution the work of *Owner's* own forces, promptly report to the *Owner* in writing and prior to proceeding with that part of the *Work*, any apparent deficiencies in such work. Failure by the *Design-Builder* to so report shall invalidate any claims against the *Owner* by reason of the deficiencies in the work of *Owner's* own forces except those deficiencies not then reasonably discoverable.”

Paragraph 3.3.4 is deleted in its entirety and replaced with the following:

- “3.3.4 Where a change in the *Work* is required as a result of the co-ordination and connection of the work of *Owner's* own forces with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.”

Paragraph 3.3.5 is deleted in its entirety.

### **GC 3.7 OTHER CONSULTANTS, SUBCONTRACTORS, AND SUPPLIERS**

Paragraph 3.7.1.1 is deleted in its entirety and replaced with the following:

- “1 Enter into contracts or written agreements with other consultants to require them to perform their services as provided in the *Contract Documents*.”

### **GC 3.9 DOCUMENTS AT THE SITE**

Paragraph 3.9.1 is deleted in its entirety and replaced with the following:

- “3.9.1 The *Design-Builder* shall deliver to the *Owner*, after the commissioning has been concluded, such documents as may be useful to the *Owner* in the on-going operation of the *Construction*, including but not limited to luminaire technical specifications, warranties, and recycling certificates; lighting designs; GIS/GPS database information (electronic format); photocell technical specifications and warranties”

### **GC 3.10 SHOP DRAWINGS**

Paragraphs 3.10.1 through to 3.10.6 inclusive are deleted in their entirety.

**PART 4 ALLOWANCES**

PART 4 ALLOWANCES is deleted in its entirety.

**PART 6 CHANGES IN THE WORK**

**GC 6.3 CHANGE DIRECTIVE**

Paragraph 6.3.4.6 is deleted in its entirety and replaced with the following:

“6 the cost of *Design Services* including all fees and disbursements of the *Subcontractors* and *Suppliers* engaged or employed to provide such services;”

**PART 9 PROTECTION OF PERSONS AND PROPERTY**

**GC 9.2 DAMAGES AND MUTUAL RESPONSIBILITY**

Paragraph 9.2.3 is deleted in its entirety.

**PART 11 INSURANCE - BONDS**

**GC 11.1 INSURANCE**

Paragraph 11.1.1 is deleted in its entirety and replaced with the following:

**“1 Commercial General Liability Insurance:**

The policy shall have limits of not less than \$5,000,000 per occurrence and aggregate. Umbrella or excess liability insurance may be used to achieve the desired limit. Where the *Design-Builder* maintains a single, blanket policy, the addition of the *Owner* as additional insured is limited to liability arising out of the *Work* and all operations necessary or incidental thereto.

Coverage is to include:

- Bodily Injury/Property Damage
- Personal Injury & Advertising Injury
- Damage to Rented Premises
- Premises/Operations Liability
- Products/Completed Operations Liability
- Host liquor liability
- Broad Form Property Damage Liability
- Exception to a pollution exclusion for Bodily Injury or Property Damage Liability from a hostile fire Coverage written on an Occurrence form basis”

Paragraph 11.1.1.2 is deleted in its entirety and replaced with the following:

**“2 Errors and Omissions Insurance:**

The *Design-Builder* shall ensure that the *Consultant* and other consultants engaged in the performance of the *Design Services* each carry Errors and Omissions Insurance that have limits of not less than \$250,000 per claim, and with an aggregate limit of not less than \$500,000 within any policy year. The *Consultant* or other consultants, found to be at fault will be responsible for the deductible amount. The policy shall be

maintained continuously from the commencement of the *Work*, until 2 years after *Substantial Performance of the Work*.”

Paragraph 11.1.1.3 is deleted in its entirety and replaced with the following:

“3 **Automobile Liability Insurance:**

The policy covers for bodily injury, death, and damage to property with respect to all licensed vehicles owned, leased, hired and non-owned by the *Design-Builder*. The policy shall have limits of not less than \$2,000,000 inclusive per occurrence.”

Paragraph 11.1.1.4 is deleted in its entirety.

Paragraph 11.1.1.5 is deleted in its entirety and replaced with the following:

“5 **Property Insurance:**

- (1) The *Design-Builder* shall ensure that the *Consultant*, *Supplier* and *Subcontractor*, to the extent each is engaged by the *Design-Builder* in the performance of the *Work*, carry “All Risk” property insurance on products (materials, supplies, equipment, apparatus, etc.) located, used, or stored at the site in which the *Design-Builder* or the *Owner* have an ownership interest, for the full replacement value of the products provided for incorporation into the *Work* as specified in the *Contract Documents*. Such policy shall also include a sub-limit for “Property In Transit” and “Property Held Offsite”, insuring any and all products including labour, supplies, property of the *Design-Builder* and property of others intended for the installation, retrofitting and testing of the *Work*. The limit for any one loss is not to be less than an amount equal to the maximum value of the property being installed/retrofitted/tested at any one time in the performance of the *Work* being completed.
- (2) “All Risk” property insurance policies required to be in place as provided in clause (1) shall provide that, in the case of loss or damage, payment shall be made to the *Consultant*, the *Supplier*, the *Subcontractor*, the *Design-Builder* and the *Owner*, as the case may be, as their respective interests may appear. The *Consultant*, the *Suppliers*, and/or the *Subcontractor* shall, as the case may be, act on behalf of the *Design-Builder* and the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Consultant*, the *Supplier* and/or *Subcontractor*, as the case may be, shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract Documents* except that the *Consultant*, the *Supplier* and/or *Subcontractor*, as the case may be, shall be entitled to a reasonable extension of *Contract Time*.”

Paragraph 11.1.1.6 is deleted in its entirety and replaced with the following:

“6 **Equipment Insurance:**

The *Design-Builder* shall ensure that the *Consultant*, the *Supplier* and/or the *Subcontractor*, to extent engaged by the *Design-Builder* in the performance of the *Work*, each carry equipment insurance to cover construction machinery and equipment used for the performance of the *Work*.”

Paragraph 11.1.5 is deleted in its entirety.

A new paragraph 11.1.10 is added as follows:

“11.1.10 All required liability insurance policies shall name the *Owner* as an additional insured, The Corporation of the Town of Gananoque, and all required insurance policies shall include a waiver of subrogation by insurers in favor of *Owner*, its agents, officers, or employees or provide the

*Design-Builder* permission to waive subrogation against the *Owner*, its agents, officers, or employees.”

**GC 11.2        BONDS**

Paragraphs 11.2.1 and 11.2.2 are deleted in their entirety.

**PART 12        INDEMNIFICATION - WAIVER - WARRANTY**

**GC 12.3        WARRANTY**

Paragraph 12.3.6 is deleted in its entirety and replaced with the following:

“12.3.6        The *Design-Builder* shall, to the extent the same are available, be responsible for obtaining from *Suppliers*, *Product* warranties in excess of one year on behalf of the *Owner* from the *Suppliers*. These *Product* warranties shall be issued by the *Suppliers* to the benefit of the *Owner*.”