

TOWN OF A THERTON

BID FORMS and SPECIAL PROVISIONS

for

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM

Project Number: 56080

SUBMIT BIDS TO:

Office of the City Clerk
Atherton Town Hall
91 Ashfield Road
Atherton, CA 94027

by 11:00 a.m. **16th day, May, 2017**

BIDS WILL BE OPENED AND READ PUBLICLY

at Town Hall at 11:00 a.m.

NON-MANDATORY PRE-BID MEETING:

11:00 a.m. 9th day, May, 2017 at Town Hall

TIME FOR COMPLETION – 75 WORKING DAYS

Prepared under the direction of
Steven M. Fitzsimons
R.C.E. 36435
Expires June 30 2018

The plans and specifications for this project are available online at:

<http://www.ci.atherton.ca.us/bids.aspx>

Additional important information is contained in the Town of Atherton's
Standard Specifications, which are available on line at

<http://www.ci.atherton.ca.us/DocumentCenter/View/285>

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PART I. BID REQUIREMENTS

ADVERTISEMENT FOR BIDS

TOWN OF ATHERTON
STATE OF CALIFORNIA

Notice: The Town of Atherton (Town) hereby gives notice that it will accept bids for construction of the following public work:

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM Project No: 56080

1. **Scope of Work:** Coordinate with PG&E to disconnect existing series circuit power and connect 120V power, remove and dispose of existing street light fixtures, paint existing electroliers, furnish and install new LED streetlight fixtures, install conduit and conductors, miscellaneous connectors as needed to form a fully functional lighting system.
2. **Plans & Specifications:** Plans & Specifications may be obtained at the Town of Atherton's website at: <http://www.ci.atherton.ca.us/bids.aspx> at no cost. Additional information is contained in Town of Atherton Standard Specifications, which are available at: <http://www.ci.atherton.ca.us/DocumentCenter/View/285>. Contractor shall be responsible for any addendums that may be posted on the Town's website. No Plan holders list will be made be available.
3. **Project Schedule:** The work shall be completed within seventy five (75) working days from the First Day of Construction as defined in the Notice to Proceed.
4. **Pre-Bid Meeting (Non-Mandatory):** A non-mandatory Pre-Bid Meeting will be held at the office of the City Clerk, 91 Ashfield Road, Atherton, California 94027, at **11:00 a.m.** Pacific Standard Time on **9th day, May, 2017**, at which time questions regarding the bid submission will be answered.
5. **Bid Submission:** SEALED BIDS will be received at the office of the City Clerk, 91 Ashfield Road, Atherton, California 94027, until **11:00 a.m.** Pacific Standard Time on **16th day, May, 2017**, at which time bids will be publicly opened and read aloud.
6. **Engineer's Estimate** for the project is: **\$728,000.**
7. **Bid Requirements:** Bids must be for the entire work, and shall be submitted in sealed envelopes clearly marked: "Bid of (Contractor) for **Series Circuit Street Light Replacement Program, Project No: 56080**, along with date and time of bid opening.

Bidders shall refer to the **Bid Requirements** section of the project Plans and Specifications for additional information and requirements.

8. **Required Contractor's License:** A **California Class "A" General Engineering or a combination of "C-10" Electrical and other Class C specialty** licenses for performing the work outlined in the Plans and Specifications is required at the time of the Bid to Bid this contract.

9. **Portion of Work to be Performed by the Contractor:** The General Contractor shall perform, with his own organization, work of a value amounting to not less than 50% of the total contract, excluding specialty items as may be indicated on the bid schedule.
10. **Department of Industrial Relations Registration:** A Contractor or Subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Public Contract Code 4104, or engage in the performance of any contract for public work, as that term is defined in Division 2, Part 7, Chapter 1 of the Labor Code, unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. (<http://www.dir.ca.gov/Public-Works/PublicWorks.html>)
11. **Reservation of Rights:** The Town reserves the right to reject any or all bids; to make any awards or any rejections in what it alone considers to be in the best interest of the Town, and waive any informalities or irregularities in the bids.
12. **Substitution of Securities:** The successful bidder may substitute securities for retention monies withheld to ensure performance of the contract, in accordance with California Public Contract Code, Section 22300.
13. **Prevailing Wage Rates:** Bidders are hereby notified that provisions of California Labor Code regarding prevailing wages and apprentices are applicable to the work to be performed under this contract. Pursuant to Section 1773 et seq. the general prevailing wage rates have been determined by the Director of the California Department of Industrial Relations and appear in the California Prevailing Wage Rates. Copies are on file at the office of the City Engineer and are available to interested parties upon request. The successful bidder shall post a copy of the wage rates at the job site
14. **Bid Preparation Cost:** Bidders are solely responsible for the cost of plan and specification printing and preparing their Bids.
15. **Town Contact:** Questions regarding the project should be directed to Steve Tyler, Public Works Superintendent by written Requests for Information (RFI) to: Public Works Department, 91 Ashfield Road, Atherton, CA 94027, no later than ten (10) business days before bid opening. RFIs may be emailed to styler@ci.atherton.ca.us.
16. **Understanding:** By submitting a bid in response to this advertisement for bids, the bidder shall be conclusively deemed to have read, understood and agreed with all of the information and materials contained in the bid documents, including but not limited to the standard specifications, the special provisions, the required nature and amount of insurance and the documentation evidencing said insurance.

By: _____
Marty Hanneman, P.E., City Engineer

Date: _____

BID REQUIREMENTS

1. Examination of Plans, Specifications, Special Provisions and Site of Work: The bidder is required to examine carefully the site of work contemplated and it will be assumed that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality and quantities of work to be performed and materials to be furnished and as to the requirements of the specifications, special provisions and the contract. It is mutually agreed that submission of a bid shall be considered prima facie evidence that the bidder has made such examination.
2. Bid Form: All bids must be made on the official bid forms included with the project plans and specifications as obtained from the Town or bid exchange plan-rooms. All bids must be signed by the bidder with bidders' business address.

If the bid is made by an individual, the individual's name and post office address must be shown. If made by a firm or partnership, then the name and post office address of each member of the firm or partnership must be shown. If made by a corporation, then the bid must show the name of the State under the laws of which the corporation is chartered and the name, titles and business addresses of the President, Secretary and Treasurer. A certification by the legal representative of the firm must be included in the bid.

3. Rejection of Bid Containing Alterations, Erasures or Irregularities: Bids may be rejected if they show any alterations of form, additions not called for, conditional or alternative bids, incomplete bids, erasures or irregularities of any kind.
4. The Bid may be withdrawn upon request by the bidder without prejudice prior to, but not after the time fixed for opening of bids provided that the request is in writing, has been executed by the bidder or the bidders duly authorized representative and is filed with the City Clerk.
5. Omissions and Discrepancies: If the bidder finds discrepancies in, or omissions on, the drawings, or other contract documents, or if bidder is in doubt as to their meaning, the bidder should notify the Town contact listed in the Notice Inviting Bids in writing, who may send a written instruction to all bidders.
6. Interpretations and Addenda: No oral interpretations shall be made to any bidder as to the meaning of any of the contract documents, or be effective to modify any of the provisions of the contract documents. Every request for an interpretation shall be made in writing and forwarded to the Town contact listed in the Notice Inviting Bids.
7. Bidder's Guaranty: All bids shall be presented under sealed cover and shall be accompanied by cashier's check, certified check, or bid bond made payable to the Town of Atherton for an amount equal to at least ten percent (10%) of the amount of said bid, and no bid shall be considered unless such cashier's check, certified check or bid bond is enclosed therewith. If a bidder uses a different bid bond form than that provided in this package, it must be the exact equivalent. If it is not, the bid shall be deemed non-responsive.

8. Return of Bid Guaranty: Within ten (10) days after the award of the contract, the Town will return the bid guaranties accompanying the bids, which are not to be considered in making the award. All other bid guaranties will be held until the contract has been finally executed, after which they will be returned to the respective bidders whose bids they accompany.
9. Award of Contract: The award of the contract, if it is awarded, will be to the lowest responsive and responsible bidder whose bid complies with all the requirements prescribed. The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items that are specifically identified in the bid solicitation as being used for the purpose of determining the lowest bid price. The award, if made, will be made within seventy five (75) working days after the opening of the bids. All bids will be compared on the basis of the estimated quantities of work to be done.
10. Execution of Contract: The contract and contract documents shall be signed by the successful bidder and returned together with the contract bonds, within ten (10) days, not including Sundays, after the bidder has received notice the contract has been awarded. No bid shall be considered binding upon the City until the execution of the contract. Failure to execute the contract and file acceptable bonds as provided herein within ten (10) days, not including Sundays, after the bidder has received notice that the contract has been awarded, shall be just cause for the annulment of the award and the forfeiture of the bid guaranty.
11. Sureties: The successful bidder shall also promptly secure with a responsible corporate surety or corporate sureties satisfactory bonds conditioned upon faithful performance by the said bidder of all the requirements under the contract and upon the payment of claims of any material workers and laborers thereunder.
12. Removal of Defective and Unauthorized Work: All work which is defective in its construction or deficient in any of the requirements of these specifications, special provisions or plans shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation will be allowed for such correction. Any work done beyond the lines and grades shown on the plans or established by the Director of Public Works, or his designee, or any extra work done without written authority will be considered as unauthorized and will not be paid for.
13. Upon failure on the part of the Contractor to comply with any order of the Director of Public Works, or his designee, made under these provisions, the Director of Public Works shall be the authority to cause defective work to be removed and to deduct the costs thereof from any monies due or to become due to the Contractor.
14. Final Inspection: Whenever the work provided and contemplated by the contract shall have been satisfactorily completed and the final clean up performed, the Director of Public Works, or his designee, will make the final inspection at the site.

15. Amount of Bonds: The faithful performance bond shall be in the sum of not less than one hundred percent (100%) of the contract price.

The bond for material workers and laborers shall be in an amount equal to not less than one hundred percent (100%) of the contract price. Form of bond required maybe examined at the office of the Director of Public Works; copies will be furnished, if desired, to prospective bidders.

Payment and Performance Bonds shall be executed by a California Admitted Surety insurer with a minimum Best's Insurance Guide rating of A+, Class VII.

Whenever any surety or sureties on any such bond, or on any bonds required by law for the protection of the claims of laborers and material workers, become insufficient or the City Council has cause to believe such surety or sureties have become insufficient, a demand in writing may be made of the Contractor for such further bond or bonds or additional surety, not exceeding that originally required, as is considered necessary, considering the extent of the work remaining to be done. Thereafter, no payment shall be made upon the contract to the Contractor or any assignee of the Contractor until such further bond or bonds or additional surety has been furnished.

16. Compliance with Laws and Regulations: No bid for work will be accepted from a Contractor who is not licensed in accordance with the law under the provisions of Chapter 9 of Division III, of the Business and Professions Code of the State of California, as amended. All bids submitted and all contracts awarded hereunder must be submitted, filed, made and executed in accordance with all applicable laws of the State of California and of the United States of America which relate to bids and contracts of the nature referred to herein, whether such laws are expressly referred to herein or not.
17. Each bidder shall submit with this bid a statement setting forth his/her/its experience and qualifications. The statement shall be made on the forms provided by the Town and must accompany each bid. The three lowest bidders will be required to submit Subcontractor's experience and qualifications statements within 48 hours of the bid opening, on forms provided by the Town.

END OF BID REQUIREMENTS

PART II. BIDDING DOCUMENTS

PROPOSAL TO THE TOWN OF ATHERTON

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM

PROJECT NO: 56080

Bid of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____, doing business as * _____ to the Town of Atherton.

*(Insert "a corporation, a partnership or an individual.")

In compliance with your Advertisement for Bids, the undersigned as BIDDER hereby proposes to perform all WORK for the construction of **SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM** in strict accordance with the Contract Documents therefore. BIDDER, declares and certifies that he has carefully examined the location of the proposed work, the proposed form of the Construction Contract, and the Plans, Specifications and Special Provisions and other Contract Documents referred to therein; that he proposes, and agrees if this Proposal is accepted, that he will contract with the Town of Atherton, in the form of the Construction Contract annexed hereto, to provide all necessary labor, machinery, tools, apparatus and other means of construction and to do all the work and furnish all the materials specified in the Construction Contract, in the manner and time therein prescribed and according to the requirements of the City Engineer as therein set forth, and that he will accept in full payment therefore for the unit prices set fourth in the annexed BID SCHEDULE.

BIDDER certifies to comply with the California Labor Code requirements and General Prevailing Wage Determinations made by the Director of Industrial Relations.

Accompanying this Bid is * _____

*(Insert "Cashier's Check," "Certified Check" or Bidder's Bond" as the case may be)

made out to the Town of Atherton, in an amount equal to at least ten percent (10%) of the total bid. If this proposal is accepted and the undersigned should fail to sign and return the Construction Contract, together with all bonds and insurance required by Sections 3.02 and 3.03 of the Standard Specifications within fifteen (15) working days of receipt of the Construction Contract, or fail to provide an acceptable schedule required by Section

6.03 of the Standard Specifications or an acceptable recycling plan required by section 16.02 of the Standard Specifications within twenty (20) working days of receipt of the Construction Contract, the Town may, at its option, determine that the BIDDER has abandoned the Contract. Thereupon this Proposal and the acceptance thereof shall be null and void, and the forfeiture of such bid security accompanying this Proposal shall operate and the same shall become the property of the Town of Atherton.

BIDDER hereby agrees to commence WORK under this contract within ten (10) working days of the date shown at the top of the NOTICE TO PROCEED and to fully complete the WORK within **seventy five (75)** working days from the FIRST DAY OF CONSTRUCTION as defined in the NOTICE TO PROCEED. BIDDER further agrees to pay as liquidated damages, the sum of **\$700** for each working day beyond the completion date deadline that the WORK has not been substantially completed, as provided in Section 6.06 of the Standard Specifications.

BIDDER acknowledges receipt of the following ADDENDUM:

BID SCHEDULE

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM PROJECT NO: 56080

NOTE: Bids shall include sales tax and all other applicable taxes and fees.

ITEM NO.	DESCRIPTION	EST. QTY	UNIT	UNIT COST	TOTAL
1	Mobilization	1	LS		
2	Traffic Control	1	LS		
3	No. 5 Pull Box	82	EA		
4	2" Conduit	10,935	LF		
5	3"Conduit	770	LF		
6	Post Top Fixture	12	EA		
7	Pendant Fixture	24	EA		
8	Paint 14' Post Top Pole	12	EA		
9	Paint 26' Pendant Pole	24	EA		
TOTAL					

Business name of BIDDER (print)

Date

Authorized signature of BIDDER

Business address (print)

Name of signer (print)

Telephone number

Title of signer (print)

Email address

Contractor's License Number

License Classification(s)

Contractor's License expiration date

Note: Corporations must, upon request, furnish certification attesting to corporate existence and authority of officers to sign contracts and other documents

NON-COLLUSION AFFIDAVIT

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM
PROJECT NO: 56080

This Affidavit to be fully executed by Bidder and submitted with the bid

STATE OF CALIFORNIA)
)ss.
COUNTY OF _____)

* _____, being first
 *[name]
duly sworn, deposes and says that he or she is * _____
*[President, Secretary, Manager, Owner or Representative]
of * _____, the party making the
 *[Name of Company or Corporation or Owner]

foregoing bid, that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

The undersigned declares under penalty of perjury under the laws of the State of California that the foregoing representations and all other representations made in the undersigned's proposal attached hereto are true and correct.

Signature of: President, Secretary,
Manager, Owner or Representative

BID BOND
TOWN OF ATHERTON

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM
PROJECT NO: 56080

KNOW ALL PERSONS BY THESE PRESENTS, that we,

_____ ,
as Bidder, and _____, as
Surety, are held and firmly bound unto the Town of Atherton, in the penal sum of
_____ dollars (\$_____), lawful money of the United States, which
sum is at least ten percent (10%) of the total amount bid by Bidder to the TOWN for the above
stated project, for the payment of which sum well and truly made, we bind ourselves, our heirs,
executors, administrations, and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above bound Bidder submits a bid to the TOWN
for the above referenced project (the terms and conditions of the bid are incorporated by
reference); and if said bid is rejected by the TOWN, or if said bid is accepted by the TOWN and
the Bidder executes all Contract Documents and provides all required bonds, insurance and
schedule, in the time and manner specified in the Town of Atherton Standard Specifications, then
this obligation shall become null and void; otherwise, it shall be and remain in full force and effect
in favor of the TOWN.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety
and its bond shall be in no way impaired or affected by any extension of the time within which the
TOWN may accept such Proposal; and said Surety does hereby waive notice of any such
extension.

In the event suit is brought upon this bond by the TOWN and judgment is recovered, the surety
shall pay all reasonable costs incurred by the TOWN, including reasonable attorney's fees to be
fixed by the court.

IN WITNESS WHEREOF, the undersigned represent and warrant that they have the right, power,
legal capacity and authority to enter into and execute this document on behalf of the above
bounded Bidder and Surety, and have set their names, titles and signatures hereon this
_____ day of _____, 2017.

BIDDER

SURETY

By _____
Address _____

By _____
Address _____

**Notary acknowledgments of Bidder and Surety must be attached, and Power of
Attorney for Surety attached.**

CONTRACTOR'S EXPERIENCE AND QUALIFICATION

To be submitted with bid

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM PROJECT NO: 56080

The following statement as to experience and qualifications of the Bidder is submitted in conjunction with the proposal, as a part thereof, and the truthfulness and accuracy of the information is guaranteed by the bidder.

The Bidder has been engaged in the contracting business under the present business name for ____ years. The experience of Bidder's Responsible Managing Officer or Responsible Managing Employee in work of a nature similar to that covered in the proposal extends over a period of _____ years.

The Bidder currently holds a valid Contractor's License of the following Class or Classes, _____ issued by the Contractor's License Board under the provision of Chapter 9 of Division 3 of the California Business and Professions Code.

The Bidder, as a Contractor, has never failed to satisfactorily complete a contract awarded to him, except as follows: (Name any and all exceptions and reasons therefore).

The following is a list of plant and equipment owned by the Bidder, and which is available for use on the proposed work as required.

<u>Quantity</u>	<u>Name, Type & Capacity</u>	<u>Condition</u>	<u>Location</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The following are the most recent projects on which the Bidder has performed work of similar nature, size and complexity, and the names, addresses and phone numbers of the contracting agencies. (Name at least four.)

PROJECT 1

Project name: _____

Location: _____, Owner's name: _____

Nature of project: _____

Completion date: _____, Contract time allotted: _____

Total project cost: \$ _____, Completed on time? _____

Nature of Bidder's participation: _____

Value of work performed by bidder's employees:

\$ _____

Name of Owner's representative: _____

Representative's address: _____

_____, Telephone number: _____

PROJECT 2

Project name: _____

Location: _____, Owner's name: _____

Nature of project: _____

Completion date: _____, Contract time allotted: _____

Total project cost: \$ _____, Completed on time? _____

Nature of Bidder's participation: _____

Value of work performed by bidder's employees:

\$ _____

Name of Owner's representative: _____

Representative's address: _____

_____, Telephone number: _____

CONTRACTOR'S EXPERIENCE AND QUALIFICATIONS (page 2 of 3)

PROJECT 3

Project name: _____

Location: _____, Owner's name: _____

Nature of project: _____

Completion date: _____, Contract time allotted: _____

Total project cost: \$ _____, Completed on time? _____

Nature of Bidder's participation: _____

Value of work performed by bidder's employees:

\$ _____

Name of Owner's representative: _____

Representative's address: _____

_____, Telephone number: _____

PROJECT 4

Project name: _____

Location: _____, Owner's name: _____

Nature of project: _____

Completion date: _____, Contract time allotted: _____

Total project cost: \$ _____, Completed on time? _____

Nature of Bidder's participation: _____

Value of work performed by bidder's employees:

\$ _____

Name of Owner's representative: _____

Representative's address: _____

_____, Telephone number: _____

Signed by Bidder _____

CONTRACTOR'S EXPERIENCE AND QUALIFICATIONS (page 3 of 3)

Public Contract Code Section 10285.1 Statement

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has ____, has not ____been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100.. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a checkmark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _____

If the answer is yes, explain the circumstances in the following space.

DESIGNATION OF SUBCONTRACTORS

To be submitted with bid

TOWN OF ATHERTON

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM

PROJECT NO: 56080

Pursuant to California Public Contract Code, Section 4100 et seq., the Advertisement for Bids and Sections 2.09 and 6.01 of the Town of Atherton Standard Specifications, the following list gives the name, Contractor's license number, business address, and description of work to be performed by each subcontractor that will perform work valued at one-half of one percent or more of the total bid amount if the Bidder is awarded the Contract. Contractors submitting the three lowest bids shall provide, within 48 hours of bid opening, references for each subcontractor named in the form that is attached. **[An inadvertent error in listing the license number shall not be grounds for filing a bid protest or considering the bid nonresponsive if the corrected license number is submitted to the Town of Atherton within 24 hours after the bid opening]**

Subcontractor's Name	Contractor License Number	Location of Business	Item No(s) or Description of work to be Performed
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Signed by Bidder _____

Attach additional sheets if needed

SUBCONTRACTORS' EXPERIENCE AND QUALIFICATIONS

To be submitted within 48 hours of bid opening by the three apparent lowest bidders.

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM PROJECT NO: 56080

The following statement as to experience of the Bidder's Subcontractors is submitted in conjunction with the proposal, as a part thereof, and the truthfulness and accuracy of the information is guaranteed by the bidder.

Subcontractor's name: _____ Years in Business: _____,
Licenses held: _____, \$ value of largest subcontract _____
Name, address and telephone number of owner's representatives on two recently completed comparable jobs:
(1) _____
(2) _____

Safety record: (Indicate EMR, RIR, & LTIR) _____

Subcontractor's name: _____ Years in Business: _____,
Licenses held: _____, \$ value of largest subcontract _____
Name, address and telephone number of owner's representatives on two recently completed comparable jobs:
(1) _____
(2) _____

Safety record: (Indicate EMR, RIR, & LTIR) _____

Subcontractor's name: _____ Years in Business: _____,
Licenses held: _____, \$ value of largest subcontract _____
Name, address and telephone number of owner's representatives on two recently completed comparable jobs:
(1) _____
(2) _____

Safety record: (Indicate EMR, RIR, & LTIR) _____

ADDENDA

This Proposal is submitted with respect to the changes to the contract included in addenda number/s

(Fill in addenda numbers if addenda have been received and insert, in this Proposal, any Engineer's Estimate sheets that were received as part of the addenda.)

By my signature on this proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this proposal I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106; and the Title 49 Code of Federal Regulations, Part 29 Debarment and Suspension Certification are true and correct.

Date: _____



Signature and Title of Bidder

Business Address _____

Place of Business _____

Place of Residence _____

PART III. AGREEMENT FOR CONSTRUCTION SERVICES

SAMPLE

[Contractor's Name]
[and Address]
[]

RE: NOTICE OF AWARD OF CONSTRUCTION CONTRACT

PROJECT: **SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM**
PROJECT NO: 56080

Dear **[Contractor's Name]**:

The Atherton City Council awarded the contract for project number xxxxx to **[Contractor's Name]** on **[Date]**.

In accordance with the Bid Documents, the Contractor shall properly execute and deliver to the City Engineer/Public Works all of the Award Documents 1 through 8 listed. Unless documents 1 through 6 are delivered within fifteen (15) working days of this Notice of Award and documents 7 and 8 are delivered within twenty (20) working days of this Notice of Award, the award of contract may be voided by the Town, in which case the Bid Bond submitted by the Contractor will be forfeited to the Town.

1. Construction Contract (signed and notarized)
2. Faithful Performance Bond and Payment Bond
3. Workers' Compensation Insurance Certification
4. Certificate of Liability Insurance and Owner's Endorsement
5. Town Business License
6. W-9 Request for Federal Tax Identification
7. Critical path progress schedule conforming to the provisions of Section 6.03 of the Standard Specifications
8. Recycling Plan conforming to the provisions of Section 16.02 of the Standard Specifications

Please return the two signed copies of the Construction Contract, with the date on page 1 left blank. It will be filled in by the City Manager on the date that the Town executes the Agreement. The contract for this project will not be binding upon the Town until the Construction Contract has been properly executed by both the Contractor and the Town.

When surety bonds are used as security, the surety's Attorney in Fact must attach a current Power of Attorney to the bonds. The signature of the Attorney in Fact shall be notarized. Surety bonds shall be duly executed by a responsible corporate surety, authorized to issue such bonds in the State of California. The faithful performance and payment bonds shall be in a sum not less than required by Section 3.02 of the Standard Specifications, in the forms that are attached. Bonds must be issued by a bond company admitted by the California Department of Insurance to transact business in the State and having a Best's Credit rating of at least A+. The performance bond will be maintained

throughout the one-year guarantee period that follows acceptance, during which time the bond amount will be reduced to ten percent of the final contract price.

Your attention is directed to Section 3.03 of the Standard Specifications regarding insurance form and content. **Certificates of Insurance are not acceptable** in lieu of originals or certified copies of insurance policies or endorsements bearing original signatures of authorized individuals. Please make your insurance representative aware of the specific language required by the specifications.

Should any bond, security, or insurance policy be canceled or become unsatisfactory to the Town, notice will be given to the Contractor to that effect, and the City Engineer may issue a Stop Work Notice to suspend the Contractor's performance until a satisfactory substitute is posted by the Contractor. No further payments will be deemed due or will be made under the Contract until a satisfactory substitute is posted by the Contractor.

In addition to award documents, before starting work, the Contractor shall submit the following to the City Engineer/Public Works:

- A. Designation in writing of an authorized representative who shall have complete authority to act on behalf of the Contractor for this project, including the authority to execute contract change orders, and designation in writing of a person or persons who shall be at the project site and be in control of all work at any time that work is being performed, and who shall receive any communications and correspondence from the Town, on behalf of the Contractor.
- B. A program to control water pollution and erosion during construction of the project, fulfilling the requirements of Section 14.03 of the Standard Specifications or a request for a waiver pursuant to Section 14.04.

Within ten (10) working days after the Contractor has properly executed and delivered all Award Documents and prior to issuing the Notice to Proceed, the City Engineer will schedule a pre-construction meeting with the Contractor to arrange utility coordination, discuss construction methods, and clarify procedures for inspection of work and transmittal of documents. Please contact the City Engineer in order to set the date for the pre-construction meeting, coordinate the proposed construction schedule, and facilitate delivery of executed Award Documents.

Sincerely,

Marty Hanneman, P.E.
City Engineer

TOWN OF ATHERTON

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM

PROJECT NO: 56080

Faithful Performance Bond

KNOW ALL MEN BY THESE PRESENTS, THAT WHEREAS, the Town of Atherton has, on the _____ day of _____, 2017, awarded to _____

_____ hereinafter designated as the "Contractor", a contract for the construction of **SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM**; and

WHEREAS, said Contractor is required under the terms of said construction contract to furnish a bond for the faithful performance of said contract;

NOW, THEREFORE, we, the Contractor, and

_____ as Surety, are held and firmly bound unto the TOWN the penal sum of _____ dollars (\$_____) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bounden Contractor, his or her heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions and agreements in the said contract and any alterations made as therein provided, on his, her or their part to be kept and performed, at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the TOWN, its officers and agents as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

It is acknowledged that the construction contract provides for one-year guarantee period, during which time this bond remains in full force and effect.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall, in any way, affect its obligations on this Bond, and it does hereby waive notice of any change, extension of time, alteration, or addition to the terms of the contract or to the work or to

the specifications. Said Surety hereby waives the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their seals this __ day of _____, 2017, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM
PROJECT NO: 56080

CONTRACTOR

SURETY

By _____

Address:

Address:

Telephone

Telephone

Notary Acknowledgments of Contractor and Surety must be attached.

TOWN OF ATHERTON

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM
PROJECT NO: 56080

Labor and Materials Payment Bond

KNOW ALL MEN BY THESE PRESENTS, THAT WHEREAS, the Town of Atherton has,
on the _____ day of _____, 2017, awarded to

, hereinafter designated as the "Contractor", a construction contract for the construction
of **SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM** ; and

WHEREAS, said Contractor is required to furnish a bond in connection with said contract
providing that if said Contractor, or any of his, her or its subcontractors, shall fail to pay
for any material, provisions, or other supplies used in, upon, for, or about the performance
of the work contracted to be done, or for any work or labor done thereon of any kind, the
Surety of this bond will pay the same to the extent hereinafter set forth:

NOW, THEREFORE, we, the Contractor, and

as Surety, are held and firmly bound unto the TOWN the penal sum of
_____ dollars (\$_____) lawful money
of the United States, for the payment of which sum well and truly to be made, we bind
ourselves, our heirs, executors, administrators, and successors, jointly and severally,
firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his/her/its heirs,
executors, administrators, successors or assigns, or its subcontractors, shall fail to pay
(1) any of the persons named in Section 3181 of the Civil Code, (2) amounts due under
the Unemployment Insurance Code with respect to work or labor performed under the
contract, or (3) for any amounts required to be deducted, withheld, and paid over to the
Employment Development Department from the wages of employees of the contractor
and subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with
respect to the work and labor, that the surety will pay for same and also will pay, in case
suit is brought upon this bond, a reasonable attorney's fee in such suit, which fee shall be
fixed by the Court.

This bond and all its provisions shall inure to the benefit of and all persons named in
Section 3181 of the Civil Code so as to give a right of action to such persons or their
assigns in any suit brought upon this bond.

This bond is given to comply with the provisions of Chapter 7, Part 4, Division 3, of the Civil Code. The liability of the Principal and Surety hereunder is governed by the provisions of said Chapter, all acts amendatory thereof, and all other statutes referred to therein.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall, in any way, affect its obligations on this Bond, and it does hereby waive notice of any change, extension of time, alteration, or addition to the terms of the contract or to the work or to the specifications. Said Surety hereby waives the provisions of Sections 2819 and 2845 of the Civil Code of the State of California.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their seals this ___ day of _____, 2017, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM
PROJECT NO: 56080

CONTRACTOR

SURETY

By _____

Address: _____

Address: _____

Telephone

Telephone

Notary Acknowledgments of Contractor and Surety must be attached.

SAMPLE

CERTIFIED MAIL

[Dated]

[Contractor's]
[Name and]
[Address]

RE: NOTICE TO PROCEED
PROJECT: **SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM**
PROJECT NO: 56080

Dear [Contractor's Name]:

You are hereby notified to start work on the above referenced project in accordance with the Construction Contract dated the **[date on the face of the Agreement]** within ten (10) working days from the date at the top of this letter. [Contractor may not begin work until TOWN has received and approved all bonds and evidence of insurance.](#) The first day of the contract time will be the first day on which work is actually performed or ten (10) working days from the date at the top of this letter, whichever is first.

Time is of the essence in the performance of work under these Contract Documents and all timing requirements shall be strictly adhered to unless otherwise modified by the TOWN, in accordance with the Contract Documents.

You are required by the terms of the Contract Documents to perform diligently and continuously in order to complete all work in every detail to the satisfaction of the TOWN within seventy five (75) working days after the first day of construction.

Sincerely,

Marty Hanneman, P.E.
City Engineer

GUARANTEE

TOWN OF ATHERTON
SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM
PROJECT NO: 56080

Project Description:

Coordinate with PG&E to disconnect existing series circuit power and connect 120V power, remove and dispose of existing street light fixtures, paint existing electroliers, furnish and install new LED streetlight fixtures, install conduit and conductors, miscellaneous connectors as needed to form a fully functional lighting system.

Date of Acceptance:

We hereby guarantee that the work we have installed for the Town has been done in accordance with the approved Contract Documents and that the work as installed will fulfill the requirements of the guarantee. We agree to repair or replace any or all of the work, together with any other adjacent damages resulting from our work, that may prove to be defective in its workmanship or material within a period of ONE YEAR from the date of acceptance of the above-named work by Town without any expense whatsoever to the Town, ordinary wear and tear and unusual abuse or neglect excepted.

Within fifteen (15) days after being notified in writing by Town of any defects in the work, we agree to commence and prosecute with due diligence all work necessary to fulfill the terms of this guarantee, and to complete the work within a reasonable period of time (not to exceed twenty (20) days after commencement of the repair work); and in the event of our failure to so comply, we collectively and separately, do hereby authorize said Town to proceed to have such work done at our expense and we will honor and pay the cost and charges therefore upon demand.

DATED: _____

Contractor

BY: _____

Title: _____

(To be signed and notarized before acceptance of project).

PART IV. SPECIAL PROVISIONS

SPECIAL PROVISIONS

TOWN OF ATHERTON

SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM
PROJECT NO: 56080

100 - CONTRACT DOCUMENTS

All work shall be governed by and done in accordance with the following contract documents:

- A. Those documents, numbers 1 through 14, listed in Section 1.01 of the Standard Specifications
- B. Plans entitled SERIES CIRCUIT STREET LIGHT REPLACEMENT PROGRAM, consisting of 5 sheets prepared by W-Trans dated December 2015, these Special Provisions, Technical Specifications, and Addenda, if any.

Any and all work and requirements called for in any one or more of the above listed or referenced documents shall be deemed to be called for in all.

These Special Provisions shall govern over conflicting provisions and requirements of the Standard Specifications and Drawings.

In the event of any conflict, doubt, or questions arising with respect to the true meaning of the above listed documents, reference shall be made to the City Engineer and his decision shall be final.

101 - GENERAL DESCRIPTION OF WORK

The work shall consist of:

Coordinate with PG&E to disconnect existing series circuit power and connect 120V power, remove and dispose of existing street light fixtures, paint existing electroliers, furnish and install new LED streetlight fixtures, install conduit and conductors, miscellaneous connectors as needed to form a fully functional lighting system.

The stages to be performed are as followed:

- I. Project Submittals – Including but not limited to Cost Breakdown, Product Submittals, Project schedule, etc.
- II. Order Materials – Proof of ordering materials shall be submitted within three days of receipt of approved submittals from the City.
- III. Coordination with PG&E
- IV. Jobsite preparation – includes public notifications, covering appurtenances, vegetation clearance, removal of conflicting raised pavement markers, signage and thermoplastic pavement markings, guard rail (if necessary and to be replaced) and sweeping .
- V. Traffic control
- VI. Removal of existing street light fixtures
- VII. Installation of new street lighting systems

The unit price bid for each item shall be full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in the bid item.

102 - BEGINNING OF WORK

The Contractor shall provide Project Submittals within ten (10) work days following the date of the City Engineer's Notice to Proceed. The first day on which on-site labor is performed or ten (10) working days after the date of the Notice to Proceed, whichever is sooner, shall be considered the first day of construction for the purpose of counting working days. Contractor shall start work on site within five (5) working days of receiving the material. Contractor shall not perform any on-site labor until Owner has received and approved Contractor's evidence of insurance and payment and performance bonds, and the required submittals.

Construction shall not begin until all material and equipment (including State and Town Furnished material) is on site.

103 - TIME FOR COMPLETION

The time allowed for completion of the work shall be seventy five (75) working days.

104 - LIQUIDATED DAMAGES

The Contractor acknowledges that the actual damages likely to result from breach of Section 103 will be difficult to estimate on the date of this Agreement and would be difficult for Town to prove. The parties intend that Contractor's payment of the Liquidated Damages Amount would serve to compensate Town for any breach by Contractor of its obligations under Section 103, and they do not intend for it to

serve as punishment for any such breach by Contractor. Therefore, the parties agree that if the work required under this contract is not completed within the time specified for completion, as adjusted in accordance with the Contract Documents, Liquidated Damages in the amount of \$700.00 per working day shall be assessed as set forth in Section 6.06 of the Standard Specifications.

105 – CONSTRUCTION SCHEDULE

The Contractor shall provide the Town of Atherton with a construction schedule. Construction schedule shall include the date of work and task performed. Work not completed as scheduled for any reason, except for Act of Nature or force majeure, shall incur an administrative penalty and the Contractor shall be required. In the event of Act of Nature or Force Majeure, the work shall continue after the event and shall be no earlier than two (2) days from the previous scheduled date to allow for proper re-notification per section 202 of these special provisions.

201 - JOBSITE PREPARATION

Prior to the removal of existing street light fixtures in each neighborhood, the Contractor shall post a temporary sign at each street light pole as required by the General notes in the project plans. Contractor shall trim tree branches or shrubs as may be necessary to complete the work.

When removing the raised pavement markers the Contractor shall remove any adhesive left on pavement caused from the removal of raised pavement markers. Any pavement damage (potholes) caused by removing raised pavement markers shall be filled.

Low planting that overhangs the work area shall be cut back neatly where it is out of the way, before removing existing fixtures, painting poles, or installing new street light fixtures. Branches and limbs of trees and bushes that are likely to be hit or damaged by the construction process shall be cut back in accordance with section 73 of the Atherton Standard Specifications, before installing pedestrian hybrid beacons and constructing pedestrian landing area.

The Contractor shall refrain from using diesel fuel, gasoline or solvents of any kind for cleaning tools and equipment in such a manner as to permit spillage of the diesel fuel or solvent on new or existing pavement, curbs and gutters, parkways or other improved areas.

202 - NOTIFICATION

At least **seven (7) days** prior to the beginning of construction, the Contractor shall notify the adjacent affected property owners, residents, businesses and agencies by an approved, written notice detailing the work to be completed, the projects schedule and the hours of work.

The Contractor shall refer to the Caltrans Standards and Town of Atherton Plans and Specifications manual (revised April 2000) to reference all requirements for traffic control, notifications, material specifications, hours of work and any other Town of Atherton specific requirements.

Contractor shall furnish a computer generated schedule for the work, listing the dates on which task will affect traffic. The Contractor shall adhere diligently to said schedule in the prosecution of the work. The Contractor must submit a traffic control plan for the project to the Engineer for approval prior to commencing with the project.

All revisions shall be marked clearly and notes shall be in red and be clear and legible.

203 - TRAFFIC CONTROL

The Contractor shall furnish and maintain in good working order all barricades and flashers, and provide flagmen as necessary to protect public and traffic. The Contractor shall maintain business and property access as practicable as possible. The Traffic Control shall conform to Caltrans traffic control requirements and working hours as specified in their encroachment permit for the project area.

The Contractor shall furnish, install, and maintain all barricades and direction signs necessary to accomplish the above traffic restrictions. All safety devices, their maintenance, and use shall conform to the latest requirements of OSHA and shall conform to the applicable provisions of the "Work Area Traffic Control Handbook," California State Traffic Manual of Traffic Controls for Construction and Maintenance Work Zones, and the "Manual on Uniform Traffic Control Devices". It shall be the complete responsibility of the Contractor to protect persons from injury and to avoid property damage. Adequate barricades, construction signs, flashers, and other such safety devices, as required, shall be placed and maintained during the progress of the construction work until the project is completed. Whenever required, flagmen shall be provided to control traffic.

The Contractor shall provide adequate and continuous ingress and egress for vehicles and pedestrian traffic in a manner that will hold congestion and delay of such traffic to a practicable minimum by furnishing, installing, and maintaining all necessary temporary signs, barricades, and other devices and facilities as approved by the Engineer. As the work progresses, the Contractor shall relocate such devices and facilities as necessary to maintain proper routing. Unless otherwise specified, upon conclusion of the need, the Contractor shall remove all temporary traffic routing devices and facilities from the work site. On multi-lane, collector and arterial roadways, the Contractor shall provide a minimum of one through lane in each direction of travel or as specified by Caltrans for the project area.

Lane closures are allowed only during normal working hours as approved by the City Engineer. Any extended hours required by the Contractor shall be approved by the City Engineer. Within the “normal working hours,” the Contractor shall place or remove the necessary traffic barricades, move equipment either on or off the job site, perform all installation of pedestrian hybrid beacons and construction of pedestrian landing area.

204 – MOBILIZATION

Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; and for all other work (including the cost of obtaining an encroachment permit from Caltrans, and replacing the guardrail in kind) and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site.

205 – EROSION CONTROL

Erosion control and water pollution control shall conform to the requirements in Section 7-1.01G of the Standard Specifications, Section 13, “Water Pollution Control”, of the Caltrans Specifications, these Special Provisions, and as directed by the Engineer.

206 – STREET LIGHT FIXTURES

Luminaires to be installed shall be selected from the list of pre-approved products:
Tear-Drop/Pendant Fixtures:

1. Philips Lumec, MSR-8048LED4K-T-LE3WF-UNIV-SMB-DH-RCD-BKTX, B2-U0-G2 RATING
2. Philips/Hadco TXF948-2HNA3KL-R-12
3. King K804-P4RAD-III-75/100(SSL)-8060-120:277-COLOR4000 (Note, subject to getting PG&E approval)
4. Acuity/Holophane MPL-110-4K-AS-X-4
5. Cree BXSP-B2MEA-40K

Post Top Fixtures:

1. Philips/Hadco RL34 3V 4K L64 3 SN-14
2. Acuity/Holophane WSE-80-5K-AS-X-3-X

Luminaires shall be furnished with a photo cell.

Section 86-6.02 includes specifications for installing LED luminaires.

86-6.02A(2) Definitions

CALiPER: Commercially Available LED Product Evaluation and Reporting. A U.S. DOE program that individually tests and provides unbiased information on the performance of commercially-available LED luminaires and lights.

Correlated color temperature: Absolute temperature in kelvin of a blackbody whose chromaticity most nearly resembles that of the light source.

House side lumens: Lumens from a luminaire directed to light up areas between

the fixture and the pole, such as sidewalks at intersection or areas off the shoulders on freeways.

International Electrotechnical Commission (IEC): Organization that prepares and publishes international standards for all electrical, electronic, and related technologies.

Junction temperature: Temperature of the electronic junction of the LED device. The junction temperature is critical in determining photometric performance, estimating operational life, and preventing catastrophic failure of the LED.

L70: Extrapolated life in hours of the luminaire when the luminous output depreciates 30 percent from initial values.

LM-79: Test method from the Illumination Engineering Society of North America specifying test conditions, measurements, and report format for testing solid state lighting devices, including LED luminaires.

LM-80: Test method from the Illumination Engineering Society of North America specifying test conditions, measurements, and report format for testing and estimating the long-term performance of LEDs for general lighting purposes.

National Voluntary Laboratory Accreditation Program (NVLAP): U.S. DOE program that accredits independent testing laboratories.

Power factor: Ratio of the real power component to the complex power component.

Street side lumens: Lumens from a luminaire directed to light up areas between the fixture and the roadway, such as traveled ways and freeway lanes.

Surge protection device (SPD): Subsystem or component that protects the unit against short-duration voltage and current surges.

Total harmonic distortion: Ratio of the rms value of the sum of the squared individual harmonic amplitudes to the rms value of the fundamental frequency of a complex waveform.

86-6.02A(3) Submittals

Product submittals must include:

1. LED luminaire checklist.
2. Product specification sheets, including:
 - 2.1. Maximum power in watts.
 - 2.2. Maximum designed junction temperature.
 - 2.3. Heat sink area in square inches.
 - 2.4. Designed junction to ambient thermal resistance calculation with thermal resistance components clearly defined.
 - 2.5. L70 in hours when extrapolated for the average nighttime operating temperature.
3. LM-79 and LM-80 compliant test reports from a CALiPER-qualified or NVLAP-approved testing laboratory for the specific model submitted.
4. Photometric file based on LM-79 test report.
5. Initial and depreciated isofootcandle diagrams showing the specified minimum illuminance for the particular application. The diagrams must be calibrated to feet and show a 40 by 40 foot grid. The diagrams must be calibrated to the mounting height specified for that particular application. The depreciated isofootcandle diagrams must be calculated at the minimum operational life.

6. Test report showing SPD performance as tested under ANSI/IEEE C62.41.2 and ANSI/IEEE C62.45.
7. Test report showing mechanical vibration test results as tested under California Test 611 or equal.
8. Data sheets from the LED manufacturer that include information on life expectancy based on junction temperature.
9. Data sheets from the power supply manufacturer that include life expectancy information.

Submit documentation of a production QA performed by the luminaire manufacturer that:

1. Ensures the minimum specified performance level
2. Includes a documented process for resolving problems

Submit the QA documentation as an informational submittal.

Submit the manufacturer's warranty documentation as an informational submittal before installing LED luminaires.

86-6.02A(4) Quality Control and Assurance

86-6.02A(4)(a) General

The Town may test random samples of the luminaires under section 86-2.14A, and under California Test 678 and may test any parameters specified in section 86-6.01. ***Costs of testing may be deducted from funds owed to the Contractor.***

Fit 1 sample luminaire with a thermistor or thermocouple temperature sensor. A temperature sensor must be mounted on the:

1. LED solder pad as close to the LED as possible
2. Power supply case
3. Light bar or modular system as close to the center of the module as possible

Other configurations must have at least 5 sensors per luminaire. The Engineer provides advice on sensor location. Thermocouples must be either Type K or C. Thermistors must be a negative-temperature-coefficient type with a nominal resistance of 20 k Ω . Use the appropriate thermocouple wire. The leads must be a minimum of 6 feet. Submit documentation with the test unit describing the type of sensor used.

Before performing any testing, energize the sample luminaires for a minimum of 24 hours at 100 percent on-time duty cycle and a temperature of +70 degrees F. Depreciate the luminaire lighting's performance for the minimum operating life by using the LED manufacturer's data or the data from the LM-80 test report, whichever results in a higher lumen depreciation.

Failure of the luminaire that renders the unit noncompliant with section 86-6.02 specifications is cause for rejection.

86-6.02A(4)(b) Warranty

Provide a 7-year manufacturer's warranty against any defects or failures. The warranty period begins on the date of Contract acceptance. Furnish a replacement luminaire within 10 days after receipt of the failed luminaire. The Town does not

pay for the replacement. Deliver replacement luminaires to the Town of Atherton Maintenance Shop.

86-6.02B Materials

86-6.02B(1) General

The luminaire must include an assembly that uses LEDs as the light source. The assembly must include a housing, an LED array, and an electronic driver. The luminaire must:

1. Be UL listed under UL 1598 for luminaires in wet locations or an equivalent standard from a recognized testing laboratory
2. Have a minimum operational life of 63,000 hours
3. Operate at an average operating time of 11.5 hours per night
4. Be designed to operate at an average nighttime operating temperature of 70 degrees F
5. Have an operating temperature range from -40 to +130 degrees F
6. Be defined by the following applications:

Application	Replaces
Roadway 1	200 W high-pressure sodium luminaire mounted at 34 ft

The individual LEDs must be connected such that a catastrophic loss or a failure of 1 LED does not result in the loss of more than 20 percent of the luminous output of the luminaire.

86-6.02B(2) Luminaire Identification

Each luminaire must have the following identification permanently marked inside the unit and outside of its packaging box:

1. Manufacturer's name
2. Trademark
3. Model number
4. Serial number
5. Month and year of manufacture
6. Lot number
7. Contract number
8. Rated voltage
9. Rated wattage
10. Rated power in VA

86-6.02B(3) Electrical Requirements

The luminaire must operate from a 60 ± 3 Hz AC power source. The fluctuations of line voltage must have no visible effect on the luminous output. The operating voltage may range from 120 to 480 V(ac). The luminaire must operate over the entire voltage range or the voltage range must be selected from either of the following options:

1. Luminaire must operate over a voltage range of 95 to 277 V(ac). The operating voltages for this option are 120 V(ac) and 240 V(ac).
2. Luminaire must operate over a voltage range of 347 to 480 V(ac). The

operating voltage for this option is 480 V(ac).

The power factor of the luminaire must be 0.90 or greater. The total harmonic distortion, current, and voltage induced into an AC power line by a luminaire must not exceed 20 percent. The maximum power consumption allowed for the luminaire must be as shown in the following table:

Application	Maximum consumption (watts)
Roadway 1	165

86-6.02B(4) Surge Suppression and Electromagnetic Interference

The luminaire's on-board circuitry must include an SPD to withstand high repetition noise transients caused by utility line switching, nearby lightning strikes, and other interferences. The SPD must protect the luminaire from damage and failure due to transient voltages and currents as defined in Tables 1 and 4 of ANSI/IEEE C64.41.2 for location category C-High. The SPD must comply with UL 1449. The SPD must be tested under ANSI/IEEE C62.45 based on ANSI/IEEE C62.41.2 definitions for standard and optional waveforms for location category C-High.

The luminaires and associated on-board circuitry must comply with the Class A emission limits under 47 CFR 15, subpart B, for the emission of electronic noise.

86-6.02B(5) Compatibility

The luminaire must be operationally compatible with currently-used lighting control systems and photoelectric controls.

86-6.02B(6) Photometric Requirements

The luminaire must maintain a minimum illuminance level throughout the minimum operating life. The L70 of the luminaire must be the minimum operating life or greater. The measurements must be calibrated to standard photopic calibrations. The minimum maintained illuminance values measured at a point must be as shown in the following table:

Application	Mounting height (ft)	Minimum maintained illuminance (fc)	Light pattern figure (isofootcandle curve)
Roadway 1	34 (Pendant)	0.15	Pattern defined by an ellipse with the equation: $\frac{x^2}{(82)^2} + \frac{(y - 20)^2}{(52)^2} = 1$
Varies	14 (Post-top)		where: x = direction

			longitudinal to the roadway y = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 20 feet to the house side of the pattern.
--	--	--	--

The luminaire must have a correlated color temperature range from 3,700 to 4,300 K. The color rendering index must be 65 or greater.

The luminaire must not allow more than:

1. 10 percent of the rated lumens to project above 80 degrees from vertical
2. 2.5 percent of the rated lumens to project above 90 degrees from vertical

86-6.02B(7) Thermal Management

The passive thermal management of the heat generated by the LEDs must have enough capacity to ensure proper operation of the luminaire over the minimum operation life. The LED maximum junction temperature for the minimum operation life must not exceed 221 degrees F.

The junction-to-ambient thermal resistance must be 95 degrees F per watt or less. The use of fans or other mechanical devices is not allowed. The heat sink material must be aluminum or other material of equal or lower thermal resistance.

The luminaire must contain circuitry that automatically reduces the power to the LEDs so the maximum junction temperature is not exceeded when the ambient outside temperature is 100 degrees F or greater.

86-6.02B(8) Physical and Mechanical Requirements

The luminaire must:

1. Be a single, self-contained device not requiring job-site assembly for installation
2. Have an integral power supply
3. Weigh no more than 35 pounds
4. Have a maximum-effective projected area of 1.4 square feet when viewed from either side or end
5. Have a housing color that matches color number from 14062, Dark Green, of FED-STD-595.

The housing must be fabricated from materials designed to withstand a 3,000-hour salt spray test under ASTM B 117. All aluminum used in housings and brackets must be made of a marine-grade alloy with less than 0.2 percent copper. All exposed aluminum must be anodized.

Each refractor or lens must be made from UV-inhibited high-impact plastic such as acrylic or polycarbonate or heat- and impact-resistant glass and be resistant to scratching. Polymeric materials except lenses of enclosures containing either the

power supply or electronic components of the luminaire must be made of UL94VO flame retardant materials. The housing's paint must comply with section 86-2.16. A chromate conversion undercoating must be used underneath a thermoplastic polyester powder coat.

Provide each housing with a slip fitter capable of mounting on a 2-inch pipe tenon. This slip fitter must fit on mast arms with outside diameters from 1-5/8 to 2-3/8 inches. The slip fitter must be capable of being adjusted a minimum of ± 5 degrees from the axis of the tenon in a minimum of 5 steps: +5, +2.5, 0, -2.5, -5. The clamping brackets of the slip fitter must not bottom out on the housing bosses when adjusted within the designed angular range. No part of the slip fitter's mounting brackets must develop a permanent set in excess of 1/32 inch when the bracket's two or four 3/8-inch-diameter cap screws are tightened to 10 ft-lb. Two sets of cap screws may be furnished to allow the slip fitter to be mounted on the pipe tenon in the acceptable range without the cap screws bottoming out in the threaded holes. The cap screws and the clamping brackets must be made of corrosion-resistant materials or treated to prevent galvanic reactions and be compatible with the luminaire housing and the mast arm.

The LED luminaire must be assembled and manufactured such that its internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources. When tested under California Test 611, the luminaire to be mounted horizontally on the mast arm must be capable of withstanding the following cyclic loading for a minimum of 2 million cycles without failure of any luminaire part:

Cyclic Loading

Plane	Power supply	Minimum peak acceleration level
Vertical	Installed	3.0 g peak-to-peak sinusoidal loading (same as 1.5 g peak)
Horizontal ^a	Installed	1.5 g peak-to-peak sinusoidal loading (same as 0.75 g peak)

^aPerpendicular to the direction of the mast arm

The housing must be designed to prevent the buildup of water on top of the housing. Exposed heat sink fins must be oriented to allow water to freely run off of the luminaire and carry dust and other accumulated debris away from the unit. The optical assembly of the luminaire must be protected against dust and moisture intrusion to at least an ANSI/IEC rating of IP66. The power supply enclosure must be protected to at least an ANSI/IEC rating of IP43.

Furnish each mounted luminaire with an ANSI C136.41-compliant, locking-type photocontrol receptacle with dimming connections and a raintight shorting cap. The receptacle must comply with section 86-6.11A.

When the components are mounted on a down-opening door, the door must be hinged and secured to the luminaire housing separately from the refractor or flat lens frame. The door must be secured to the housing such that accidental opening is prevented. A safety cable must mechanically connect the door to the housing.

Field wires connected to the luminaire must terminate on a barrier-type terminal block secured to the housing. The terminal screws must be captive and equipped with wire grips for conductors up to no. 6. Each terminal position must be clearly identified.

The power supply must be rated for outdoor operation and have at least an ANSI/IEC rating of IP65.

The power supply must be rated for a minimum operational life equal to the minimum operational life of the luminaire or greater.

The power supply case temperature must have a self-rise of 77 degrees F or less above ambient temperature in free air with no additional heat sinks.

The power supply must have 2 leads to accept standard 0-10 V(dc). The dimming control must be compatible with IEC 60929. If the control leads are open or the analog control signal is lost, the circuit must default to 100-percent power.

Conductors and terminals must be identified.

207 – POLE PAINTING

The pole and all other previously painted metal surfaces shall be prepared for painting. All loose paint, concrete, dirt, oil, grease, posters, and handbills shall be removed. All rust shall be removed and sanded to a smooth surface prior to the application of the primer coat.

Street light fixtures shall be removed during preparation and painting.

Coatings shall be applied only to clean, dry, and properly prepared (per manufacturer's data) electroliers. Minor cleanup, removal, and disposal of incidental bush and tree trimmings and debris may also be necessary and should be considered when preparing a bid.

All painting shall be accomplished using a two-part epoxy / polyurethane system consisting of equivalent High solids epoxy primer and Federal Color Standard 14062, Dark Green, (Note to Town staff, Federal green per <http://www.federalstandardcolor.com/>) Polyurethane top coat (or approved equal). The rate of application shall be as recommended by the manufacturer. Sufficient coats shall be applied to completely hide base materials, produce uniform color, and provide satisfactory finish results. All materials shall be applied evenly with proper thickness and free of runs, sags, skips, and other defects.

Whether spraying, brushing, rolling, or preparing the surface, the contractor shall be responsible for protecting all property and persons during the painting process. No painting shall be done in rain, fog, when precipitation is imminent or when the temperature is below 45°F or above 100°F including surface temperatures. All glassware shall be masked before applying paint to the electrolier. The base of the electrolier shall be masked to prevent runs and drips to the sidewalk.

Workmanship: Coating shall be applied in thickness' not to exceed manufacturers printed instructions. All coats shall be evenly spread and free of defects. All coats

shall have no ridges, sags, variations in texture, color, or finish. Any finish showing dust, deposits, or impurities shall be removed and/or refinished.

208 – STREET LIGHTING

Furnishing and installing street lighting shall conform to the latest applicable provisions of the Caltrans, California MUTCD, and Town of Atherton Standard Specifications and Plans and these Special Provisions.

Street lighting work is to be performed at the locations shown on the Plans. Work or equipment not specified or shown on the Plans which is necessary for the proper operation of the work in this section shall be provided and installed at no additional cost to the Town.

Any Contractor-requested change from approved Plans and all Specifications shall be made in writing to the Town. No changes shall be made in the field without written approval of requested changes by the Town.

The Contractor is responsible to take all necessary precautions and use best practices in the industry to perform all work require completing the project.

Conduit

Conduit shall conform to the provisions in Section 86 2.05, "Conduit," of the Caltrans Specifications and these Special Provisions.

All Conduits shall be Poly Vinyl Chloride (PVC), Schedule 40. IMC conduit shall not be accepted. With the exception for bends to and from pull boxes and foundations the conduit shall run straight and true so that cable pulling forces are minimized. There shall be no more than 180 degree in bends. An intermediate pull box can be installed to relieve the need for additional bends at the Contractor's cost.

Insulated bonding bushings will be required on metal conduit. All nonmetallic conduits shall have a No.8 stranded (with green insulation) copper bounded/grounding wire. These bounding/grounding wires shall be connected in the pull box with cable connectors - Burndy-Servit No. KS -15 or approved equal meeting Caltrans specifications.

Conduits into pull boxes and pole foundations shall be rigid metal and have 90-degree sweeps. Plastic pulling bells shall be installed on all conduit ends before conductors are pulled through the conduits.

Sawcutting shall be included in the installation of conduits.

All excavated areas in the street or sidewalk shall be completely backfilled or covered at the end of each working day and approved by the Engineer.

Where existing conduits are to be reused, as directed by the Engineer, the existing conduit shall be cleaned and new cables shall be pulled into the existing conduit as a unit per Caltrans Specifications in Section 86 2.09B, "Installation".

After conductors have been installed, the ends of the conduits terminating in pull boxes, service equipment enclosures, and controller cabinets must be sealed with an authorized type of sealing compound.

Pull Boxes

Pull boxes shall conform to the provisions in Section 86 2.06, "Pull Boxes," of the Caltrans Specifications and these Special Provisions.

When a pull box is subjected to vehicular traffic load, the cover shall be steel embossed with a non-skid pattern.

Pull boxes shall not be installed more than five feet (5') from base or as shown on the plans.

When pull boxes are placed in dirt and planting areas, a concrete collar shall be constructed around the pull box. The concrete collar shall be a minimum 12 inch concrete collar by 4 inch thick and at least 4 inches along the sides of the pull box to the bottom edge. The top of the pull box shall match slope of the adjacent top of curb, if present, or edge of pavement. The surface elevation of the collar shall match the surface elevation of the pull box and slope away from the pull box at a rate of 1:50 (2%) slope.

The Contractor shall clean all existing pull boxes entered for installation of conduit or wire of all dirt and debris. All pull box lids damaged by Contractor operations shall be replaced at his/her expense. The wiring in these pull boxes shall be neatly bundled, recoiled and reinstalled in the box. Where existing pull boxes are removed and replaced with new larger boxes the existing conduits shall be cut back. When the conduits are cut, the existing conductors must either be removed or well protected. The ends of the cut conduits must have bushings placed on them.

Grout in bottom of pull boxes will not be required. Pull boxes shall be set on 6 inches of crushed rock for drainage. The conduits in the pull boxes shall be placed 2" above the crushed rock.

Recesses for suspension of ballasts will not be required.

All pull boxes shall be No. 5, unless otherwise noted on the plans.

Conductors and Wiring

Conductors and wiring shall conform to the provisions in Section 86 2.08, "Conductors and Cables," and Section 86 2.09, "Wiring," of the Caltrans Specifications and these Special Provisions.

Signal cable shall not be used. Inert lubricant shall be used in placing conductors in the conduit.

All conductors that are to be spliced together shall be twisted a minimum of 5-turns and soldered. Then, the joint shall be held by mechanical means before insulating in accordance with Method "B."

When new conductors are to be added or existing conductors are to be removed from existing conduit, all conductors shall be removed; the conduit shall be cleaned as provided in Section 86-2.05C, "installation"; and both old and new conductors as shown on the plans, shall be pulled into the conduit as a unit.

All field wiring terminating in the traffic signal controller cabinet or service cabinet shall be fastened to the termination panels with one piece copper solderless/crimpleless wire lugs. Solderless/crimpleless lug shall have offset shank and have a maximum wire size capacity of 6.

Bonding and Grounding

Bonding and grounding shall conform to the provisions in Section 86 2.10, "Bonding and Grounding," of the Caltrans Specification and these Special Provisions.

Copper and Wire for Street Lighting

The work shall consist of furnishing and installing street light conductor in conformance with the plans, these Specifications, and as directed by the Engineer.

Copper wire shall be UL approved A.W.G. No. 8 Minimum, 7-strand soft copper, type THWN or THHN with minimum of 3/64 in. polyvinyl chloride insulation, unless otherwise noted. No. 10 in pole may be used.

209 - WORKING DAYS AND HOURS OF WORK

As per Section 12.10 of the Atherton Standard Specifications, this construction work shall be confined to the time period between **8:00 a.m. and 5:00 p.m.**, exclusive of weekends and holidays. No start-up of machines or equipment or other work shall be permitted before 8:00 a.m., and no work, cleaning or servicing of equipment or machines shall be permitted after 6:00 p.m. Delivery of materials and equipment shall be confined to the time period between 8:00 a.m. and 5:00 p.m. on permitted work days.

In addition to the limits noted above, Working Days and Hours shall be in accordance to the approved traffic control plans and hours of work as may be established by the Caltrans encroachment permit. In the event the Town's standard hours and the State's encroachment hours are not consistent, the more restrictive of the two shall be applicable.

210 - CLEAN-UP

The Contractor shall clean up the job site prior to acceptance of the work. All dirt, spoil, and debris of any nature shall be removed and the entire site shall present a clean, workmanlike appearance to the satisfaction of the Engineer. Any damage to paint work, caused from spillage, or splattering from prime coating, paving or seal coating operations shall be corrected to the satisfaction of the Engineer.

211 – PAYMENT

The contract price shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the following items in the job description, as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

1. Mobilization: By lump sum. All costs connected with mobilization of Contractor's operations as described in Section 9 of the Caltrans Standard Specifications will be paid for at the Contract price as described in Section 9 of the Caltrans Standard Specifications and section "MOBILIZATION" in these special provisions.
2. Traffic Control: By lump sum. Includes designing, providing, erecting and maintaining traffic control and signage as indicated on the plans and described in Section 12 of the Caltrans Standard Specifications, the California MUTCD, and section "TRAFFIC CONTROL" in these special provisions. Also includes performing all the work related to safe management of pedestrian, bicycle and vehicular traffic during construction of the project, including Traffic Control Plans and flaggers.
3. Conduit shall be measured from box to box along the approximate street centerline, or from pull box to pull box for conduits crossing the street, for each size of conduit required. Vertical curves into pull boxes will not be measured separately or counted in pay quantities. Payment for conductors will be included in the unit prices paid for conduit.
4. Pull boxes will be counted and paid by the unit.
5. Conductors will not be measured. Payment for conductors will be included in the unit prices paid for the various sizes of conduit containing the conductors.
6. Fixtures will be measured and paid by the unit for each type of luminaire required.
7. Painting will be measured by the unit for each type of pole.
8. Payment for all other miscellaneous items of work will be included in the various bid items requiring the miscellaneous items.

301 – TESTING

Testing of materials and work shall conform to the provisions in Section 6-3, "Quality," of the Caltrans Specifications and these special provisions. Whenever the provisions of Section 6-3, of the Caltrans Standard Specifications refer to tests or testing, it shall mean tests to assure the quality and to determine the acceptability of the materials and work.

401 – AS-BUILT PLANS

The Contractor shall markup clearly and legibly one set of paper prints to show the As-Built conditions. They shall include all information as shown on the contract set of clean drawings and a record of all deviation, modifications, or changes from those drawings, however minor, which were incorporated in the work, all additional work not appearing on the contract drawings and all changes that are made after the final inspection of the contract work. These As-Built marked prints shall be kept current and available on the job site at all times. All changes from the contract plans that are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by details and notes. The As-Built marked prints will be jointly inspected for accuracy and completeness by the City Engineer's representative and a responsible representative of the Contractor prior to submission of the monthly pay estimate. Failure to keep the As-Built marked prints on a current basis shall be sufficient justification to suspend progress payments.

The drawings shall show the following information, if applicable, but not be limited thereto:

- A. The location of any utility lines or other installations of any kind or description known to exist within the construction area. The location includes dimensions to permanent features.
- B. The location and identification of all surface installations within 10 feet of the construction area.
- C. The location and dimensions of any changes within the building or structure.
- D. Actual grade and alignment of roads, structures, or utilities if any changes were made from contract plans.
- E. Actual elevations if changes were made in site grading.
- F. Change in details of design or additional information obtained from working drawings specified to be prepared or furnished by the Contractor including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.
- G. The topography and grades of all drainage installed or affected as part of the project construction.
- H. All changes or modifications that result from the final inspection. The As-Built marked prints shall be delivered to the City Engineer at the time of final inspection for his review and approval. All approval and acceptance of As-

Built drawings shall be accomplished before final payment is made to the Contractor.

END OF SPECIAL PROVISIONS

PART V. TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

The work to be done includes coordinating with PG&E to turn off series circuit power and energize new multiple circuits; install conduits, conductors and pull boxes as noted on the plans; replace lighting fixtures; and provide all labor, materials, tools and incidentals required for a functional street lighting system.

All work shall conform to the Contract Documents, the Town of Atherton Standard Specifications dated April, 2000, and the Caltrans Standard Plans and Specifications dated 2010.

Conduit

Conduit shall be installed by the Horizontal Directional Boring method, unless otherwise noted on the plans.

Add to section 86-2.05A:

Conduit installed underground must be Type 1 or Type 3.

Add to section 86-2.05C:

If a standard coupling cannot be used for joining Type 1 conduit, use a UL-listed threaded union coupling under section 86-2.05C, a concrete-tight split coupling, or a concrete-tight set screw coupling.

If Type 3 conduit is placed in a trench, not in the pavement or under concrete sidewalk, after the bedding material is placed and the conduit is installed, backfill the trench to not less than 4 inches above the conduit with minor concrete under section 90-2, except the concrete must contain not less than 421 pounds of cementitious material per cubic yard. Backfill the remaining trench to finished grade with backfill material.

After conductors have been installed, the ends of the conduits terminating in pull boxes, service equipment enclosures, and controller cabinets must be sealed with an authorized type of sealing compound.

Pull Boxes

Replace the 3rd paragraph in section 86-2.06A(2) of the RSS for section 86-2.06 with:

In a ground or sidewalk area, embed the bottom of a pull box in crushed rock.

Replace "Reserved" in section 86-2.06B of the RSS for section 86-2.06 with:

86-2.06B(1) General

86-2.06B(1)(a) Summary

Section 86-2.06B includes specifications for installing non-traffic-rated pull boxes.

86-2.06B(1)(b) Submittals

Before shipping pull boxes to the job site, submit a list of materials used to fabricate the pull boxes to the Town. Include:

1. Contract number
2. Manufacturer's name
3. Manufacturer's installation instructions
4. Your contact information

Submit reports for pull boxes from an NRTL-accredited laboratory.

Before installing a pull box and cover, submit the manufacturer's replacement warranty for them.

86-2.06B(1)(c) Quality Control and Assurance

86-2.06B(1)(c)(i) Functional Testing

The pull box and cover must be tested under ANSI/SCTE 77, "Specification for Underground Enclosure Integrity." Provide a Certificate of Compliance from the pull box manufacturer that the product has passed testing.

86-2.06B(1)(c)(ii) Warranty

Provide a 2-year manufacturer's replacement warranty for the pull box and cover. The warranty period starts on the date of Contract acceptance.

Deliver replacement parts to the Town within five (5) business days after receiving notification of a failed pull box, cover, or both.

86-2.06B(2) Materials

The pull box and cover must comply with ANSI/SCTE 77, "Specification for Underground Enclosure Integrity," for tier 22 load rating and must be gray or brown.

Each pull box cover must have an electronic marker cast inside.

The bolts, nuts, and washers must be a captive design.

The captive bolt must be capable of withstanding a torque from 55 to 60 ft-lb and a minimum pull-out strength of 750 lb. Perform the test with the cover in place and the bolts torqued. The pull box and cover must not be damaged while performing the test.

Hardware must be stainless steel with 18 percent chromium and 8 percent nickel content.

Galvanize ferrous metal parts under section 75-1.05.

The manufacturer's instructions must include:

1. Quantity and size of entries that can be made without degrading the strength of the pull box below the tier 22 load rating
2. Locations where side entries cannot be made
3. Acceptable method for creating the entry

The tier 22 load rating must be labeled or stenciled by the manufacturer on the inside and outside of the pull box and on the underside of the cover.

86-2.06B(3) Construction

Do not install a pull box in curb ramps or driveways.

A pull box for a post or a pole standard must be located within 5 feet of the standard. Place the pull box adjacent to the back of the curb or edge of the shoulder. If this is impractical, place the pull box in a suitable, protected, and accessible location.

Cover the pull box with a plastic sheet and then bury it in soil from 6 to 8 inches below grade.

Plastic sheets must be 20 mil thick and made of HDPE or PVC virgin compounds.

If only the cover is to be replaced, anchor the cover to the pull box.

Conductors

Add to section 86-2.08A:

Wrap conductors around the projecting end of conduit in pull boxes as shown. Secure conductors and cables to the projecting end of the conduit in pull boxes.

Replace the 1st paragraph of section 86-2.09E with:

Splices must be insulated by "Method B."

Delete the 6th and 7th paragraphs of section 86-2.09E.

Replace the 1st paragraph of section 86-2.09E with:

Splices must be insulated by "Heat-shrink tubing."

Delete the 8th paragraph of section 86-2.09E.

Luminaires

Luminaires to be installed shall be selected from the list of pre-approved products:

Tear-Drop/Pendant Fixtures:

1. Philips RN20-80W48LED4K-R-LE3R
2. King K804-P4RAD-III-75/100(SSL)-8060-120:277-COLOR4000

Post Top Fixtures:

1. Sternberg Vintage Model C31491 A850
2. King Luminaire KCK118BR

Luminaires shall be furnished with a 7-pin photo cell and shall be capable of dimming. A timer for dimming control is not required.

Fixtures shall be on the PG&E pre-approved list, and shall conform to the following provisions.

Replace section 86-6.02 with:

86-6.02 LED LUMINAIRES

86-6.02A General

86-6.02A(1) Summary

Section 86-6.02 includes specifications for installing LED luminaires.

86-6.02A(2) Definitions

CALiPER: Commercially Available LED Product Evaluation and Reporting. A U.S. DOE program that individually tests and provides unbiased information on the performance of commercially-available LED luminaires and lights.

Correlated color temperature: Absolute temperature in kelvin of a blackbody whose chromaticity most nearly resembles that of the light source.

House side lumens: Lumens from a luminaire directed to light up areas between the fixture and the pole, such as sidewalks at intersection or areas off the shoulders on freeways.

International Electrotechnical Commission (IEC): Organization that prepares and publishes international standards for all electrical, electronic, and related technologies.

Junction temperature: Temperature of the electronic junction of the LED device. The junction temperature is critical in determining photometric performance, estimating operational life, and preventing catastrophic failure of the LED.

L70: Extrapolated life in hours of the luminaire when the luminous output depreciates 30 percent from initial values.

LM-79: Test method from the Illumination Engineering Society of North America specifying test conditions, measurements, and report format for testing solid state lighting devices, including LED luminaires.

LM-80: Test method from the Illumination Engineering Society of North America specifying test conditions, measurements, and report format for testing and estimating the long-term performance of LEDs for general lighting purposes.

National Voluntary Laboratory Accreditation Program (NVLAP): U.S. DOE program that accredits independent testing laboratories.

Power factor: Ratio of the real power component to the complex power component.

Street side lumens: Lumens from a luminaire directed to light up areas between the fixture and the roadway, such as traveled ways and freeway lanes.

Surge protection device (SPD): Subsystem or component that protects the unit against short-duration voltage and current surges.

Total harmonic distortion: Ratio of the rms value of the sum of the squared individual harmonic amplitudes to the rms value of the fundamental frequency of a complex waveform.

86-6.02A(3) Submittals

Product submittals must include:

1. LED luminaire checklist.
2. Product specification sheets, including:
 - 2.1. Maximum power in watts.
 - 2.2. Maximum designed junction temperature.
 - 2.3. Heat sink area in square inches.
 - 2.4. Designed junction to ambient thermal resistance calculation with thermal resistance components clearly defined.
 - 2.5. L70 in hours when extrapolated for the average nighttime operating temperature.
3. LM-79 and LM-80 compliant test reports from a CALiPER-qualified or NVLAP-approved testing laboratory for the specific model submitted.
4. Photometric file based on LM-79 test report.

5. Initial and depreciated isofootcandle diagrams showing the specified minimum illuminance for the particular application. The diagrams must be calibrated to feet and show a 40 by 40 foot grid. The diagrams must be calibrated to the mounting height specified for that particular application. The depreciated isofootcandle diagrams must be calculated at the minimum operational life.
6. Test report showing SPD performance as tested under ANSI/IEEE C62.41.2 and ANSI/IEEE C62.45.
7. Test report showing mechanical vibration test results as tested under California Test 611 or equal.
8. Data sheets from the LED manufacturer that include information on life expectancy based on junction temperature.
9. Data sheets from the power supply manufacturer that include life expectancy information.

Submit documentation of a production QA performed by the luminaire manufacturer that:

1. Ensures the minimum specified performance level
2. Includes a documented process for resolving problems

Submit the QA documentation as an informational submittal.

Submit the manufacturer's warranty documentation as an informational submittal before installing LED luminaires.

86-6.02A(4) Quality Control and Assurance

86-6.02A(4)(a) General

The Town may test random samples of the luminaires under section 86-2.14A, and under California Test 678 and may test any parameters specified in section 86-6.01. ***Costs of testing may be deducted from funds owed to the Contractor.***

Fit 1 sample luminaire with a thermistor or thermocouple temperature sensor. A temperature sensor must be mounted on the:

1. LED solder pad as close to the LED as possible
2. Power supply case
3. Light bar or modular system as close to the center of the module as possible

Other configurations must have at least 5 sensors per luminaire. The Engineer provides advice on sensor location. Thermocouples must be either Type K or C. Thermistors must be a negative-temperature-coefficient type with a nominal resistance of 20 kΩ. Use the appropriate thermocouple wire. The leads must be a minimum of 6 feet. Submit documentation with the test unit describing the type of sensor used.

Before performing any testing, energize the sample luminaires for a minimum of 24 hours at 100 percent on-time duty cycle and a temperature of +70 degrees F.

Depreciate the luminaire lighting's performance for the minimum operating life by using the LED manufacturer's data or the data from the LM-80 test report, whichever results in a higher lumen depreciation.

Failure of the luminaire that renders the unit noncompliant with section 86-6.02 specifications is cause for rejection.

86-6.02A(4)(b) Warranty

Provide a 7-year manufacturer's warranty against any defects or failures. The warranty period begins on the date of Contract acceptance. Furnish a replacement luminaire within 10 days after receipt of the failed luminaire. The Town does not pay for the replacement. Deliver replacement luminaires to the Town of Atherton Maintenance Shop.

86-6.02B Materials

86-6.02B(1) General

The luminaire must include an assembly that uses LEDs as the light source. The assembly must include a housing, an LED array, and an electronic driver. The luminaire must:

1. Be UL listed under UL 1598 for luminaires in wet locations or an equivalent standard from a recognized testing laboratory
2. Have a minimum operational life of 63,000 hours
3. Operate at an average operating time of 11.5 hours per night
4. Be designed to operate at an average nighttime operating temperature of 70 degrees F
5. Have an operating temperature range from -40 to +130 degrees F
6. Be defined by the following applications:

Application	Replaces
Roadway 1	200 W high-pressure sodium luminaire mounted at 34 ft

The individual LEDs must be connected such that a catastrophic loss or a failure of 1 LED does not result in the loss of more than 20 percent of the luminous output of the luminaire.

86-6.02B(2) Luminaire Identification

Each luminaire must have the following identification permanently marked inside the unit and outside of its packaging box:

1. Manufacturer's name
2. Trademark
3. Model number
4. Serial number
5. Month and year of manufacture
6. Lot number
7. Contract number
8. Rated voltage
9. Rated wattage
10. Rated power in VA

86-6.02B(3) Electrical Requirements

The luminaire must operate from a 60 ± 3 Hz AC power source. The fluctuations of line voltage must have no visible effect on the luminous output. The operating voltage may range from 120 to 480 V(ac). The luminaire must operate over the entire voltage range or the voltage range must be selected from either of the following options:

1. Luminaire must operate over a voltage range of 95 to 277 V(ac). The operating voltages for this option are 120 V(ac) and 240 V(ac).
2. Luminaire must operate over a voltage range of 347 to 480 V(ac). The operating voltage for this option is 480 V(ac).

The power factor of the luminaire must be 0.90 or greater. The total harmonic distortion, current, and voltage induced into an AC power line by a luminaire must not exceed 20 percent. The maximum power consumption allowed for the luminaire must be as shown in the following table:

Application	Maximum consumption (watts)
Roadway 1	165

86-6.02B(4) Surge Suppression and Electromagnetic Interference

The luminaire's on-board circuitry must include an SPD to withstand high repetition noise transients caused by utility line switching, nearby lightning strikes, and other interferences. The SPD must protect the luminaire from damage and failure due to transient voltages and currents as defined in Tables 1 and 4 of ANSI/IEEE C64.41.2 for location category C-High. The SPD must comply with UL 1449. The SPD must be tested under ANSI/IEEE C62.45 based on ANSI/IEEE C62.41.2 definitions for standard and optional waveforms for location category C-High.

The luminaires and associated on-board circuitry must comply with the Class A emission limits under 47 CFR 15, subpart B, for the emission of electronic noise.

86-6.02B(5) Compatibility

The luminaire must be operationally compatible with currently-used lighting control systems and photoelectric controls.

86-6.02B(6) Photometric Requirements

The luminaire must maintain a minimum illuminance level throughout the minimum operating life. The L70 of the luminaire must be the minimum operating life or greater. The measurements must be calibrated to standard photopic calibrations. The minimum maintained illuminance values measured at a point must be as shown in the following table:

Application	Mounting height (ft)	Minimum maintained illuminance (fc)	Light pattern figure (isofootcandle curve)
Roadway 1	34 (Pendant)	0.15	Pattern defined by an ellipse with the equation: $\frac{x^2}{(82)^2} + \frac{(y - 20)^2}{(52)^2} = 1$ where: x = direction longitudinal to the roadway y = direction transverse to the roadway and the luminaire is offset from the center of the pattern by 20 feet to the house side of the pattern.
Varies	14 (Post-top)		

The luminaire must have a correlated color temperature range from 3,700 to 4,300 K. The color rendering index must be 65 or greater.

The luminaire must not allow more than:

1. 10 percent of the rated lumens to project above 80 degrees from vertical
2. 2.5 percent of the rated lumens to project above 90 degrees from vertical

86-6.02B(7) Thermal Management

The passive thermal management of the heat generated by the LEDs must have enough capacity to ensure proper operation of the luminaire over the minimum operation life. The LED maximum junction temperature for the minimum operation life must not exceed 221 degrees F.

The junction-to-ambient thermal resistance must be 95 degrees F per watt or less. The use of fans or other mechanical devices is not allowed. The heat sink material must be aluminum or other material of equal or lower thermal resistance.

The luminaire must contain circuitry that automatically reduces the power to the LEDs so the maximum junction temperature is not exceeded when the ambient outside temperature is 100 degrees F or greater.

86-6.02B(8) Physical and Mechanical Requirements

The luminaire must:

1. Be a single, self-contained device not requiring job-site assembly for installation
2. Have an integral power supply
3. Weigh no more than 35 pounds

4. Have a maximum-effective projected area of 1.4 square feet when viewed from either side or end
5. Have a housing color that matches color number from 26152 to 26440, from 36231 to 36375, or 36440 of FED-STD-595.

The housing must be fabricated from materials designed to withstand a 3,000-hour salt spray test under ASTM B 117. All aluminum used in housings and brackets must be made of a marine-grade alloy with less than 0.2 percent copper. All exposed aluminum must be anodized.

Each refractor or lens must be made from UV-inhibited high-impact plastic such as acrylic or polycarbonate or heat- and impact-resistant glass and be resistant to scratching. Polymeric materials except lenses of enclosures containing either the power supply or electronic components of the luminaire must be made of UL94VO flame retardant materials. The housing's paint must comply with section 86-2.16. A chromate conversion undercoating must be used underneath a thermoplastic polyester powder coat.

Provide each housing with a slip fitter capable of mounting on a 2-inch pipe tenon. This slip fitter must fit on mast arms with outside diameters from 1-5/8 to 2-3/8 inches. The slip fitter must be capable of being adjusted a minimum of ± 5 degrees from the axis of the tenon in a minimum of 5 steps: +5, +2.5, 0, -2.5, -5. The clamping brackets of the slip fitter must not bottom out on the housing bosses when adjusted within the designed angular range. No part of the slip fitter's mounting brackets must develop a permanent set in excess of 1/32 inch when the bracket's two or four 3/8-inch-diameter cap screws are tightened to 10 ft-lb. Two sets of cap screws may be furnished to allow the slip fitter to be mounted on the pipe tenon in the acceptable range without the cap screws bottoming out in the threaded holes. The cap screws and the clamping brackets must be made of corrosion-resistant materials or treated to prevent galvanic reactions and be compatible with the luminaire housing and the mast arm.

The LED luminaire must be assembled and manufactured such that its internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources. When tested under California Test 611, the luminaire to be mounted horizontally on the mast arm must be capable of withstanding the following cyclic loading for a minimum of 2 million cycles without failure of any luminaire part:

Cyclic Loading

Plane	Power supply	Minimum peak acceleration level
Vertical	Installed	3.0 g peak-to-peak sinusoidal loading (same as 1.5 g peak)
Horizontal ^a	Installed	1.5 g peak-to-peak sinusoidal loading (same as 0.75 g peak)

^aPerpendicular to the direction of the mast arm

The housing must be designed to prevent the buildup of water on top of the housing. Exposed heat sink fins must be oriented to allow water to freely run off of the luminaire and carry dust and other accumulated debris away from the unit. The optical assembly of the luminaire must be protected against dust and moisture intrusion to at least an ANSI/IEC rating of IP66. The power supply enclosure must be protected to at least an ANSI/IEC rating of IP43.

Furnish each mounted luminaire with an ANSI C136.10-compliant, locking-type photocontrol receptacle and a raintight shorting cap. The receptacle must comply with section 86-6.11A.

Furnish each mounted luminaire with an ANSI C136.41-compliant, locking-type photocontrol receptacle with dimming connections and a raintight shorting cap. The receptacle must comply with section 86-6.11A.

When the components are mounted on a down-opening door, the door must be hinged and secured to the luminaire housing separately from the refractor or flat lens frame. The door must be secured to the housing such that accidental opening is prevented. A safety cable must mechanically connect the door to the housing.

Field wires connected to the luminaire must terminate on a barrier-type terminal block secured to the housing. The terminal screws must be captive and equipped with wire grips for conductors up to no. 6. Each terminal position must be clearly identified.

The power supply must be rated for outdoor operation and have at least an ANSI/IEC rating of IP65.

The power supply must be rated for a minimum operational life equal to the minimum operational life of the luminaire or greater.

The power supply case temperature must have a self-rise of 77 degrees F or less above ambient temperature in free air with no additional heat sinks.

The power supply must have 2 leads to accept standard 0-10 V (dc). The dimming control must be compatible with IEC 60929. If the control leads are open or the analog control signal is lost, the circuit must default to 100-percent power.

Conductors and terminals must be identified.

Painting

The pole and all other previously painted metal surfaces shall be prepared for painting. All loose paint, concrete, dirt, oil, grease, posters, and handbills shall be removed. All rust shall be removed and sanded to a smooth surface prior to the application of the primer coat.

Street light fixtures shall be removed during preparation and painting.

Coatings shall be applied only to clean, dry, and properly prepared (per manufacturer's data) electroliers. Minor cleanup, removal, and disposal of incidental brush and tree trimmings and debris may also be necessary and should be considered when preparing a bid.

All painting shall be accomplished using a two-part epoxy / polyurethane system consisting of equivalent High solids epoxy primer and Federal Color Standard 14062, Dark Green. Polyurethane top coat (or approved equal). The rate of application shall be as recommended by the manufacturer. Sufficient coats shall be applied to completely hide base materials, produce uniform color, and provide satisfactory finish results. All materials shall be applied evenly with proper thickness and free of runs, sags, skips, and other defects.

Whether spraying, brushing, rolling, or preparing the surface, the contractor shall be responsible for protecting all property and persons during the painting process. No painting shall be done in rain, fog, when precipitation is imminent or when the temperature is below 45°F or above 100°F including surface

temperatures. All glassware shall be masked before applying paint to the electrolier. The base of the electrolier shall be masked to prevent runs and drips to the sidewalk.

Workmanship: Coating shall be applied in thickness' not to exceed manufacturers printed instructions. All coats shall be evenly spread and free of defects. All coats shall have no ridges, sags, variations in texture, color, or finish. Any finish showing dust, deposits, or impurities shall be removed and/or refinished.

Measurement and Payment

Conduit shall be measured from box to box along the approximate street centerline, or from pull box to pull box for conduits crossing the street, for each size of conduit required. Curves into pull boxes will not be measured separately or counted in pay quantities.

Pull boxes will be counted and paid by the unit.

Conductors will not be measured. Payment for conductors will be included in the unit prices paid for the various sizes of conduit containing the conductors.

Luminaires will be measured and paid by the unit for each type of luminaire required.

Painting will be measured by the unit for each type of pole.

Payment for all other miscellaneous items of work will be included in the various bid items requiring the miscellaneous items.