



**LEXINGTON**

# Lexington-Fayette Urban County Government

Lexington, Kentucky  
Horse Capital of the World

Division of Central Purchasing

Date of Issue: October 5, 2022

## INVITATION TO BID #129-2022 Traffic Signal & Control Equipment

**Bid Opening Date:** October 19, 2022

**Bid Opening Time:** 2:00 PM

**Address:** All bids must be submitted on line at <https://lexingtonky.ionwave.net/>

**Type of Bid:** Price Contract

**Pre Bid Meeting:** N/A

**Pre Bid Time:** N/A

**Address:** N/A

Sealed bids will ONLY be received online at <https://lexingtonky.ionwave.net/> until **2:00 PM**, prevailing local time on **10/19/2022**. Bids must be submitted/uploaded by the above-mentioned date and time.

Bids are to include all shipping, handling and associated fees to the point of delivery (unless otherwise specified in the bid documents below) located at: Lexington, KY

<input checked="" type="checkbox"/> Bid Specifications Met _____ Exceptions to Bid Specifications. <i>Exceptions shall be itemized and attached to bid proposal submitted.</i>	<p align="center"><b>Check One:</b></p> <p align="center"><b>Proposed Delivery:</b> Varies days after acceptance of bid.</p>
<p><b>Procurement Card Usage</b>—The Lexington-Fayette Urban County Government may be using Procurement Cards to purchase goods and services and also to make payments. Will you accept Procurement Cards? <input checked="" type="checkbox"/> Yes _____ No</p>	

**To expedite award, the forms in this document should be completed and uploaded with your bid.**

Submitted by: Traffic Control Products

*Firm Name*

4565 Glenbrook Rd

*Address*

Willoughby, OH 44094

*City, State & Zip*

**Bid must be signed:**

Jacob Knights

*Signature of Authorized Company Representative – Title*

Jacob Knights

*Representative's Name (Typed or printed)*

440-951-8929

*Area Code - Phone – Extension*

*Fax #*

sales@traffcon.com

*E-Mail Address*

**The Affidavit in this bid must be completed before your firm can be considered for award of this contract.**

**AFFIDAVIT**

Comes the Affiant, Jacob Knights, and after being first duly sworn under penalty of perjury as follows:

1. His/her name is Jacob Knights and he/she is the individual submitting the bid or is the authorized representative of Traffic Control Products the entity submitting the bid (hereinafter referred to as "Bidder")
2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
4. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
5. Bidder has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Bidder will not violate any provision of the campaign finance laws of the Commonwealth.
6. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as "Ethics Act."
7. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught. Jacob Knights

STATE OF Ohio

COUNTY OF Lake

The foregoing instrument was subscribed, sworn to and acknowledged before me by Jacob Knights on this the 26<sup>th</sup> day of October, 2022

My Commission expires: October 17, 2026



Rachel Estvanko  
Notary Public, State of Ohio  
My Commission Expires:  
October 17, 2026

Rachel Estvanko  
NOTARY PUBLIC, STATE AT LARGE

**Please refer to Section II. Bid Conditions, Item "U" prior to completing this form.**

## **I. GREEN PROCUREMENT**

### **A. ENERGY**

The Lexington-Fayette Urban County Government is committed to protecting our environment and being fiscally responsible to our citizens.

The Lexington-Fayette Urban County Government mandates the use of Energy Star compliant products if they are available in the marketplace (go to [www.Energystar.gov](http://www.Energystar.gov)). If these products are available, but not submitted in your pricing, your bid will be rejected as non-compliant.

ENERGY STAR is a government program that offers businesses and consumers energy-efficient solutions, making it easy to save money while protecting the environment for future generations.

#### Key Benefits

These products use 25 to 50% less energy  
Reduced energy costs without compromising quality or performance  
Reduced air pollution because fewer fossil fuels are burned  
Significant return on investment  
Extended product life and decreased maintenance

### **B. GREEN SEAL CERTIFIED PRODUCTS**

The Lexington-Fayette Urban County Government is also committed to using other environmentally friendly products that do not negatively impact our environment. Green Seal is a non-profit organization devoted to environmental standard setting, product certification, and public education.

Go to [www.Greenseal.org](http://www.Greenseal.org) to find available certified products. These products will have a reduced impact on the environment and on human health. The products to be used must be pre-approved by the LFUCG prior to commencement of any work in any LFUCG facility. If a Green Seal product is not available, the LFUCG must provide a signed waiver to use an alternate product. Please provide information on the Green Seal products being used with your bid response.

### **C. GREEN COMMUNITY**

**The Lexington-Fayette Urban County Government (LFUCG) serves as a principal, along with the University of Kentucky and Fayette County Public Schools, in the Bluegrass Partnership for a Green Community. The Purchasing Team component of the Partnership collaborates on economy of scale purchasing that promotes and enhances environmental initiatives. Specifically, when applicable, each principal is interested in obtaining best value products and/or services which promote environment initiatives via solicitations and awards from the other principals.**

**If your company is the successful bidder on this Invitation For Bid, do you agree to extend the same product/service pricing to the other principals of the Bluegrass Partnership for a Green Community (i.e. University of Kentucky and Fayette County Schools) if requested?**

Yes  X                       No       

## **II. Bid Conditions**

- A. No bid may be withdrawn for a period of sixty (60) days after the date and time set for opening.
- B. No bid may be altered after the date and time set for opening. In the case of obvious errors, the Division of Central Purchasing may permit the withdrawal of a bid. The decision as to whether a bid may be withdrawn shall be that of the Division of Central Purchasing.
- C. Acceptance of this proposal shall be enactment of an Ordinance by the Urban County Council.
- D. The bidder agrees that the Urban County Government reserves the right to reject any and all bids for either fiscal

- or technical reasons, and to award each part of the bid separately, all parts to one vendor or all parts to multiple vendors.
- E. Minor exceptions may not eliminate the bidder. The decision as to whether any exception is minor shall be entirely that of the head of the requisitioning Department or Division and the Director of the Division of Central Purchasing. The Urban County Government may waive technicalities and informalities where such waiver would best serve the interests of the Urban County Government.
  - F. Manufacturer's catalogue numbers, trade names, etc., where shown herein are for descriptive purposes and are to guide the bidder in interpreting the standard of quality, design, and performance desired, and shall not be construed to exclude proposals based on furnishing other types of materials and/or services. However, any substitution or departure proposed by the bidder must be clearly noted and described; otherwise, it will be assumed that the bidder intends to supply items specifically mentioned in this Invitation for Bids.
  - G. The Urban County Government may require demonstrations of the materials proposed herein prior to acceptance of this proposal.
  - H. Bids must be submitted on this form and must be signed by the bidder or his authorized representative. Unsigned bids will not be considered.
  - I. Bids must be submitted prior to the date and time indicated for opening. Bids submitted after this time will not be considered.
  - J. All bids mailed must be submitted in the Ion Wave online portal at <https://lexingtonky.ionwave.net/>
  - K. Bidder is requested to show both unit prices and lot prices. In the event of error, the unit price shall prevail.
  - L. A certified check or Bid Bond in the amount of XX percent of the bid price must be attached hereto. This check must be made payable to the Lexington-Fayette Urban County Government, and will be returned when the material and/or services specified herein have been delivered in accordance with specifications. In the event of failure to perform within the time period set forth in this bid, it is agreed the certified check may be cashed and the funds retained by the Lexington-Fayette Urban County Government as liquidated damages. Checks of unsuccessful bidders will be returned when the bid has been awarded.
  - M. The delivery dates specified by bidder may be a factor in the determination of the successful bidder.
  - N. Tabulations of bids received may be mailed to bidders. Bidders requesting tabulations must enclose a stamped, self-addressed envelope with the bid.
  - O. The Lexington-Fayette Urban County Government is exempt from Kentucky Sales Tax and Federal Excise Tax on materials purchased from this bid invitation. Materials purchased by the bidder for construction projects are not tax exempt and are the sole responsibility of the bidder.
  - P. All material furnished hereunder must be in full compliance with OSHA regulations.
  - Q. If more than one bid is offered by one party, or by any person or persons representing a party, all such bids shall be rejected.
  - R. Signature on the face of this bid by the Bidder or his authorized representative shall be construed as acceptance of and compliance with all terms and conditions contained herein.
  - S. The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, religion, sex (including pregnancy, sexual orientation or gender identity), national origin, disability, age, genetic information, political affiliation, or veteran status, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.
  - T. The Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any county, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly

or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- (1) *The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) *The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) *The contractor will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) *The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.*

The Act further provides:

KRS 45.610. Hiring minorities - Information required

- (1) *For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.*
- (2) *Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.*

KRS 45.620. Action against contractor - Hiring of minority contractor or subcontractor

- (1) *If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.*
- (2) *If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 to 45.640.*
- (3) *The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

*Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.*

KRS 45.640 Minimum skills

*Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.*

It is recommended that all of the provisions above quoted to be included as special conditions in each contract.

In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

- U. Any party, firm or individual submitting a proposal pursuant to this invitation must be in compliance with the requirements of the Lexington-Fayette Urban County Government regarding taxes and fees before they can be considered for award of this invitation and must maintain a "current" status with regard to those taxes and fees throughout the term of the contract. The contractor must be in compliance with Chapter 13 from the Code of Ordinances of the Lexington-Fayette Urban County Government. The contractor must be in compliance with Ordinance 35-2000 pursuant to contractor registration with the Division of Building Inspection. If applicable, said business must have a Fayette County business license.

Pursuant to KRS 45A.343 and KRS 45A.345, the contractor shall

- (1) *Reveal any final determination of a violation by the contractor within the previous five year period pursuant to KRS Chapters 136 (corporation and utility taxes), 139 (sales and use taxes), 141 (income taxes), 337 (wages and hours), 338 (occupational safety and health of employees), 341 (unemployment and compensation) and 342 (labor and human rights) that apply to the contractor; and*
- (2) *Be in continuous compliance with the above-mentioned KRS provisions that apply to the contractor for the duration of the contract.*

A contractor's failure to reveal the above or to comply with such provisions for the duration of the contract shall be grounds for cancellation of the contract and disqualification of the contractor from eligibility for future contracts for a period of two (2) years.

- V. Vendors who respond to this invitation have the right to file a notice of contention associated with the bid process or to file a notice of appeal of the recommendation made by the Director of Central Purchasing resulting from this invitation.

Notice of contention with the bid process must be filed within 3 business days of the bid/proposal opening by (1) sending a written notice, including sufficient documentation to support contention, to the Director of the Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his/her contention with the bid process. After consulting with the Commissioner of Finance the Chief Administrative Officer and reviewing the documentation and/or hearing the vendor, the Director of Central Purchasing shall promptly respond in writing findings as to the compliance with bid processes. If, based on this review, a bid process irregularity is deemed to have occurred the Director of Central Purchasing will consult with the Commissioner of Finance, the Chief Administrative Officer and the Department of Law as to the appropriate remedy.

Notice of appeal of a bid recommendation must be filed within 3 business days of the bid recommendation by (1) sending a written notice, including sufficient documentation to support appeal, to the Director, Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his appeal. After reviewing the documentation and/or hearing the vendor and consulting with the Commissioner of Finance and the Chief Administrative Officer, the Director of Central Purchasing shall in writing, affirm or withdraw the recommendation.

### III. Procurement Contract Bid Conditions

- A. The terms of this agreement shall be for 1 year(s) from the date of acceptance of this contract by the Lexington-Fayette Urban County Government. This agreement may be automatically extended for an additional **(3)-1** year(s) renewal. This contract may be canceled by either party thirty (30) days after delivery by canceling party of written notice of intent to cancel to the other contracting party.
  
- B. Price Changes **(Space Checked Applies)**
  - (XXX)1. Prices quoted in response to the Invitation shall be firm prices for the first 365 days of the Procurement Contract. After 365 days, prices may be subject to revision and such changes shall be based on general industry changes. Revision may be either increases or decreases and may be requested by either party. There will be no more than one (1) price adjustment per quarter. Requests for price changes shall be received in writing at least twenty (20) days prior to the effective date and are subject to written acceptance before becoming effective. Proof of the validity of a request for revision shall be responsibility of the requesting party. The Lexington-Fayette Urban County Government shall receive the benefit of any decline that the seller shall offer his other accounts.
    - () 2. No provision for price change is made herein. Prices are to be firm for the term of this contract.
    - () 3. See bid specifications.
  
  - C. If any contract item is not available from the vendor, the Lexington-Fayette Urban County Government, at its option, may permit the item to be back-ordered or may procure the item on the open market.
  
  - D. All invoices must bear reference to the Lexington-Fayette Urban County Government Purchasing document numbers which are being billed.
  
  - E. This contract may be canceled by the Lexington-Fayette Urban County Government if it is determined that the Bidder has failed to perform under the terms of this agreement, such cancellation to be effective upon receipt of written notice of cancellation by the Bidder.
  
  - F. No substitutions for articles specified herein may be made without prior approval of the Division of Central Purchasing.

## EQUAL OPPORTUNITY AGREEMENT

---

### Standard Title VI Assurance

The Lexington Fayette-Urban County Government, (hereinafter referred to as the "Recipient") hereby agrees that as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation, it will comply with Title VI of the Civil Rights Act of 1964, 78Stat.252, 42 U.S.C. 2000d-4 (hereinafter referred to as the "Act"), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, (49 CFR, Part 21) Nondiscrimination in Federally Assisted Program of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the "Regulations") and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Recipient receives Federal financial assistance from the U.S. Department of Transportation, including the Federal Highway Administration, and hereby gives assurance that will promptly take any necessary measures to effectuate this agreement. This assurance is required by subsection 21.7(a) (1) of the Regulations.

### The Law

- Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and sub-contractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- Section 503 of the Rehabilitation Act of 1973 states: *The Contractor will not discriminate against any employee or applicant for employment because of physical or mental disability.*
- Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal contracts.
- Section 206(A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states: *The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.*

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractors may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

### Bidders

*I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, veteran status, disability and age.*

Jacob Knights  
Signature

Traffic Control Products  
Name of Business



## GENERAL PROVISIONS OF BID CONTRACT

By signing the below, bidder acknowledges that it understands and agrees with the following provisions related to its bid response and the provision of any goods or services to LFUCG upon selection by LFUCG pursuant to the bid request:

1. Bidder shall comply with all Federal, State & Local regulations concerning this type of service or good. All applicable state laws, ordinances and resolutions (including but not limited to Section 2-33 (Discrimination due to sexual orientation or gender identity) and Chapter 13 (Licenses and Regulations) of the Lexington-Fayette Urban County Government Code of Ordinances, and Resolution No. 484-17 (Minority, Women, and Veteran-Owned Businesses)) and the regulations of all authorities having jurisdiction over the project shall apply to the contract, and shall be deemed to be incorporated herein by reference.
2. Failure to submit ALL forms and information required by LFUCG may be grounds for disqualification.
3. Addenda: All addenda and IonWave Q&A, if any, must be considered by the bidder in making its response, and such addenda shall be made a part of the requirements of the bid contract. Before submitting a bid response, it is incumbent upon bidder to be informed as to whether any addenda have been issued, and the failure of the bidder to cover any such addenda may result in disqualification of that response.
4. Bid Reservations: LFUCG reserves the right to reject any or all bid responses, to award in whole or part, and to waive minor immaterial defects in proposals. LFUCG may consider any alternative proposal that meets its basic needs.
5. Liability: LFUCG is not responsible for any cost incurred by bidder in the preparation of its response.
6. Changes/Alterations: Bidder may change or withdraw a proposal at any time prior to the opening; however, no oral modifications will be allowed. Only letters, or other formal written requests for modifications or corrections of a previously submitted proposal which is addressed in the same manner as the bid response, and received by LFUCG prior to the scheduled closing time for receipt of bids, will be accepted. The bid response when opened, will then be corrected in accordance with such written request(s), provided that the written request is contained in a sealed envelope which is plainly marked "modifications of bid response".
7. Clarification of Submittal: LFUCG reserves the right to obtain clarification of any point in a bid or to obtain additional information from any bidder.
8. Bribery Clause: By his/her signature on its response, bidder certifies that no employee of his/hers, any affiliate or subcontractor, has bribed or attempted to bribe an officer or employee of the LFUCG.
9. Additional Information: While not necessary, the bidder may include any product brochures, software documentation, sample reports, or other documentation that may assist LFUCG in better understanding and evaluating the bid response. Additional documentation shall not serve as a substitute for other documentation which is required by the LFUCG to be submitted with the bid response.
10. Ambiguity, Conflict or other Errors: If a bidder discovers any ambiguity, conflict, discrepancy, omission or other error in the bid request of LFUCG, it shall immediately notify LFUCG of such error in writing and request modification or clarification of the document if allowable by the LFUCG.
11. Agreement to Bid Terms: In submitting its bid response, the bidder agrees that it has carefully examined the specifications and all provisions relating to LFUCG's bid request, including but not limited to the bid contract. By submission of its bid response, bidder states that it understands the meaning, intent and requirements of LFUCG's bid request and agrees to the same. The successful bidder shall warrant that it is familiar with and understands all provisions herein and shall warrant that it can comply with them. No additional compensation to bidder shall be authorized for services, expenses, or goods reasonably covered under these provisions that the bidder omits from its bid response.
12. Cancellation: LFUCG may unilaterally terminate the bid contract with the selected bidder(s) at any time, with or without cause, by providing at least thirty (30) days advance written notice unless a different advance written notice

period is negotiated prior to contract approval. Payment for services or goods received prior to termination shall be made by the LFUCG provided these goods or services were provided in a manner acceptable to the LFUCG. Payment for those goods and services shall not be unreasonably withheld.

13. Assignment of Contract: The selected bidder(s) shall not assign or subcontract any portion of the bid contract with LFUCG without the express written consent of LFUCG. Any purported assignment or subcontract in violation hereof shall be void. It is expressly acknowledged that LFUCG shall never be required or obligated to consent to any request for assignment or subcontract; and further that such refusal to consent can be for any or no reason, fully within the sole discretion of LFUCG.
14. No Waiver: No failure or delay by LFUCG in exercising any right, remedy, power or privilege hereunder, nor any single or partial exercise thereof, nor the exercise of any other right, remedy, power or privilege shall operate as a waiver hereof or thereof. No failure or delay by LFUCG in exercising any right, remedy, power or privilege under or in respect of this bid proposal or bid contract shall affect the rights, remedies, powers or privileges of LFUCG hereunder or shall operate as a waiver thereof.
15. Authority to do Business: Each bidder must be authorized to do business under the laws of the Commonwealth of Kentucky and must be in good standing and have full legal capacity to provide the goods or services specified in the bid proposal. Each bidder must have all necessary right and lawful authority to submit the bid response and enter into the bid contract for the full term hereof including any necessary corporate or other action authorizing the bidder to submit the bid response and enter into this bid contract. If requested, the bidder will provide LFUCG with a copy of a corporate resolution authorizing this action and/or a letter from an attorney confirming that the proposer is authorized to do business in the Commonwealth of Kentucky. All bid responses must be signed by a duly authorized officer, agent or employee of the bidder.
16. Governing Law: This bid request and bid contract shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky. In the event of any proceedings regarding this matter, the bidder agrees that the venue shall be the Fayette County Circuit Court or the U.S. District Court for the Eastern District of Kentucky, Lexington Division and that the bidder expressly consents to personal jurisdiction and venue in such Court for the limited and sole purpose of proceedings relating to these matters or any rights or obligations arising thereunder.
17. Ability to Meet Obligations: Bidder affirmatively states that there are no actions, suits or proceedings of any kind pending against bidder or, to the knowledge of the bidder, threatened against the bidder before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the authority or ability of bidder to perform its obligations under this bid response or bid contract, or which question the legality, validity or enforceability hereof or thereof.
18. Price Discrepancy: When applicable, in case of price discrepancy, unit bid price written in words will prevail followed by unit price written in numbers then total amount bid per line item.
19. Bidder understands and agrees that its employees, agents, or subcontractors are not employees of LFUCG for any purpose whatsoever. Bidder is an independent contractor at all times related to the bid response or bid contract.
20. Contractor [or Vendor or Vendor's Employees] will not appropriate or make use of the Lexington-Fayette Urban County Government (LFUCG) name or any of its trade or service marks or property (including but not limited to any logo or seal), in any promotion, endorsement, advertisement, testimonial or similar use without the prior written consent of the government. If such consent is granted LFUCG reserves the unilateral right, in its sole discretion, to immediately terminate and revoke such use for any reason whatsoever. Contractor agrees that it shall cease and desist from any unauthorized use immediately upon being notified by LFUCG.
21. If any term or provision of this bid contract shall be found to be illegal or unenforceable, the remainder of the contract shall remain in full force and such term or provision shall be deemed stricken.

  
\_\_\_\_\_  
Signature

10/26/2022  
Date

**WORKFORCE ANALYSIS FORM**

Name of Organization: Traffic Control Products

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African-American (Not Hispanic or Latino)		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino)		Asian (Not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (Not Hispanic or Latino)		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators																	
Professionals	3	1	1	1													
Superintendents																	
Supervisors	3	3															
Foremen																	
Technicians	3	3															
Protective Service																	
Para-Professionals																	
Office/Clerical	1		1														
Skilled Craft	5	5															
Service/Maintenance																	
<b>Total:</b>	14	1	2	1													

Prepared by: Jacob Knights - Sales Manager Date: 10 / 26 / 2022  
*(Name and Title)* *Revised 2015-Dec-15*

**DIRECTOR, DIVISION OF CENTRAL PURCHASING  
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
200 EAST MAIN STREET  
LEXINGTON, KENTUCKY 40507**

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE  
EQUAL EMPLOYMENT OPPORTUNITIES AND DBE CONTRACT PARTICIPATION**

The Lexington-Fayette Urban County Government has set a goal that not less than ten percent (10%) of the total value of this contract be subcontracted to MBE/WBE's, and set a goal that not less than three percent (3%) of the total value of this contract be subcontracted to Veteran-Owned Small Businesses. The goal for the utilization of Certified MBE/WBE's and Veteran-Owned Small Businesses as subcontractors are recommended goals. Contractors who fail to meet such goals will be expected to provide written explanations to the Director of the Division of Central Purchasing of efforts they have made to accomplish the recommended goals and the extent to which they are successful in accomplishing the recommended goals will be a consideration in the procurement process.

For assistance in locating MBE/WBE Subcontractors contact Sherita Miller at 859/258-3320 or by writing the address listed below:

Sherita Miller, Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street – Room 338  
Lexington, Kentucky 40507  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)

## **Lexington-Fayette Urban County Government MWDBE PARTICIPATION GOALS**

### **A. GENERAL**

- 1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses (VOSB) as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.
- 3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**
- 4) The LFUCG has also established a 3% of total procurement costs as a Goal for participation for of Veteran-Owned Businesses.
- 5) **It is therefore a request of each Bidder to include in its bid, the same goal (3%) for Veteran-Owned participation and other requirements as outlined in this section.**

### **B. PROCEDURES**

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
  - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested MWDBE and Veteran-Owned subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

### **C. DEFINITIONS**

- 1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.
- 2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by one or more women.
- 3) A Disadvantaged Business (DBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by a person(s) that are economically and socially disadvantaged.

- 4) A Veteran-Owned Small Business (VOSB) is defined as a business which is certified as being at least 51% owned, managed and controlled by a veteran and/or a service disabled veteran.
- 5) Good Faith Efforts are efforts that, given all relevant circumstances, a bidder or proposer actively and aggressively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts outlined in this document will be considered, along with any other relevant factors.

#### D. OBLIGATION OF BIDDER FOR GOOD FAITH EFFORTS

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MWDBE and Veteran-Owned subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written documentation of their Good Faith Efforts to do so.**
- 2) Award of Contract shall be conditioned upon satisfaction of the requirements set forth herein.
- 3) The Form of Proposal includes a section entitled “MWDBE Participation Form”. The applicable information must be completed and submitted as outlined below.
- 4) **Failure to submit this information as requested may be cause for rejection of bid or delay in contract award.**

#### E. DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS

- 1) Bidders reaching the Goal are required to submit only the MWDBE Participation Form.” The form must be fully completed including names and telephone number of participating MWDBE firm(s); type of work to be performed; estimated value of the contract and value expressed as a percentage of the total Lump Sum Bid Price. The form must be signed and dated, and is to be submitted with the bid.
- 2) Bidders not reaching the Goal must submit the “MWDBE Participation Form”, the “Quote Summary Form” and a written statement documenting their Good Faith Effort to do so. If bid includes no MWDBE and/or Veteran participation, bidder shall enter “None” on the subcontractor / supplier form). In addition, the bidder must submit written proof of their Good Faith Efforts to meet the Participation Goal:
  - a. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.
  - b. Included documentation of advertising in the above publications with the bidders good faith efforts package
  - c. Attended LFUCG Central Purchasing Economic Inclusion Outreach event
  - d. Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned businesses of subcontracting opportunities

- e. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses.
- f. Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
- g. Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.
- h. Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs and/or Veteran-Owned businesses soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
- i. Followed up initial solicitations by contacting MWDBEs and Veteran-Owned Businesses to determine their level of interest.
- j. Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.
- k. Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce
- l. Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.
- m. Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.
- n. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.
- o. Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal
- p. Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

q. Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

**Note: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.**





## MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA  
Minority Business Enterprise Liaison  
Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street  
Lexington, KY 40507  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)  
859-258-3323

**OUR MISSION:** The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented Resolution 484-2017 – A Certified Minority, Women and Disadvantaged Business Enterprise ten percent (10%) minimum goal and a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and Certified Service Disabled Veteran – Owned Businesses for government contracts.

The resolution states the following definitions shall be used for the purposes of reaching these goals (a full copy is available in Central Purchasing):

***Certified Disadvantaged Business Enterprise (DBE)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a person(s) who is socially and economically disadvantaged as define by 49 CFR subpart 26.

***Certified Minority Business Enterprise (MBE)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by an ethnic minority (i.e. African American, Asian American/Pacific Islander, Hispanic Islander, Native American/Native Alaskan Indian) as defined in federal law or regulation as it may be amended from time-to-time.

***Certified Women Business Enterprise (WBE)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a woman.

***Certified Veteran-Owned Small Business (VOSB)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

***Certified Service Disabled Veteran Owned Small Business (SDVOSB)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a disabled veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

The term “Certified” shall mean the business is appropriately certified, licensed, verified, or validated by an organization or entity recognized by the Division of Purchasing as having the appropriate credentials to make a determination as to the status of the business.

To comply with Resolution 484-2017, prime contractors and minority, women and veteran owned businesses must enroll in the new Diverse Business Management Compliance system, <https://lexingtonky.diversitycompliance.com/>

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs and Veteran-Owned Small Businesses in (<https://lexingtonky.ionwave.net>)

<b>Business</b>	<b>Contact</b>	<b>Email Address</b>	<b>Phone</b>
<b>LFUCG</b>	Sherita Miller	<a href="mailto:smiller@lexingtonky.gov">smiller@lexingtonky.gov</a>	859-258-3323
<b>Commerce Lexington – Minority Business Development</b>	Tyrone Tyra	<a href="mailto:tyra@commercelexington.com">tyra@commercelexington.com</a>	859-226-1625
<b>Tri-State Minority Supplier Diversity Council</b>	Susan Marston	<a href="mailto:smarston@tsmsdc.com">smarston@tsmsdc.com</a>	502-365-9762
<b>Small Business Development Council</b>	Shawn Rogers UK SBDC	<a href="mailto:shawn.rogers@uky.edu">shawn.rogers@uky.edu</a>	859-257-7666
<b>Community Ventures Corporation</b>	Phyllis Alcorn	<a href="mailto:palcorn@cvky.org">palcorn@cvky.org</a>	859-231-0054
<b>KY Transportation Cabinet (KYTC)</b>	Melvin Byne	<a href="mailto:Melvin.bynes2@ky.gov">Melvin.bynes2@ky.gov</a>	502-564-3601
<b>KYTC Pre-Qualification</b>	Shella Eagle	<a href="mailto:Shella.Eagle@ky.gov">Shella.Eagle@ky.gov</a>	502-782-4815
<b>Ohio River Valley Women’s Business Council (WBENC)</b>	Sheila Mixon	<a href="mailto:smixon@orwbc.org">smixon@orwbc.org</a>	513-487-6537
<b>Kentucky MWBE Certification Program</b>	Yvette Smith, Kentucky Finance Cabinet	<a href="mailto:Yvette.Smith@ky.gov">Yvette.Smith@ky.gov</a>	502-564-8099
<b>National Women Business Owner’s Council (NWBOC)</b>	Janet Harris-Lange	<a href="mailto:janet@nwbo.org">janet@nwbo.org</a>	800-675-5066
<b>Small Business Administration</b>	Robert Coffey	<a href="mailto:robertcoffey@sba.gov">robertcoffey@sba.gov</a>	502-582-5971
<b>LaVoz de Kentucky</b>	Andres Cruz	<a href="mailto:lavozdeky@yahoo.com">lavozdeky@yahoo.com</a>	859-621-2106
<b>The Key News Journal</b>	Patrice Muhammad	<a href="mailto:production@keynewsjournal.com">production@keynewsjournal.com</a>	859-685-8488



**LFUCG MWDBE PARTICIPATION FORM**

**Bid/RFP/Quote Reference #** \_\_\_\_\_

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Company Representative**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**



**LFUCG MWDBE PARTICIPATION FORM**

**Bid/RFP/Quote Reference #** \_\_\_\_\_

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Company Representative**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**



# LEXINGTON

## LFUCG MWDBE SUBSTITUTION FORM

Bid/RFP/Quote Reference # \_\_\_\_\_

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project. **Failure to submit this form may cause rejection of the bid.**

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title



# LEXINGTON

## MWDBE QUOTE SUMMARY FORM

Bid/RFP/Quote Reference # \_\_\_\_\_

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

Company Name	Contact Person
Address/Phone/Email	Bid Package / Bid Date

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars \$\$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title



# LEXINGTON

## LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE and Veteran contractors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

**Bid/RFP/Quote #** \_\_\_\_\_

**Total Contract Amount Awarded to Prime Contractor for this Project** \_\_\_\_\_

<b>Project Name/ Contract #</b>	<b>Work Period/ From:</b>	<b>To:</b>
<b>Company Name:</b>	<b>Address:</b>	
<b>Federal Tax ID:</b>	<b>Contact Person:</b>	

Subcontractor Vendor ID (name, address, phone, email)	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

## LFUCG STATEMENT OF GOOD FAITH EFFORTS

Bid/RFP/Quote # \_\_\_\_\_

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

\_\_\_\_\_ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

\_\_\_\_\_ Included documentation of advertising in the above publications with the bidders good faith efforts package

\_\_\_\_\_ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

\_\_\_\_\_ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

\_\_\_\_\_ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

\_\_\_\_\_ Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

\_\_\_\_\_ Contacted organizations that work with MWDBE companies for assistance in finding certified MWBDE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

\_\_\_\_\_ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

\_\_\_\_\_ Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

\_\_\_\_\_ Provided the interested MWBDE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

\_\_\_\_\_ Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce

\_\_\_\_\_ Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.



\_\_\_\_\_ Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

\_\_\_\_\_ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

\_\_\_\_\_ Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

\_\_\_\_\_ Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

\_\_\_\_\_ Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and **Veteran participation**.

**NOTE: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.**

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

**AMENDMENT 1 —  
CERTIFICATION OF COMPLIANCE FOR EXPENDITURES USING FEDERAL FUNDS,  
INCLUDING THE AMERICAN RESCUE PLAN ACT**

The Lexington-Fayette Urban County Government (“LFUCG”) may use Federal funding to pay for the goods and/or services that are the subject matter of this bid. That Federal funding may include funds received by LFUCG under the American Rescue Plan Act of 2021. Expenditures using Federal funds require evidence of the contractor’s compliance with Federal law. Therefore, by the signature below of an authorized company representative, you certify that the information below is understood, agreed, and correct. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

**The bidder (hereafter “bidder,” or “contractor”) agrees and understands that in addition to all conditions stated within the attached bid documents, the following conditions will also apply to any Agreement entered between bidder and LFUCG, if LFUCG uses Federal funds, including but not limited to funding received by LFUCG under the American Rescue Plan Act (“ARPA”), toward payment of goods and/or services referenced in this bid. The bidder also agrees and understands that if there is a conflict between the terms included elsewhere in this Request for Proposal and the terms of this Amendment 1, then the terms of Amendment 1 shall control. The bidder further certifies that it can and will comply with these conditions, if this bid is accepted and an Agreement is executed:**

1. Any Agreement executed as a result of acceptance of this bid may be governed in accordance with 2 CFR Part 200 and all other applicable Federal law and regulations and guidance issued by the U.S. Department of the Treasury.
2. Pursuant to 24 CFR § 85.43, any Agreement executed as a result of acceptance of this bid can be terminated if the contractor fails to comply with any term of the award. This Agreement may be terminated for convenience in accordance with 24 CFR § 85.44 upon written notice by LFUCG. Either party may terminate this Agreement with thirty (30) days written notice to the other party, in which case the Agreement shall terminate on the thirtieth day. In the event of termination, the contractor shall be entitled to that portion of total compensation due under this Agreement as the services rendered bears to the services required. However, if LFUCG suspects a breach of the terms of the Agreement and/or that the contractor is violating the terms of any applicable law governing the use of Federal funds, LFUCG may suspend the contractor’s ability to receive payment by giving thirty (30) days’ advance written notice. Further, either party may terminate this Agreement for cause shown with thirty (30) days written notice, which shall explain the party’s cause for the termination. If the parties do not reach a settlement before the end of the 30 days, then the Agreement shall terminate on the thirtieth day. In the event of a breach, LFUCG reserves the right to pursue any and all applicable legal, equitable, and/or administrative remedies against the contractor.
3. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:
  - (1) Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

Provided, however, that in the event a contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

4. If fulfillment of the contract requires the contractor to employ mechanic's or laborers, the contractor further agrees that it can and will comply with the following:

- (1) Overtime requirements: No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such a workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such a workweek.
- (2) Violation: liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section, the contractor and any subcontractor responsible therefor shall be liable for

the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) Withholding for unpaid wages and liquidated damages. LFUCG shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower-tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

5. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

6. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

7. The contractor shall include these requirements in numerical paragraphs 5 and 6 in each subcontract exceeding \$100,000 financed in whole or in part with Federal funding.

8. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 et seq.

9. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

10. The contractor shall include these requirements in numerical paragraphs 8 and 9 in each subcontract exceeding \$100,000 financed in whole or in part with Federal funds.

11. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 et seq.

12. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency regional office.

13. The contractor shall include these requirements in numerical paragraphs 11 and 12 in each subcontract exceeding \$100,000 financed in whole or in part with American Rescue Plan Act funds.

14. The contractor shall include this language in any subcontract it executes to fulfill the terms of this bid: “the subgrantee, contractor, subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights

Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with 'Limited English Proficiency' in any program or activity receiving federal financial assistance, 42 U.S.C. § 2000d et seq., as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this contract or agreement."

15. Contractors who apply or bid for an award of \$100,000 or more shall file the required certification that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency. Each tier certifies to the tier above that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier, up to the recipient. The required certification is included here:

a. The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

b. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

16. The contractor acknowledges and certifies that it has not been debarred or suspended and further acknowledges and agrees that it must comply with regulations regarding debarred or suspended entities in accordance with 24 CFR § 570.489(l). Funds may not be provided to excluded or disqualified persons.

17. The contractor agrees and certifies that to the greatest extent practicable, it will prefer the purchase, acquisition, and use of all applicable goods, products or materials produced in the United States, in conformity with 2 CFR 200.322 and/or section 70914 of Public Law No. 117-58, §§ 70901-52, also known as the Infrastructure Investment and Jobs Act, whichever is applicable.

18. The contractor agrees and certifies that all activities performed pursuant to any Agreement entered as a result of the contractor's bid, and all goods and services procured under that Agreement, shall comply with 2 C.F.R. § 200.216 (Prohibition on certain telecommunications and video surveillance services and equipment) and 2 C.F.R. 200 § 200..323 (Procurement of recovered materials), to the extent either section is applicable.

19. If this bid involves construction work for a project totaling \$10 million or more, then the contractor further agrees that all laborers and mechanics, etc., employed in the construction of the public facility project assisted with funds provided under this Agreement, whether employed by contractor, or contractor's contractors, or subcontractors, shall be paid wages complying with the Davis-Bacon Act (40 U.S.C. 3141-3144). Contractor agrees that all of contractor's contractors and subcontractors will pay laborers and mechanics the prevailing wage as determined by the Secretary of Labor and that said laborers and mechanics will be paid not less than once a week. The contractor agrees to comply with the Copeland Anti- Kick Back Act (18 U.S.C. § 874) and its implementing regulations of the U.S. Department of Labor at 29 CFR part 3 and part 5. The contractor further agrees to comply with the applicable provisions of the Contract Work Hours and Safety Standards Act (40 U.S.C. Section 327-333), and the applicable provisions of the Fair Labor Standards Act of 1938, as amended (29 U.S.C. et seq.). Contractor further agrees that it will report all suspected or reported violations of any of the laws identified in this paragraph to LFUCG.

Jacob Knights  
Signature

10/26/2022  
Date

## TRAFFIC SIGNAL AND CONTROL EQUIPMENT

We propose to deliver to the Lexington-Fayette Urban County Government, Division of Traffic Engineering loading dock at 1515 Old Frankfort Pike, Lexington, Kentucky, 40504, the following traffic signal and control equipment conforming to all specifications used by the Commonwealth of Kentucky, Division of Traffic, for like purpose within Varies days of receipt of purchase authorization:

Pricing for the following shall be good for 365 days from acceptance of bid.

---

---

### **Special Requirements:**

- All vehicle signals shall have a 5 position terminal strip mounted in the yellow section for signal and field wire connections.  
Note: This means there will be a total of 2 terminal strips in a 5-section signal.
  - Each pedestrian signal shall have a terminal strip large enough to accommodate signal and field wire connections.
  - All LED's in traffic Signals and Pedestrian Signals outlined in contract shall comply with Kentucky Transportation Cabinet specifications (attached) and current ITE/MUTCD specifications
  - All pedestrian signal housings, pedestal poles, pedestal bases, pedestrian signal upper/lower mounting arm assemblies, pedestrian push buttons, pedestrian push button boxes and signal entrance heads shall be powder coated black, equivalent to Pelco Products Inc. #P33 specifications.
  - All conflict monitor inputs shall be terminated in controller cabinet
  - All base mount cabinets shall have two (2) AC-Bus's (neutral bars)
- 

## **TRAFFIC SIGNAL CONTROLLER EQUIPMENT**

### **1. 2070L Complete with everything - Base Mount Cabinet #332:**

Note: 2070L traffic signal controller equipment shall meet following requirements:

Engine Board and CPU shall be compliant with the ATC Standard Draft 6.10 or newer.

The CPU performance shall be at least 760 MIPS.

Minimum required engine board memory: 64 MB Flash, 64 MB DRAM, and 1 MB SRAM

CPU carrier board shall include: 1 (one) USB port mounted on faceplate, 2 to 4 RJ45 10/100 Ethernet

Ports mounted on faceplate: 1 to 2 Ports connected to Subnet 1 and 2 Ports connected to Subnet 2,

1 (one) serial port capable of directly driving an ITS or ITS v2 traffic signal cabinet.

There shall be no batteries or moving parts such as fans or memory storage devices with rotating parts on the controller unit.

Controller hardware shall facilitate the use of the controller in 170 style (C1s and C11s connectors), ITS, and ITS version 2 cabinets.

The 1C shall have the latest version of Intelight MAXtime pre-installed on the module. This shall include any licensing required for the use of MAXtime. This also includes any costs required for the integration of firmware on the provided 1C Module. The Division of Traffic Operation will require that the manufacturer of the 1C send a sample a 1C loaded with MAXtime for testing before the contract is awarded.

### **OPERATING SYSTEM**

#### **O/S Version**

The Traffic Signal Controller shall use a Linux operating system (O/S) with kernel version 3.0 or later and shall include standard POSIX libraries for application support including real-time extensions of POSIX 1003.1b. To facilitate application level access to the ATC hardware, a Board Support Package (BSP) shall be provided by the controller manufacturer for access to hardware-specific drivers.

#### **O/S Updates**

Operating System updates shall be completed from a personal computer over an Ethernet connection, or directly from a USB flash drive plugged into the controller's front panel (If USB Available). The update process shall be automated and packaged as a simple executable file enabling the user to perform the update within a few steps. The O/S update shall allow a user to update the Linux Kernel (O/S) using one of the following two options: Update O/S and restore controller to factory defaults (delete all existing signal software and timing databases); OR update O/S and keep current controller software and other stored data.

#### Application Programming Interface (API)

The ATC hardware shall support an open architecture hardware and firmware platform interface for application programs to operate on the controller. The interface shall conform to the requirements of the ATC Application Programming Interface (API) standard (v02.06b or later). The bidder shall further certify that the equipment which he proposes to furnish is not equipment which has been rejected by any other governmental agency.)

2070L controller, completely operational with 1C CPU Module that has the latest version of Intelight Maxtime pre-installed on the module, 2A C1 Field I/O Module, 3B LCD Display Module, 4A Power Supply, Must be able to operate with the Lexington, Kentucky communication system.

#### **Traffic control cabinet # 332 or equivalent, natural unpainted aluminum, and 170 terminal facility completely wired and complete with:**

- 01) Rack
- 02) Input file
- 03) Output file
- 04) Power supply PDA2 (SHA 1210 to be mounted external to power supply)
- 05) Relay panel
- 06) Relays
- 07) Surge protection
- 08) Main circuit breakers, Auxiliary circuit breakers and Alternate circuit breakers
- 09) Terminal blocks for signal field connections, loops and push buttons.
- 10) Fan
- 11) LED Strip Light - Mounted in Rear
- 12) LED Strip Light - Mounted in Front
- 13) GFI outlet
- 14) Programmable flash (red or yellow) for each phase
- 15) Locks and keys Corbin #2
- 16) Lifting eyes shall be removable
- 17) Interchangeability of isolation relay and logic relay shall not be possible.
- 18) Manual pushbutton with 6 foot cord, operated from an auto/manual switch located in the police panel.
- 19) Load switches
- 20) Conflict Monitor, EDI 2018 Kclip
- 21) 2070L controller, completely operational with 1C CPU Module, 2A C1 Field I/O Module, 3B LCD Display Module, 4A Power Supply, Intelight Maxtime Software.
- 22) \*Surge protection for all input/output circuits (See Note 1)
- 23) \*Surge protection for each loop circuit (See Note 1)
- 24) Additional ground connection
- 25) 242L DC Isolators for inputs
- 26) (8) 222-C Vehicle Detector Amplifiers
- 27) (1) Reliance Controls, Signa Series C30A1L Transfer Switch
- 28) (1) ASCO, 200 Series, Model 258 (EDCO SHA-1250) Surge Protective Device

#### **Note 1 (#332 Traffic Control Cabinet or Equivalent):**



### **Surge Protection Panel for 332 Controller Cabinet, with Lane Use Control**

- Panel shall be predrilled to fit neatly into Cabinet.
- Panel shall be prewired with Male and Female (MS type), Quick Disconnect Connectors with Male connector physically mounted to panel.
- Female connector shall have a 6-foot wire soldered to each pin used in the connector.
- Each wire shall be labeled in respect to the connector.
- Each panel shall come with a schematic showing where each wire is terminated.
- The following surge protection shall be prewired and mounted to panel:
  - (48) Load Switch Outputs
  - (8) Pedestrian Push Buttons
  - (1) Additional Ground
- The following surge protection shall be provided, but not wired to panel:
  - (16) Vehicle Detector Inputs (equivalent to EDCO, SRA-6LCB).
  - (Surge protection panel to be equivalent to Path Master ZPAN-7003)

**In addition to these specifications, all specifications of the Commonwealth of Kentucky, Department of Highways shall apply.**

### **CABINETS**

Note: Cabinet fan unit and vents shall be mounted under rain shield. Cabinets shall be of natural unpainted aluminum with standard Corbin #2 locks on the doors. Cabinets must have channels for mounting terminal facilities on the rear and sides.

Channel mounting

F cabinet: rear, 5" center

K cabinet: rear, 18 3/4" center, sides, 8 1/2" center

M cabinet: rear, 18 3/4" center, sides, 8 1/2" center

P-38 cabinet: rear, 18 3/4" center, sides, 8 1/2" center

R Cabinet: rear, 18 3/4" center, sides, (4 channels) 6 1/2", 3", 8 1/2" center

### **2. Surge Protection Panel for 332 Controller Cabinet, with Lane Use Control**

- Panel shall be predrilled to fit neatly into Cabinet.
- Panel shall be prewired with Male and Female (MS type), Quick Disconnect Connectors with Male connector physically mounted to panel.
- Female connector shall have a 6-foot wire soldered to each pin used in the connector.
- Each wire shall be labeled in respect to the connector.
- Each panel shall come with a schematic showing where each wire is terminated.
- The following surge protection shall be prewired and mounted to panel:
  - (48) Load Switch Outputs
  - (8) Pedestrian Push Buttons
  - (4) Lane Use Control Interconnect Lines
  - (1) Communication Unit (equivalent to EDCO PCB642C-008B with Base and C2 Harness for Comm. Phone Lines (not wired through connectors).
  - (1) Additional Ground
- The following surge protection shall be provided, but not wired to panel:
  - (16) Vehicle Detector Inputs (equivalent to EDCO, SRA-6LCB).
  - (Surge protection panel to be equivalent to Path Master ZPAN-7003)

### **3. 2070L w/Intelight Maxtime Software Complete with everything - Base Mount Cabinet #332 with Lane Use Control:**

2070L with Lane Use Control wiring, software and hardware replacement. This includes all items in #1 above with an additional output file, conflict monitor, etc. for Lane Use Control.

4. **2070L w/Intelight Maxtime Software Complete with everything - Pole Mount Cabinet #336S:**  
This item is equivalent to #1 above except that the traffic control cabinet should be a Pole Mount type #336S.
5. **Traffic Control Cabinet #1:** Same as in #1 above excluding the 2070L Controller
6. **Traffic Control Cabinet #2:** Same as in #1 above excluding the 2070L controller, software, conflict monitor, load switches, and vehicle detectors.
7. **Traffic Control Cabinet #3:** Same as in #3 above excluding the 2070 controller, software, conflict monitor, load switches, and vehicle detectors.
8. **Traffic Control Cabinet - Pole Mount # 336S:** Same as in #1 above with the exceptions that the cabinet is a Pole Mount #336S or equivalent and excluding the 2070 Controller.
9. **2070L 332 Base Mount Rack/Terminal Facility:** Completely wired without cabinet
10. **2070L 332 Base Mount Rack/Terminal Facility for Lane Use Control:** Completely wired without cabinet
11. **2070L Pole Mount (336S) Rack/Terminal Facility:** Completely wired without cabinet
12. **Flasher Cabinet #1:** Pole mount, Dimensions 34H" x 19W" x 17D", back panel, pole mounting hardware, Corbin #2 Lock with (2) Keys.
13. **Flasher cabinet with NEMA 3 flasher:** 20 amp circuit breaker, terminal strip and Surface mount surge protector, all installed and completely wired. Cabinet dimensions 34H" x 19W" x 17D", pole mounting hardware, Corbin #2 Lock with (2) Keys.
14. **Time of Day Controller Cabinet:** Cabinet will include: Nema 3 Flasher, 20 amp circuit breaker, terminal strip, surge protector, Corbin #2 lock with 2 keys, and time clock (Time Clock: Applied Info AI-500-070, including 5-year communication plan, configured for Glance subsystem, no substitutes), all installed and completely wired in cabinet. Cabinet shall be 34H" x 19W" x 17D" with pole mounting hardware
15. **Time Clock #1:** Applied Info AI-500-070, including 5-year communication plan, configured for Glance subsystem, No Substitutes
16. **Conflict Monitor:** NEMA 12-channel, ENHANCED
17. **Conflict Monitor:** Model EDI 2010 ECL, ENHANCED
18. **Conflict Monitor, EDI 2018 Kclip**
19. **MonitorKey CMU Data Key Programming Tool:**  
For EDI 2018 Kclip Conflict Monitor, no substitutes
20. **Inductive loop vehicle detector:** Dual channel programmable LCD with delay and extend, LCD display displays status and function of detector, loop frequency and inductance.
21. **DC isolator:** 242L with fuse (Units using a 5-ohm 10-Watt resistor or equal design will not be accepted).

- 22. **Switch pack:** Model 200 with indicators
- 23. **Flasher:** NEMA 3, alternate circuit, model 204
- 24. **Automated Conflict Monitor Tester:** ATSI Tester Model PCMT 8000 with all available Monitor Tester Cables, or equivalent (cut sheets must be provided with equivalent showing equivalent functionality, equipment and operations), see specifications

### **PEDESTRIAN SIGNAL EQUIPMENT**

**Note:** All pedestrian signal LED lens shall meet current ITE/MUTCD specifications and design requirements by Lexington-Fayette Urban County Government Division of Traffic Engineering and Kentucky Transportation Cabinet

All pedestrian signal housings shall be cast aluminum.

All pedestrian signals shall come with two (2) Pelco SE-0499-P02 (threaded plastic, octagonal closure cap)

- 25. **LED Countdown Pedestrian Signal w/Housing (ICC):** International legend, one-section, one-way complete w/o clamshell mounting hardware for pole mount, with top and bottom plugs removed, powder coated black.
- 26. **LED Countdown Pedestrian Signal Module:**
- 27. **LED Countdown Pedestrian Signal with Mounting Hardware Kit: International Legend**  
one-section, one-way, without clamshell mounting hardware, top and bottom plugs removed, two (2) 1&1/2 inch x 10 inch Nipples (equivalent to Pelco SE-0436-10), one (1) Tri-Bolt ELL (equivalent to Pelco SE-0514), one Tri-Stud TEE (equivalent to Pelco SE-0513), one (1) Tri-Bolt Hardware Kit with 5/16 inch, 18 gasket (equivalent to Pelco SE-5048), one (1) Tri-Stud Hardware Kit without 5/16 inch, 18 gasket (equivalent to Pelco SE-5035), one (1) Top Pole Plate (equivalent to Pelco SE-0381), one (1) Bottom Pole Plate (equivalent to Pelco SE-0382/SE-0382) has 1&1/2 inch threaded hole for conduit, powder coated black
- 28. **LED Countdown Pedestrian signal, 1-Way:** International legend, one-section, one-way, pedestal mount, square aluminum ped base with 4 inch threaded opening in top (with (3) 3/8" allen head stainless steel set screws) and access hole with cover on one side, 4 inch x 9 foot spun aluminum pedestal pole, threaded on one end, one-way post top pedestal pole bracket (set screw), (bracket to have tri-bolt studs for mounting signal), powder coated black
- 29. **LED Countdown Pedestrian signal, 2-way:** International legend, two-way, complete with: two (2) one-section ICC pedestrian signals, one (1) pedestrian signal two-way top bracket (equivalent to Path Master K2WB-6130B 2WPT black), one (1) pedestal pole two-way top bracket (equivalent to Path Master K2WP-6130B 2WPT black), removable plugs for top and bottom ports, one (1) square aluminum ped base with 4 inch threaded opening in top (with (3) 3/8" allen head stainless steel set screws) and access hole with cover on one side, one (1) 4 inch x 9 foot spun aluminum pedestal pole, threaded on one end, powder coated black
- 30. **Pedestal pole:** Spun aluminum, 4 inch x 9 foot, threaded on one end (equivalent to Path Master VPB-5100-09), powder coated black
- 31. **Pedestal Base w/reinforced collar:**  
Pedestal base square w/reinforced collar, aluminum, 4-inch threaded opening with (3) SS set screws, (4) 3/4-inch x 18-inch anchor bolts, powder coated black. Pelco #PB5335 with Pelco #P5325 collar, powder coated black

32. **Pedestal Pole, 10-foot, Painted Black:**  
Spun aluminum, 4 inch x 10 foot, threaded on one end, powder coated black
33. **Pedestal Base anchor bolts, 3/4-inch x 18-inch, set of four:**
34. **Pedestal Base anchor bolts, 3/4-inch x 26-inch, set of four:**
35. **Pedestrian signal top bracket:** Two-way (equivalent to Path Master K2WB-6130B 2WPT black)
36. **Pedestal pole (2-way) mounting brackets:** one (1) Two-way (equivalent to Path Master 2WP-6130B 2WPT black) and one (1) pedestrian signal two-way top bracket (equivalent to Path Master K2WB-6130B 2WPT black),
37. **Pedestal pole top bracket:** One-way (equivalent to Path Master PET-1201), black
38. **Pedestrian Push Button Box:** Black cast iron enclosure for pedestrian pushbutton, enclosure shall have 3/4-inch threaded opening for conduit attachment, black, no substitute.
39. **Pedestrian Push Button, Rees:** Rees 01371-912 Recessed Chrome Button, no substitute.
40. **Pedestrian Push Button, Bulldog:** Bulldog momentary, rectangular, black, must fit standard rectangular pedestrian push button box, Baldwin & Sours Part #RBDLMB, No Substitutes.
41. **Pedestrian Push Button with Box:** Bulldog Button (Baldwin & Sours #RBDLMB), no substitutes) with black rectangular cast iron enclosure for button, enclosure shall have 3/4-inch threaded opening for conduit attachment, no substitute.
42. **Pedestrian Push Button Assembly, 1-direction:** For (1) direction, to include: (1) Pedestrian signal base (Square aluminum, 4 inch threaded opening in top (with (3) 3/8" allen head stainless steel set screws), access hole with cover on one side, Path Master VPB-5300) (1) Pedestal Pole Cap, equivalent to Path Master VPB5401, Acorn Cap (2) Push Button for Walk Signal Signs (9"x 12") #R10-3E (Right Arrow and Left Arrow, (1) Pedestal Pole: Spun aluminum, 4"x 42", threaded on one end (1) Pedestrian Push button w/box: Baldwin & Sours #RBDLMB Button, black cast iron enclosure for button, powder coated black, no substitute
43. **Pedestrian Push Button Assembly, 2-direction:** For (2) directions, to include the same as number 45 with the following exceptions: (2) Push Button for Walk Signal Signs (9"x 12") R10-3E (Right arrow and Left Arrow), (2) Pedestrian Push buttons w/box: Baldwin & Sours #RBDLMB Button, black cast iron enclosure for button, powder coated black, no substitute.
44. **Pedestrian Push Button Sign with a Left Arrow:** R10-3E, (9" X 15"), engineer grade sheeting, complete on .080 aluminum blank and pre-drilled for installation.
45. **Pedestrian Push Button Sign with a Right Arrow:** R10-3E, (9" X 15"), engineer grade sheeting, complete on .080 aluminum blank and pre-drilled for installation.
46. **Pedestal Pole Cap:** Equivalent to Path Master VPB5401 (Acorn Cap), powder coated black
47. **Pedestrian Signal (Single) Mounting Hardware Kit:** To include: two (2) 1&1/2 inch x 10 inch Nipples (equivalent to Pelco SE-0436-10), one (1) Tri-Bolt ELL (equivalent to Pelco SE-0514), one (1) Tri-Stud TEE (equivalent to Pelco SE-0513), one (1) Tri-Bolt Hardware Kit with 5/16 inch, 18 gasket (equivalent to Pelco SE-5048), one (1) Tri-Stud Hardware Kit without 5/16 inch, 18 gasket (equivalent to Pelco SE-5035), one (1) Top Pole Plate (equivalent to Pelco SE-0381), one (1)

Bottom Pole Plate (equivalent to Pelco SE-0382/SE-0382) has 1&1/2 inch threaded hole for conduit, powder coated black

### **VEHICLE SIGNAL EQUIPMENT**

**Note: All Vehicle signal LED lens shall meet current ITE/MUTCD specifications and design requirements by Lexington-Fayette Urban County Government, Division of Traffic Engineering and Kentucky Transportation Cabinet**

48. **LED Vehicle signal with Back-plate, 12-12-12:** 12 inch, black, polycarbonate, three-section, red/yellow/green, two cutaway hoods, one tunnel hood and Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp, see attached back-plate specifications
49. **LED Left Turn Vehicle signal, 12-12-12 with Back-plate:** 12 inch, black, polycarbonate, three-section, red/left turn yellow arrow/left turn green arrow, two cutaway hoods, one tunnel hood and Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp, see attached back-plate specifications
50. **LED 5-Section Vehicle signal with Back-plate:** 12 inch, black, polycarbonate, five section, cluster configuration, red/yellow/green, left turn yellow arrow/left turn green arrow, three cutaway hoods, two tunnel hoods and Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp, tri-bolt two-face lower flat arm assembly, tri-bolt four-face upper bracket arm assembly with screw-in plugs, six position terminal strip with #8 screws mounted each yellow section, see attached back-plate specifications
51. **LED 4-Section Vehicle signal with Back-plate:** 12 inch, black, polycarbonate, four-section, red/yellow/ green/left turn green arrow, three cutaway hoods, one tunnel hood and Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp, see attached back-plate specifications
52. **LED 4-Section FYA Vehicle signal with Back-plate:** 12 inch, black, polycarbonate, four-section, Left Turn Red, Two (2) Left Turn Yellow, Left Turn Green two cutaway hoods, two tunnel hoods and Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp, see attached back-plate specifications
53. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Green
54. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Yellow
55. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Red
56. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Left Turn Green
57. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Left Turn Yellow
58. **Vehicle Signal Lens, LED Retrofit:** 12-inch, Left Turn Red
59. **LED Signal section (Red):** 12 inch to include tunnel hood, red lens, black polycarbonate and Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp.
60. **LED Signal Section (Yellow):** 12 inch to include: tunnel hood, yellow lens, black polycarbonate

and Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp.

61. **LED Signal Section (Green):** 12 inch to include: cutaway hood, green lens, black polycarbonate and Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp.
62. **Solar RRFB System (TAPCO) #1:** System shall consist of two (2) complete units, w/motion sensors ready to install with all necessary components and fully operational, upon installation (see enclosed specifications for detail and complete list of components, Units shall meet MUTCD requirements. Must be able to program unit on-site
63. **Solar RRFB System (TAPCO) #2:** System shall consist of one (1) complete unit w/motion sensor ready to install with all necessary components and fully operational, upon installation (see enclosed specifications for detail and complete list of components, Units shall meet MUTCD requirements. Must be able to program unit on-site
64. **Solar RRFB Bulldog III Kit (TAPCO):** Kit shall include one (1) Bulldog III yellow push button w/LED, one (1) button box, cabling, one (1) 9" x 12" white Push button To Turn on Warning Lights with Hand Symbol (R10-25)
65. **Solar RRFB XAV2-LED Push Button:** See enclosed specifications, unit shall also include cabling, one (1) 9" x 12" white Push button To Turn on Warning Lights with Hand Symbol (R10-25)
66. **Dual Red Mounting Hardware, Span Wire Mount:**  
Kit shall include two (2) Tri-Stud upper arm assemblies, 17-inch CTC, Black (Pelco #SE-5059), Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS), One (1) Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp
67. **Dual Red Mounting Hardware, Mast Arm Mount, Vertical:**  
Kit shall include One (1) ASTRO-BRAC Assembly: #AB-0168-4-120-SS, Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS)
68. **LED Dual Red Vehicle signal with Mtg. Hardware., Span Wire Mount, with Back-plate:**  
12 inch, black, polycarbonate, four-sections: red/red/yellow/green, three cutaway hoods, one tunnel hood, complete with two (2) Tri-Stud upper arm assemblies, 17-inch CTC, Black (Pelco #SE-5059), Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS), One (1) Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp, see attached back-plate specifications
69. **LED Dual Red Vehicle signal with Mtg. Hardware., Mast Arm Mount, with Back-plate:**  
12 inch, black, polycarbonate, four-sections: red/red/yellow/green, three cutaway hoods, one tunnel hood, complete with One (1) ASTRO-BRAC Assembly: #AB-0168-4-120-SS, Two (2) Signal to signal mounting kits (Pelco #SE-3117-SS), see attached back-plate specifications
70. **Tri-Stud slip fitter assembly, for 2-way signal:**  
Pelco #SE-5008, No Substitutes (Pedestal Pole Mount)

**LED LANE USE CONTROL EQUIPMENT (See Specifications)**

- All LED Lane Control Signals and LED Message Signs shall meet specification requirements by National Sign and Signal Company (or equivalent) and MUTCD.
- All LED Message Sign housings shall be factory drilled top and bottom for PELCO tri-stud (span wire and mast arm mount) hanger and power cable entry

71. **LED Lane Use Control signal/sign, 24-inch x 24-inch:**  
2-Way Lane Control Signal, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.  
Message 1: Red X (18" x 18" Display)  
Message 2: Green Arrow (18" x 18" Display)
72. **LED Lane use control signal/sign, 36-inch x 36-inch #1:**  
2-Way Lane Control Signal/Sign, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.  
Message 1: Red X (18" x 18" Display)  
Message 2: Green Arrow (18" x 18" Display)  
Message 3: White R3 Sign w/o Only beneath Arrows (30" x 30" Display)
73. **LED Lane use control signal/Sign, 32-inch x 38-inch Tall #1:**  
(27" x 33" Display), 1-Way Lane Control, White LED's, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.  
Message 1: R3-5A (Thru Arrow w/Only below Arrow)  
Message 2: R3-6L (Thru and Left Turn Arrow Combination)
74. **LED Lane use control Message Sign, 30-inch x 39-inch:**  
1-way, White LED's, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.  
Message: LANE ENDS MERGE RIGHT (5-inch letter height)
75. **LED Lane use control Message Sign, 36-inch x 36-inch #2:**  
1-way White LED's, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.  
Message: RIGHT LANE MUST TURN RIGHT
76. **LED Lane use control signal, 30-inch x 36-inch:**  
1-Way, White LED's, Lane Control, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.  
Message 1: R3-5R Right Arrow with Only  
Message 2: Double Headed Arrow (Left and Right)
77. **LED Lane use control signal, 32-inch x 38-inch Tall #2:**  
(27" x 33" Display) 2-Way Lane Control, complete with entrance head, mounting hardware and span wire attachments, complete unit painted black and ready to install.  
Message 1, Side 1: R3-5A (Thru Arrow w/Only below Arrow)  
Message 1, Side 2: Red X (18" x 18" Display)

## **SIGNAL CABLE**

78. **Loop Lead-In:** IMSA 20-2 with copper shield, 14 gauge, 19 strand, 2-pair (priced in lengths of 1000 feet), Delivered on a Wooden Reel.
79. **Loop Lead-In:** IMSA 20-2 with copper shield, 14 gauge, 19 strand, 4-pair (priced in lengths of 5,000 feet), Delivered on five (5) 1,000-foot Wooden Reels.
80. **Signal Cable:** IMSA 20-1, 7 conductor, 14 gauge, 7 strand (1000 ft. Wooden Reel)
81. **Signal Cable:** IMSA 20-1, 16 conductor, 14 gauge, 7 strand (1000 ft. Wooden Reel)

- 82. **Signal Cable:** IMSA 19-1, 14-awg stranded copper, 2-conductor w/o Shield (1000-ft)
- 83. **Messenger Cable:** 8M High Strength, 5/16" Galvanized, Class A, (500 ft. Wooden Reel only).
- 84. **Messenger Cable:** 8M High Strength, 5/16" Galvanized, Class A, (1000 ft. Wooden Reel only).
- 85. **Messenger Cable:** 10M High Strength, 3/8" Galvanized, Class A, (500 ft. Wooden Reel only).
- 86. **Messenger Cable:** 10M High Strength, 3/8" Galvanized, Class A, (1000 ft. Wooden Reel only).
- 87. **Metal Cabinet Filter for 332 Cabinet, 12" x 16" x 1"**
- 88. **Metal Cabinet Filter for 336S Cabinet, 6" x 16" x 1"**

### **MISCELLANEOUS EQUIPMENT**

- 89. **Bi-Modal LED Traffic Signal Module, 12-inch, Yellow Arrow/Yellow Arrow**
- 90. **Traffic Bearing Junction Box w/Lid:**  
Box: Quazite #PG1730BA12, Lid: Quazite #PG1730HH0044 (No Substitutes)
- 91. **Signal Tether Clamp:** Tri-Stud, breakaway, 2-parts,  
(equivalent to PELCO SE-5037 and SE-5038)
- 92. **Sign Tether Bracket:** Equivalent to PELCO SE-5046-19
- 93. **Sign Tether Bracket:** Equivalent to PELCO SE-5046-24
- 94. **Strand Vise:** 3/8 inch (Reliable 5152), no substitute.
- 95. **Strand Vise:** 5/16 inch (Reliable 5151), no substitute.
- 96. **Strand Vise:** 1/4 inch (Reliable 5150), no substitute.
- 97. **Strand Link:** 3/8 inch (Reliable 5002), no substitute.
- 98. **Strand Link:** 5/16 inch (Reliable 5001), no substitute.
- 99. **Strand Link:** 1/4 inch (Reliable 5000), no substitute.
- 100. **Reducing Strand Link:** 3/8 inch to 5/16 inch (Reliable #5022), no substitutes
- 101. **Construction and mounting hardware for four-way adjustable signal:**  
Four-way top and bottom brackets, Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp
- 102. **Construction and mounting hardware for three-way adjustable signal:** Three-way top and bottom brackets, Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp
- 103. **Construction and mounting hardware for two-way adjustable signal:** Two-way top and bottom brackets, Tri-Stud Mounting hardware kit: Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp



104. **Tri-Bolt Span Wire Assembly:** Pelco #SE-5164-SB-SS-P=Black Span Wire Hanger Assy. w/PAL Balance Adjuster span clamp
105. **School Sign Assembly:**  
Hardware and signals gloss black, signal sections polycarbonate, to include:
- one (1) S5-1 24" x 48" standard highway sign, 3M Hi-Intensity sheeting (Speed Limit to be specified upon order)
  - two (2) 1.5 inch x 10 inch nipple (Pelco SE-0436-10 equivalent)
  - two (2) Tri-Stud Tee's (Pelco SE-0513 equivalent)
  - two (2) Pole Plates (Pelco SE-0382 equivalent)
  - two (2) 12 inch LED signal sections, cutaway hoods (as per signal specifications)
  - one (1) 1.5 inch x 42.5 inch nipple (Pelco SE-0436-42.5 equivalent)
  - two (2) signal closure kit (Pelco SE-3054 equivalent)
  - three (3) 1 7/8 inch nipple clamp (Path Master GRCLAMP equivalent)
106. **School Sign Assembly with Time of Day Controller/Cabinet:** Cabinet will include: Nema 3 Flasher, 20 amp circuit breaker, terminal strip, surge protector, Corbin #2 lock with 2 keys, and time clock (Time Clock: Applied Info AI-500-070, including 5-year communication plan, configured for Glance subsystem, No Substitutes), all installed and completely wired. Cabinet shall be 34H" x 19W" x 17D" with pole mounting hardware. School sign assembly will include: one (1) S5-1 24" x 48" standard highway sign with 3M Hi-Intensity sheeting (Speed Limit to be specified upon order), two (2) 1.5 inch x 10 inch nipple (Pelco SE-0436-10 equivalent), two (2) Tri-Bolt Tee's (Pelco SE-0513 equivalent), two (2) Pole Plates (Pelco SE-0382 equivalent), two (2) 12-inch polycarbonate, black, signal sections with yellow LED lens and cutaway hoods, one (1) 1.5 inch x 42.5 inch nipple (Pelco SE-0436-42.5 equivalent), two (2) signal closure kit (Pelco SE-3054 equivalent), three (3) 1 7/8 inch nipple clamp (Path Master GRCLAMP equivalent). All hardware to be powder coated black.
107. **Aerial Cable Ties:** Panduit PLT 3H TL100 (No Substitute), per 1000.
108. **Cable Ring, 2-inch:** Std. Length, Copperweld, must fit 5/16-inch diameter messenger cable min. order = 500).
109. **Cable Ring, 3.5-inch:** Std. Length, Copperweld, must fit 5/16-inch diameter messenger cable.
110. **Signal Bracket, Mast Arm, Vertical Mount:** Astro-Brac #AS-0138-2-120, 37-inch Tube, 120-inch cable, Cluster Design
111. **Signal Bracket, Mast Arm, Vertical Mount:** Astro-Brac #AS-0125-3-120, 120-inch cable, for 12-12-12 Standard Signal.
112. **Sign Bracket, Mast Arm, Vertical Mount, 24:** Astro-Brac #AS-0142-24-120 cable
113. **Sign Bracket, Mast Arm, Vertical Mount, 30:** Astro-Brac #AS-0142-30-120 cable
114. **Signal Bkt., Mast Arm, Horizontal Mount:** Astro-Brac #AS-0125-3-120, for 12-12-12 Std. Signal.
115. **Signal Bracket, Mast Arm, Free Swinging Mount:** Astro-Brac #AB-3014-L, 120-inch Cable, Clevis Hanger opening must be 3/4-inch (no substitute)
116. **Power Supply, Solar Power:** 200-watt, 12-VDC

**117. Iteris Vantage Universal Camera Mounting Bracket**

for video detection cameras (no substitutes)

**118. Mast Arm Mounting Assembly for Video Detection Cameras:**

Assembly shall include One (1) PELCO #AB0175 (74-inch Tube) and One (1) complete PELCO #AS3009, Stellar Series Clamp Kit w/120-inch SS cable (No Substitute)

**VIDEO DETECTION EQUIPMENT, Iteris (No Substitutes)**

Successful Bidder shall provide repair support for repairs made by the LFUCG after warranty period, provide two year repair warranty for equipment with no exceptions for lightning damage, provide any/all short hook-up cables completely assembled with necessary connectors, give LFUCG the option of pole or span wire mounting hardware at same cost.

**119. Video Detection System (8-Phase):**

- System shall consist of all necessary equipment and components to fully detect an 8-phase intersection. Including 4 processor Modules, 4 extension modules, Four color cameras with strain pole mounting brackets
- This unit shall be capable of 100% operation, in all weather conditions, 24-hrs. per day
- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a camera is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E (332 cabinet) and plug into a detection slot.
- Cameras shall have motorized Focus and Zoom control.

**120. Video Detection System (4-Phase):**

- System shall consist of all necessary equipment and components to fully detect a 4-phase intersection. Including 2 processor modules, 2 extension modules, 2-color cameras with strain pole mounting brackets
- This unit shall be capable of 100% operation, in all weather conditions, 24-hrs. per day.
- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a camera is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E (332 cabinet) and plug into a detection slot.
- Cameras shall have motorized Focus and Zoom control.

**121. Video Detection System (2-Phase):**

- System shall consist of all necessary equip. and components to fully detect 2-Phase's, including one 4 channel processor, one extension module, one color Camera a with strain pole mounting bracket
- This unit shall be capable of 100% operation, in all weather conditions, 24-hours per day.
- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a camera is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop Computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E (332 cabinet) and plug into a detection slot.
- Cameras shall have motorized Focus and Zoom control.

**122. Video Detection System (3-Phase):**

- System shall consist of all necessary equip. and components to fully detect 3-Phase's, including one 4 channel processor module, two extension modules, One color Camera a with strain pole mounting bracket
- This unit shall be capable of 100% operation, in all weather conditions, 24-hours per day.

- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a camera is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop Computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E (332 cabinet) and plug into a detection slot.
- Cameras shall have motorized Focus and Zoom control.

123. **Video Detection Processor:** Equivalent to Iteris #493065001

124. **Video Detection Extension Module:** Equivalent to Iteris #493065301, each extension module shall come with one 24-inch extension module cable completely assembled w/necessary connectors.

125. **Iteris LAM (Lens Adjustment Module:**  
Includes: One (1) ADV-LAMVIEW vantage camera lens adjustment module w/display in case advanced LamModule & One (1) TLM-0841C Video security LCD color monitor (No Substitutes)

126. **Iteris Versa Cam Package, Complete (No Substitutes)**

127. **PolyPhaser Surge Suppression Unit:** Equivalent to PolyPhaser Part #IS-75BB+/-1.5 U/M

128. **Iteris Video Detection Color Camera.**

129. **Video Detection/Power Composite Cable, #1:**  
Cable shall be 500-ft on a wooden reel, Equivalent to Baldwin & Sours #9-1545, no substitute

130. **Video Detection/Power Composite Cable, #2:**  
Cable shall be 1,000-ft on a wooden reel, Equivalent to Baldwin & Sours #9-1545, no substitute

131. **Solar Powered School Speed Limit When Flashing Signal:**  
**Unit shall be fully self contained system and come complete with:**

- Two (2) 12-inch LED Yellow signals (Black polycarbonate housing) with mounting hardware.
- School Speed Limit When Flashing Sign (Speed determined when order is placed), with mounting hardware.
- One (1) Cabinet (Prewired) with surge protection, #2 Corbin lock and mounting hardware (cabinet shall be 34H" x 19W" x 17D" to accommodate all necessary batteries and equipment).
- One (1) time clock and solar controls: Applied Info AI-500-070, including 5-year communication plan, configured for Glance subsystem. One (1) 900-011-02 DC Backpanel. All completely installed and wired into cabinet, No Substitutes.
- One (1) 4-inch Spun aluminum pedestal pole (15-FOOT).
- One (1) Aluminum pedestal Base (Equivalent to Pelco Square Aluminum Pedestal Base.
- One (1) Solar Panel with mounting hardware.
- Batteries: Batteries shall be spill proof, Maintenance Free, Long life deep-cycle, field proven, capable of 8-hours of continuous operation on a single charge.

132. **Solar Powered School Speed Limit When Flashing Signal (pole mount components and span wire mounted) signals and sign:**

**Unit shall be fully self contained system and come complete with:**

- Two (2) 12-inch LED Yellow signals (Black polycarbonate housing) with mounting hardware.

- One (1) School Speed Limit When Flashing Sign (Speed limit shall be 25 mph), with mounting hardware.
- One (1) Cabinet (Prewired) with surge protection, #2 Corbin lock and mounting hardware (cabinet shall be 34H" x 19W" x 17D" to accommodate all necessary batteries and equipment).
- One (1) time clock and solar controls: Applied Info AI-500-070, including 5-year communication plan, configured for Glance subsystem. One (1) 900-011-02 DC Backpanel. All completely installed and wired into cabinet, No Substitutes.
- All necessary materials to mount components to a wood pole.
- All necessary materials to mount signals and sign to overhead span.
- One (1) Solar Panel with mounting hardware.
- Batteries: Batteries shall be spill proof, Maintenance Free, Long life deep-cycle, field proven capable of 8-hours of continuous operation on a single charge.
- Capable of operating properly in a highly shaded area.

**133. Solar Powered School Speed Limit When Flashing Signal (pole mount components and Mast Arm mounted) signals and sign:**

**Unit shall be fully self contained system and come complete with:**

- Two (2) 12-inch LED Yellow signals (Black polycarbonate housing) with mounting hardware.
- One (1) School Speed Limit When Flashing Sign (Speed limit shall be 25 mph),with mounting hardware.
- One (1) Cabinet (Prewired) with surge protection, #2 Corbin lock and mounting hardware (cabinet shall be 34H" x 19W" x 17D" to accommodate all necessary batteries and equipment).
- One (1) time clock and solar controls: Applied Info AI-500-070, including 5-year communication plan, configured for Glance subsystem. One (1) 900-011-02 DC Backpanel. All completely installed and wired into cabinet, No Substitutes.
- All necessary materials to mount components to a strain pole.
- All necessary materials to mount signals and sign to overhead mast arm.
- One (1) Solar Panel with mounting hardware.
- Batteries: Batteries shall be spill proof, Maintenance Free, Long life deep-cycle, field proven capable of 8-hours of continuous operation on a single charge.
- Capable of operating properly in a highly shaded area.

**134. Surge Arrestor (Digital Radio): See specifications**

**135. Accessible Pedestrian Detection System (8-Directions):**

See enclosed specifications. Each system shall be provided with any needed programming equipment, and all necessary components to be fully operational upon installation in the field. No special tools shall be required to perform installation. Each system shall be provided with an installation and operation manual.

**136. Accessible Pedestrian Detection System (4-Directions):**

See enclosed specifications. Each system shall be provided with any needed programming equipment, and all necessary components to be fully operational upon installation in the field. No special tools shall be required to perform installation. Each system shall be provided with an installation and operation manual.

**137. iNavigator #iN2 2-wire Push Button Station #1: Pole unit assembly #iN2-3-T-N-0-B-BD, Complete with sign and one (1) iNavigator Bluetooth Dongle (iN-DGL), Sign shall be double sided with left arrow on one side and right arrow on reverse side,**

**138. iNavigator #iN2 2-wire Push Button Station #2: Pole unit assembly #iN2-3-T-N-0-B-BD,**

Each unit shall come with one (1) sign (sign shall be double sided with left arrow on one side and right arrow on reverse, one (1) #IPHCU3W Ped Head Control Unit, one (1) #850-388-25 25-foot iN3 PBS Cable, (1) iNavigator Bluetooth Dongle (iN-DGL

139. **iNavigator Ped Head Control Unit Assy.:** Complete with one (1) # iPHCU3W Ped Head Control Unit, one (1) #850-388-25 25-foot iN3 PBS Cable
140. **ADA Push Button Adaptor, Polara #iN-90DEGADPTR w/Black Powdercoat**
141. **Astro Bracket:**  
Pelco #AS3009, Stellar Series Clamp Kit w/120-inch stainless steel cable (No Substitute)
142. **Lock Key:**  
Corbin #2 (No Substitutes)
143. **Police Panel Key:**  
Long Shank (No Substitutes)
144. **Manual Operation Police Pushbuttons:**  
Completely made up with 12-foot type SVO coiled cord and ¼-inch stereo plug.
145. **2070L Traffic Signal Controller with Software:**  
Completely operational with 1C CPU Module, 2A C1 Field I/O Module, 3B LCD Display Module, 4A Power Supply, Intelight Maxtime Software (current version).
146. **1C CPU Module, #1 (for 2070L Traffic Signal Controller):**  
Completely operational with current version of LFUCG Intelight software
147. **1C CPU Module, #2 (for 2070L Traffic Signal Controller):**  
Completely operational w/o current version of LFUCG Intelight software, but must support software once installed
148. **2A C1 Field I/O Module (for 2070L Traffic Signal Controller):**  
Completely operational
149. **3B LCD Display Module (for 2070L Traffic Signal Controller):**  
Completely operational
150. **4A Power Supply (for 2070L Traffic Signal Controller):** Completely operational
151. **Solar Powered Crosswalk Lights, Active Beacon:** (see specifications)
152. **Solar Powered 24-hour Flashing Beacon:** (See Specifications)
153. **LED Street Name Sign:** Mfg. Southern Manufacturing (no substitute), See specifications
154. **Tri-Stud Adaptor Kit:** Kit shall include one (1) Pelco #SE-0503 with (3) Threaded Studs and one (1) Pelco #SE-5048 Hardware Kit, Tri-Stud w/Gasket (No Substitutes)
155. **Free Swinging Sign Hanger:** 16-inch CTC, Pelco #SE-5117 (No Substitutes)

**WAVETRONIX EQUIPMENT (No Substitutes)**

- 156. WX-CLK-112 2 Channel Contact Closure Rack Card (Matrix or Advance)
- 157. WX-CLK-114 4 Channel Contact Closure Rack Card (Matrix or Advance)
- 158. WX-CLK-201/202 24 VDC 2 A Power Supply
- 159. WX-CLK-204 24 VDC 4 A Power Supply

**Click! Modules - Spare Parts:**

- 160. WX-CLK-210 Circuit Breaker 0.5 Amp
- 161. WX-CLK-210-02, Circuit Breaker 2.0 Amp
- 162. WX-CLK-222 Two Sensor Surge & Comm Module (Matrix & Advance)
- 163. WX-CLK-223 One Sensor Surge & Comm Module (Matrix or Advance)
- 164. WX-CLK-230 120 VAC Surge
- 165. WX-CLK-301 Serial to Ethernet converter
- 166. WX-CLK-304 RS 232 to RS 485 converter

**Sensors, Mounting Brackets and Splice Boxes:**

- 167. WX-SS-200V, SmartSensor Advance Sensor (SS200V)
- 168. WX-SS-225, SmartSensor Matrix Stop Bar Sensor (SS225)
- 169. WX-SS-611, Heavy Duty Sensor Mount - 6" - 2 axis aluminum bracket
- 170. WX-SS-710, In Line Terminal strip junction box

**Sensor Pigtails and Bulk Cable: 8 pin connector**

- 171. WX-SS-704-020, SmartSensor Power and Communication Cable w/ Connector - 20 feet
- 172. WX-SS-704-040, SmartSensor Power and Communication Cable w/ Connector - 40 feet
- 173. WX-SS-704-080, SmartSensor Power and Communication Cable w/ Connector - 80 feet
- 174. WX-SS-705-500, Bulk Cable Spool 500'

**Click! Accessories:**

- 175. WX-100-0064 Din Rail 9"
- 176. WX-100-0065 Din Rail 12"
- 177. WX-100-0277, T-Bus Connector (Gray, Power only)

178. **WX-100-0281 RS-485/USB Mini-Converter**  
(Connects Laptop to Click!222 RS-485 Bridge Port)

179. **WX-205-0000 T-Bus Connector (Green, Power & Comm)**

180. **WX-228-0020 T-Bus Left End Right Angle**

181. **WX-310-0014 RJ-11, White, 60 inch Patch Cord**

#### **Wavetronix HD Equipment**

182. **WX-CLK-200 System Surge Protector (for 1 HD Sensor)**

183. **WX-SS-101-0415, SmartSensor HD Sensor, Dual Radar Side Fire Sensor**

184. **WX-SS-701-020, SmartSensor HD Pigtail,**  
Power/Comm. with Connector - 20 feet

185. **WX-SS-701-040, SmartSensor HD Pigtail,**  
Power/Comm. with Connector - 40 feet

186. **WX-SS-706-500/707, HD SmartSensor 8-conductor Cable Spool, 500'**

#### **Wavetronix Interface Equipment**

187. **WX-102-0462, Wavetronix Click 650/656 Mounting Shelf**

188. **Wavetronix Click!650 (item 102-0416):**  
Cabinet Interface Device – TS2 – Power/Comm for up to four (4) Sensors, with 332 cabinet mounting hardware/brackets (stainless steel), No Substitutes

189. **Wavetronix Click!656 (item 102-0451):**  
Cabinet Interface Device – TS2 – Power/Comm for up to six (6) Sensors, with cabinet mounting hardware/brackets (stainless steel), No Substitutes

190. **Wavetronix SDLC Cable (item WX-SDLC-15/25):**  
SDLC Cable, connector both ends – 15DB to 25DB Connector  
No Substitutes

191. **UPS Battery Backup System (for 332D cabinet)**  
Equipment shall consist of a UPS Battery Backup System that can be mounted in a separate cabinet. The unit must produce a pure sine wave for proper flashing operation, no less than 850 watts output power, no less than a 2-4 hour run time with all LED signal indications at the intersection, all AGM batteries included with initial purchase, 120v A.C. input and output, automatic bypass system that converts from utility company power to backup power and back.

192. **Surge Panel (Camera):** Emerson Network Power Model IPP-105, No Substitutes

193. **LED Light Strip for Illuminated Street Name Sign:**  
Southern MFG. part number: SOUH-LEDREBEENGINE-OPTIC (No Substitute)

194. **Power Supply 24-volt for Illuminated Street Name Sign:** Southern MFG. part number:

SOUH-LEDPOWERSUPPLY-V41FO (No Substitute)

195. **Photocontrol for Illuminated Street Name Sign:** Southern MFG. part number: SOUH-PHOTOCELL-SWIVEL (No Substitutes)
196. **LED 4-section Dual Red Traffic Signal, Horizontal Mount w/Mtg Hrdwre & Backplate:** 12-inch, black, polycarbonate, Red/Red/Yellow/Green, three cutaway hoods, one tunnel hood, complete w/two (2) Pelco #SE-3043 span wire assemblies and two (2) Pelco SE-5000 Tri-Stud Upper Arm Assemblies, see enclosed backplate specifications
197. **332 Riser Base,** Height: 12-inch, Depth: 29-inch, Width: 24-inch, must meet all specifications for Traffic Control Products 332 Riser Base #Riser-002, one-piece cont. weld (No Substitutes)
198. **Safetran 332D Control Cabinet**  
Cabinet shall be completely wired for Lane Use Control Application with one (1) additional Auxiliary File, including surge protection panel, less all plug-ins, the side with the rack only will include two (2) shelves, four (4) ¾" x 16" Anchor Bolts, Corbin #2 Locks, LED strip Light front and back, slide-out shelf/drawer storage unit, Eight (8) flash program blocks, one (1) UPS Battery Backup System (Equipment shall consist of a UPS Battery Backup System that can be mounted in a separate cabinet. The unit must produce a pure sine wave for proper flashing operation, no less than 850 watts output power, no less than a 2-4 hour run time with all LED signal indications at the intersection, all AGM batteries included with initial purchase, 120v A.C. input and output, automatic bypass system that converts from utility company power to backup power and back) (See Specifications)
199. **GGI Road and Traffic LED Quick Change Kit:**  
Each kit contains 12-clips w/stainless steel screws (enough for a 3-section traffic signal)
- 

200. **Battery Backup System for 332 Cabinet (UPStealth 2):**  
Complete Uninterruptible Power Supply (UPS) System shall include two (2) Living-Hinge upstealth Battery Panels (500w), one (1) 170 upstealth inverter controller, one (1) wall charging adaptor and any/all other needed components necessary to install in cabinet (cut sheets must be provided with equivalent showing equivalent functionality, equipment and operations)
201. **UPStealth2 500-Watt Panel with all necessary cables**
202. **Radar Speed Feedback Sign Assembly (see attached specification):**

**Thermal (Flir) DETECTION EQUIPMENT (No Substitutes)**

Successful Bidder shall provide repair support for repairs made by the LFUCG after warranty period, provide three year repair warranty for equipment.

203. **Thermal (Flir) Detection System (8-Phase):**
- System shall consist of all necessary equipment and components to fully detect an 8-phase intersection. Including 1 processor Modules, four thermal sensors with mounting brackets
  - This unit shall detect vehicle presence with 98% accuracy under normal conditions (days and nights), and 96% accuracy under adverse conditions (fog, rain, snow)
  - This unit shall detect bicycle presence with 95% accuracy under normal conditions (days and nights), and 92% accuracy under adverse conditions (fog, rain, snow), with separation of bicycles from other vehicles such as cars and trucks
  - All equipment shall be enclosed in a weatherproof housing.
  - Unit shall not drift and only need to be set up once, unless a sensor is relocated.



- Unit shall be designed so that all set up operations can be done from a Laptop computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E / 2070 (332 cabinet) and plug into a detection slot. Unit shall also be capable of sending outputs via SDLC.

**204. Thermal (Flir) Detection System (4-Phase):**

- System shall consist of all necessary equipment and components to fully detect a 4-phase intersection. Including 1 processor modules, two thermal sensors with mounting brackets
- This unit shall detect vehicle presence with 98% accuracy under normal conditions (days and nights), and 96% accuracy under adverse conditions (fog, rain, snow)
- This unit shall detect bicycle presence with 95% accuracy under normal conditions (days and nights), and 92% accuracy under adverse conditions (fog, rain, snow), with separation of bicycles from other vehicles such as cars and trucks
- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a sensor is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E / 2070 (332 cabinet) and plug into a detection slot. Unit shall also be capable of sending outputs via SDLC.

**205. Thermal (Flir) Detection System (2-Phase):**

- System shall consist of all necessary equip. and components to fully detect 2-Phase's, including 1 processor module, one thermal sensors with mounting bracket
- This unit shall detect vehicle presence with 98% accuracy under normal conditions (days and nights), and 96% accuracy under adverse conditions (fog, rain, snow)
- This unit shall detect bicycle presence with 95% accuracy under normal conditions (days and nights), and 92% accuracy under adverse conditions (fog, rain, snow), with separation of bicycles from other vehicles such as cars and trucks
- All equipment shall be enclosed in a weatherproof housing.
- Unit shall not drift and only need to be set up once, unless a sensor is relocated.
- Unit shall be designed so that all set up operations can be done from a Laptop Computer.
- The Detection Device Processor input to the controller shall be designed to use the existing input file in the 170E / 2070 (332 cabinet) and plug into a detection slot. Unit shall also be capable of sending outputs via SDLC.

**206. Thermal (Flir) Detection Processor, TI BPL2 Edge B&SIU:**

Equivalent to Flir # 10-7018

**207. Thermal (Flir) Detection Sensor, TrafiSense 2: Equivalent to Flir # 10-7476. Location shall be provided so the correct focal length sensor and be supplied.**

**208. Thermal (Flir) SDLC or Special SDLC Cable: Controller module to be specified for correct SDLC cabling.**

**209. Thermal (Flir) Detection Cable, 1000' Reel:**

Cable shall be on a wooden reel, Equivalent to Traffic Control Products #71018, no substitute.

**210. Thermal (Flir) Sensor Power Supply Panel:**

Panel shall consist of power supply, circuit breaker, and terminal blocks for landing 4 thermal sensors.

**211. Econolite ATCC 352 Cabinet Assembly:**

Assembly shall have Dual Output Files And Termination Panels (32 Output/48 Input), Per KYTC 332i cabinet specs doc dated 1/28/22 and ATCC 5301 Advanced Transportation Controller Cabinet Standard, Less Controller; Includes the Following Plug-Ins:

- 2 - CMUp-2212-HV Monitor
- 1 - ADU-2220 Auxiliary Display Unit
- 16 - 21H High Density Flash Transfer Relay
- 2 - 244L DC Isolator, 4-Channel
- 4 - SIU-2218 Serial Interface Unit
- 16 - 2202 High Density Switch Pack
- 1 - 2202 High Density Flasher
- 1 - 2216-24 ATCC Cabinet Power Supply
- 6 - LMD624H Detector, 4-Channel
- 24 - MRA-6LC-6 Input Surge Protector
- 16 - MPA-303-9 Output Surge Protector
- 1 - 1250its/1705 AC Surge Protector
- 2 - LED Cabinet Light Assembly
- 2 - ITS Cabinet Lock
- 1 - Document Drawer, Vented
- 1 - UL Listed AC Surge Protector

**212. 2070-7T GPS Module:** See Specifications, no substitute

**SPECIFICATIONS for ATSI Tester Model PCMT 8000 with all available Monitor Tester Cables**

Portable Conflict Monitor Tester Model: PCMT 8000 The PCMT 8000 will test all Conflict Monitors and MMU's that are designed to current industry standards. Includes: Power Cable, 6' USB Cable, Installation Guide, Software CD, and 1 Year Warranty. Comes with Monitor tester cables for 210/2010/170/2070/2018 # 888-0096, NEMA TS1 and TS2, etc.

Unit shall come with Rolling Rack Case with Laptop space, wheels and telescoping handle, 4U space

**SPECIFICATIONS FOR Traffic Signal Back-Plates**

- Back-plates shall be louvered, painted black on both sides, constructed of .050-inch Aluminum and have a yellow retro-reflective strip installed on the outer perimeter.
- Back-plates shall include a minimum of six (6) 12-14x3/4 inch stainless steel self drilling washer screws. The louvers shall be installed horizontally and as close to the signal face as possible so that a 2-inch wide fluorescent yellow tape can be installed around the outer perimeter, width of the back-plate shall be consistent around the entire signal
- Back-plates shall have a 2-inch wide fluorescent yellow retro-reflective tape installed around the outer perimeter of the face and project a solid rectangular appearance at night. Installed tape shall not cover any part of the louvers.
- Reflective tape shall comply with ASTM D4956-05, Type IX
- Back-plates shall have smooth radius corners.
- Back-plates shall have no more than 3-pieces for a 5-section cluster design signal.
- In addition to these specifications Back-plates shall meet ITE Caltrans specifications.
- When back-plates are ordered they shall be packaged by type and in one single box. Each box shall include a label of the type of back-plate enclosed. Screws shall be enclosed in a bag and taped to each back-plate before they are packaged in boxes for shipment

## **SPECIFICATIONS FOR ACCESSIBLE PEDESTRIAN SIGNALS AND PUSHBUTTONS**

The system shall meet the requirements of the MUTCD current edition. The system shall consist of all necessary components to be fully operational when installed, without the use of special tools.

Systems shall consist of the following: (1) ICCU-C – Intelligent Central Control Unit Rack Mount Card, X-number of iN2 – iNavigator 2 wire Push Button Stations, (1) iN2-ICB-C interconnect board, (1) iN2-150WPS-C power supply, (1) iN2-C4- interface cable, (1) iNavigator Bluetooth Dongle (iN-DGL) with each Push Button Station and any other components not listed.  
iN2 Push Button Station Part #iN2-3-T-N-0-B-BD

The system shall be a Polara navigator APS System. Any bidder proposing an equal product must provide catalog cuts and/or brochures. A sample will be required.

Push Button Stations shall be provided with a double sided sign (9 x 15, R10-3e left arrow on one side and right arrow on the reverse

Verbal message for APS button will be “Walk Sign is on for crossing” followed by the street name. The pc and recording equipment are not to be provided.

## **SPECIFICATIONS FOR ACTIVE BEACON SOLAR-POWERED CROSSWALK LIGHTS**

The entire assembly shall be painted black.

- Each unit shall be equipped with two (2) 12-inch polycarbonate signal sections with cutaway hoods.
- Each unit shall be supplied with 12-inch industry standard Amber LED's, 12V, 1.5A.
- LED light beam shall be 40-degree horizontal divergence.
- Each unit shall come preassembled and ready to install with no special tools required.
- Each unit shall be fabricated with set screws so it will slip onto and secure to a 4-inch (ID) spun aluminum post.
- Each unit shall be equipped with wireless technology enabling the ability to be activated via a pushbutton, and activate all other units at the installation location at the same time.
- Each unit shall be capable of maintaining standard operation in a dense environment and be capable of operating 30-days without solar charging.
- Each units battery pack shall have a 3 to 5-year service life warranty.
- Operating temperature of each unit shall be minus 40-degrees Fahrenheit to +165-degrees Fahrenheit.
- Each unit shall be equipped with nighttime dimming (Beacon moves through 6 stages of dimming as night falls.
- Each unit shall have smart software (During extended sunny periods, system supplies extra power to ensure effective visibility in daylight hours, during extended heavily overcast periods of snow cover , system dims lights and reduces strobe count to ensure beacon remains effective as long as possible.
- Each unit shall flash in compliance with the *Manual on Uniform Traffic Control Devices*
- Each LED face shall meet ITE specifications for Luminosity.
- Each unit shall withstand wind loads of 110-mph.
- Each unit shall be warranted for one (1) year against any failure due to component failure and shall be replaced by the vendor at no cost to the Lexington-Fayette Urban County Government.

## **SPECIFICATIONS FOR 24-HOUR FLASHING BEACON**

The entire assembly shall be painted black.

- Each unit shall come preassembled and ready to install with no special tools required.
- Each unit shall be equipped with One (1) 12-inch polycarbonate signal section with cutaway hood.
- Each unit shall be supplied with 12-inch industry standard Red LED, 12V, 1.5A, 6W.
- LED light beam shall be 40-degree horizontal divergence.
- Each unit shall come preassembled and ready to install with no special tools required.
- Each unit shall be fabricated with set screws so it will slip onto and secure to a 4-inch (ID) spun aluminum post.
- Each unit shall be capable of maintaining standard operation in a dense environment and be capable of operating 30-days without solar charging.
- Each units battery pack shall have a 3 to 5-year service life warranty.
- Operating temperature of each unit shall be minus 40-degrees Fahrenheit to +165-degrees Fahrenheit.
- Each unit shall be equipped with nighttime dimming (Beacon moves through 6 stages of dimming as night falls).
- Each unit shall have smart software (During extended sunny periods, system supplies extra power to ensure effective visibility in daylight hours, during extended heavily overcast periods of snow cover , system dims lights and reduces strobe count to ensure beacon remains effective as long as possible).
- Each unit shall flash in compliance with the *Manual on Uniform Traffic Control Devices*
- Each LED face shall meet ITE specifications for Luminosity.
- Each unit shall withstand wind loads of 110-mph.
- Each unit shall be warranted for one (1) year against any failure due to component and/or battery failure and shall be replaced by the vendor at no cost to the Lexington-Fayette Urban County Government.

## **Radar Speed Feedback Sign Assembly Specification – Low Speed Application**

**General Description:** Radar sign suitable for use on residential type streets should be easily read at speeds up to 35mph with a variety of mounting options. The radar unit should accurately measure vehicular speeds approaching the sign and display the speed accordingly. The unit must have the ability to ‘flash’ at speeds above a certain threshold that can be adjusted. The unit must be solar powered with the ability to operate in all types of weather.

Minimum Specifications: Revised 12/1/2017

- Dimensions: Sign – 29”h x 23”w x 3.5”t  
Speed Digits – 11”h x 5.6”w  
Weight – Up to 70 lbs including brackets, solar panel, and batteries
- Technical: Display in miles per hour  
Display should be able to ‘flash’ the speed or ‘strobe’ when speeds are too high.  
Standard aluminum sign face and enclosure  
MUTCD approved White prismatic sheeting with Black “Your Speed”  
Solar Powered with panel sized according to mfg specification. Min. 40 watt  
Radar – Doppler or equivalent with a range up to 300 feet  
Brightness – Adjusts according to ambient light with the ability to adjust if needed. Maximum (11,000 nits), minimum (550 nits).  
Enclosure – Waterproof aluminum meeting NEMA rx-12, IP65 requirements.  
Communication – Standard serial connection and Bluetooth option or Wi-fi.  
When fully charged, batteries should be able to power the unit for at least two (2) weeks in total darkness with up to 4,000 actuations per day.
- Programming: User friendly interface with ability to adjust brightness, display modes (none, minimum, maximum, flashing speed, and strobe).
- Data Collection: Unit must be able to collect and report count and speed data with a variety of report options such as summary, weekly, total count, average speed, 85% speed, minimum and maximum speeds, and speed violators. Files created must be readable and exportable to MS Excel.
- Mounting: Universal mounting bracket for installation on circular, square, telespar, and utility poles is required. Bracket must be theft resistant.
- Warranty: Two years for the radar sign  
One year for batteries/solar unit.

## **Specifications for Internally Illuminated, Edge-Lit, LED Type Street Name Signs**

### Pricing:

- Signs shall be priced per 6-inch length, height of sign face shall be 18-inches.
- Sign Legend, Font and Length shall be specified by the Lexington-Fayette Urban County Government when an order is placed.
- All prices shall include all items outlined in the specifications and shall include all shipping and handling fees.
- Sign orders placed will not be less than 24-inches in length.

### Material and Dimension Specs:

- The frame shall be made of high quality aluminum material with a black, powder coat finish and water-tight seal.
- The sign face shall be 18" x (24" to 96") (Length shall be determined when order is placed)
- Thickness of completed sign shall be 2 & 1/4" or less.
- Sign lens shall be made of translucent, white, high impact UV resistant polycarbonate or equivalent material capable of maintaining like new appearance for 5 or more years.
- The signs shall meet wind load requirements described in the "Standard Specifications for Structural Supports of Highway Signs, Luminaries, and Traffic Signals, latest edition," by AASHTO.
- All stainless steel hardware connecting sign to mast arm bracket shall have self locking nuts (nuts having locking bushings pre-manufactured into them).
- All signs shall be engineered for double sided messages with (Industry standard, street name green) diamond grade reflective sheeting, letter color shall be bright white etched and paint filled into the acrylic., when a single message sign is ordered the non used side of the sign shall have a blank cover installed blocking any/all light from being seen in the opposing direction.

### Sign Housing:

- Sign frame/housing shall be formed and manufactured out of extruded aluminum alloy 6061 T6 with a minimum tensile strength of 20,000 ksi
- The sign frame/housing shall incorporate stainless steel fasteners throughout.
- Weep holes shall be located at strategic points in the bottom of the housing assembly to allow drainage of condensation.

### Sign Panels:

- The entire surface of the sign panel shall be evenly illuminated so that the surface of a 1-ft. x 1-ft. section of the sign has a light output of a minimum 50-nits with a maximum degradation of 15-nits after 5-years.
- Sign panels shall be translucent made of high impact UV resistant plastic/acrylic material able to withstand 5-years of <400 nm UV light, all surfaces shall be free of blemishes in the plastics or coating that might impair the service or distract from the general appearance and color matching of the sign.

#### Mast Arm Mounting Hardware:

- Completed sign shall have two (2) mounting brackets permanently attached, evenly spaced (one on each end) on the top of the sign frame for mounting, permanently mounted brackets on sign frame shall be pre-drilled to accommodate supplied adjustable mounting brackets (outlined below).
- Each sign shall be supplied with two (2) adjustable brackets allowing a 6-inch vertical adjustment of the sign from either end.
- Each sign shall be supplied with two (2) Astro-Brac (Free Swinging) #AB-0106-L Brackets. (Bracket specifications: 42-inch bands, clevis hanger opening must be  $\frac{3}{4}$ -inch, no substitutes).
- Adjustable brackets shall have all other necessary brackets/hardware to connect to the Astro-Brac (Free Swinging) #AB-106-L Bracket.

#### Electrical Specs:

- All electrical components shall comply with NEC requirements and be UL Outdoor damp location rated.
- Input power shall be 120 VAC with a consumption rate of approx. 4 watts per square foot of sign face. Transformer and field wire connection point shall be integral to the sign housing with easy access for maintenance purposes.
- Field wire connections shall be accomplished by a solder-less connector (screw down lugs).
- Sign must be able to operate in temperature extremes from -40 deg F. to +165 deg F.
- LED light modules shall be capable of operating for at least 50,000 hours with no more than 30 % degradation.

#### Light Source:

- The LED light modules shall be composed of white LED's, these modules shall be sealed making the entire module waterproof.
- Modules shall operate at 700-mA constant current.
- Power consumption shall be 4-watts per foot with an operating temperature of -40 degree Centigrade to +55 degree Centigrade.
- Total light output of these modules shall be 150-lumens.
- Protected life shall be 50,000-hours with a 70% specified light output after 50,000-hours of continuous operation.

Signs must be made so that the lens face can be modified and/or replaced by L.F.U.C.G. staff.

Signs and components shall have a prorated warranty against defects for a period of no less than five years.

## Approved Siamese Cable for Vantage Use (1 of 3)

### Vantage Product Support



#### FIELD SERVICE BULLETIN

UPDATE to previous FSB  
IsotechFSB\_3\_04.pdf  
March 2004

**Subject:** Additional Approved Siamese Cable for Vantage Use  
**Date:** October 26, 2006  
**Re:** To All Vantage Dealers

Because of continued interest in additional Iteris approved Siamese type video/power cables, and because of the potential problems that have been identified with the use of non-approved cables, a second Siamese cable has been approved for use.

The use of the Belden 8281 coaxial cable and a separate power cable that meets our specifications is still the standard, however, if a Siamese cable must be used the following cables are acceptable. The cables must be the manufacturers exact part numbers as listed, use of unapproved cables may negatively affect Vantage system performance and can result in the invalidation of Vantage product and performance warranties.

- ISOTEC I59PVCC-00
- Advanced Digital Cable 99163SFX



This is a picture of the ISOTEC Siamese cable. It is recommended that the outer cable jacket be cut away completely on the drip loop portion, to reduce strain on the camera BNC and Deutsch connectors. A suitable waterproofing compound should also be used to seal the "Y" junction where the video and power cable exit the outer jacket. This will help to prevent water from wicking down the cable and accumulating inside.



## Approved Siamese Cable for Vantage Use ( Pg 2 of 3)



**100% SWEEP TESTED 1MHz TO 1GHz**  
 75 Ω Precision Video Coaxial Cable/ Double Braided RG 59/U Type  
 20 AWG SOLID BC

### 1st COMPONENT

AWG (Strand) Size/Type Nom. D.C.R.	Dielectric Type Nom. Od	Shield Type Coverage Nom. D.C.R.	Jacket Type & Thickness	Cable Color & Jacket OD	Nom. Cap. pF/ft. pF/m.	Vel. Of Prop.	Nom. Imp.
20 AWG Solid BC 10.2 Ω/M' 33.1 Ω/km	Solid Polyethylene .198"	98% TC X 2 1.1 Ω/M' 3.6 Ω/km	Polyethylene .035"	Black .304"	20.9 pF/ft 68.7 pF/m	67%	75Ω

### ATTENUATION

Frequency MHz	Nom. Atten. (dB/100ft)	Nom. Atten. (dB/100m)	Frequency MHz	Nom. Atten. (dB/100ft)	Nom. Atten. (dB/100m)
1	0.14	0.46	136	2.58	8.46
3.58	0.47	1.54	143	2.62	8.59
5	0.54	1.77	180	2.79	9.15
7	0.62	2.03	270	4.36	14.30
10	0.88	2.23	360	4.98	16.33
67.5	2.02	6.63	540	6.68	21.91
71.05	2.10	6.89	720	7.62	25.65
100	2.50	8.20	1000	9.18	30.11

### 2ND COMPONENT

No. of Conductors	Conductor Size and Material	Insulation Type & Thickness	Color Code	Nom. Capacitance	Nom. Impedance	Jacket type & Thickness	Jacket O.D. & Color
3	16 AWG 19/29 BC	PVC .032"	Black, White, Green	19 pF/ft 62.3 pF/m	80%	PVC Pressure with tape & fillers .040" +/- .003"	.340" +/- .005" Black

Isotec Product Number UL Style	Jacket Type & Thickness	Cable Color & Jacket OD	Copper Weight LBS/MFT	Shipping Weight LBS/MFT
159PVCC-00 UL: n/a CSA: n/a	PE .030" +/- .005"	BLACK .592" +/- .005"	50.88 LBS/MFT	168 LBS/MFT

**PRINT LEGEND:** 159PVCC-00 TRAFFIC CONTROL CABLE 16-3C 600V/PRECISION VIDEO "DIR BUR" "SUN RES" MFG BY ISOTEC

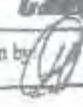


ACCEPTANCE OF ABOVE DESIGN: \_\_\_\_\_

DATE: \_\_\_\_\_

Shipping Tolerance: +/- 10%  
 Length Tolerance: +/- 10%  
 Random/Odd Length Tolerance: May ship up to 15% of order total on random/odd lengths.  
 Isotec makes every effort to provide accurate specifications. Printing errors are subject to correction. Standard product specifications are subject to change without notice.  
 Contact your Isotec sales person for current specifications.

Rev: 02/00/04

**Approved Siamese Cable for Vantage Use ( Pg 3 of 3)**

<b>Advanced Digital Cable, Inc.</b>	Specification Sheet for: 75 Ohm Video Coax with 16 awg 3 conductors, fine stranded IMSA 20-1	Date:	5/27/03				
		Part Number:	99163SFX				
Drawn by: 	Customer Approval:	UL Type:	None				
							
<b>Construction Details:</b>							
<p>This cable is a parallel construction of one low density polyethylene jacketed video coax and one flexible polyvinyl chloride jacketed three conductor 16 awg fine stranded cable under an oval black flexible polyvinyl chloride jacket.</p>							
<b>Physical Specifications</b>		<b>Electrical Specifications</b>					
<b>75 Ohm Video Coax</b>		<b>Nominal Attenuation</b>					
Conductor:	20 awg solid bare copper .032"	MHz	dB/100 feet				
Dielectric:	.034" wall of low density polyethylene to .200" nom.	16	.78				
Braid 1:	34 awg tinned copper with 98 % coverage.	50	1.70				
Braid 2:	34 awg tinned copper with 98 % coverage.	100	2.30				
Jacket:	.030" wall black low density polyethylene to .304" nom.	200	3.70				
		400	5.30				
		700	7.40				
		1000	9.20				
<b>16 awg cable</b>		Impedance: 75 Ohms					
Conductor:	1 - 16 awg (26/30) bare copper .063" (for optimum flexibility of a rigid cable)	Capacitance: 20.5 pF/foot					
Insulation:	.030" wall polyvinyl chloride per the color code to .123" nominal.	Velocity of Prop.: 66%					
Cabling:	Three 16 awg conductors cabled together under a clear polyester tape wrap in a 3" left hand lay to a nominal diameter of .270".	<table border="1"> <tr><td>Color Code</td></tr> <tr><td>White</td></tr> <tr><td>Green</td></tr> <tr><td>Black</td></tr> </table>		Color Code	White	Green	Black
Color Code							
White							
Green							
Black							
Jacket:	.030" wall flexible black polyvinyl chloride to .350" nom.						
<b>Overall Jacket:</b>	One video coax and one 16 awg three conductor cable pulled parallel under a .030" oval jacket of flexible black polyvinyl chloride to a nominal diameter of .395" x .700" (overall).						
Print:	Print in white ink: ADVANCED DIGITAL CABLE 16-3C W/PRECISION VIDEO SUN RES DIR BUR						
Put Up:	Customer to specify.						

# Kentucky Transportation Cabinet LED Specifications ( Pg 1 of 4)

1/4

	Document Phase	Document Description	
1000000124	Final	LED Modules	

## Section 1—Specifications -

### 1.00—Specifications of Commodity and/or Service Requirements

Specification for Replacement Light Emitting Diode Modules for Vehicular and Pedestrian Signals

#### General

The purpose of this specification is to provide minimum design and performance requirements for the following light emitting diode (LED) modules (replacement) for use in vehicular and pedestrian traffic signal heads:

- Circular Signal – Red – 8" and 12"
- Circular Signal – Yellow – 8" and 12"
- Circular Signal – Green – 8" and 12"
- Arrow Signal – Red – 12"
- Arrow Signal – Yellow – 12"
- Arrow Signal – Green – 12"
- Pedestrian Signal – Countdown

Unless stipulated otherwise in this specification:

Vehicular, circular, signal modules shall comply with the Institute of Transportation Engineers (ITE) Vehicle Traffic Control Signal Heads: *Light Emitting Diode (LED) Circular Signal Supplement*, dated June 27, 2005;

Vehicular, arrow, signal modules shall comply with the ITE Vehicle Traffic Control Signal Heads: *Light Emitting Diode (LED) Vehicle Arrow Traffic Signal Supplement*, dated July 1, 2007; and

The walking person and hand icons portion of the pedestrian signal modules shall comply with the ITE *Pedestrian Traffic Control Signal Indications- Part 2: Light Emitting Diode (LED) Pedestrian Traffic Signal Modules*, dated March 19, 2004.

#### Physical and Mechanical Requirements

The lens of the module shall be integral to the unit with a smooth outer surface constructed of plastic or glass. The optical assembly shall diffuse the light output and provide uniform illumination across the entire surface of a circular lens and the required visible portions of arrow and pedestrian lenses. Individual LED's shall not be visible to the observer of indications displayed by vehicular traffic signal modules. If a polymeric lens is used, a surface coating or chemical surface treatment shall be used to provide front surface abrasion resistance.

In addition to the module identification requirements of the respective ITE documents, the following additional information shall be permanently identified on the backside of each module:

- Date of manufacture (month/year)
- Color (for vehicular modules)
- Type (circular or arrow)

The pedestrian signal module shall be designed to display the walking person icon and hand icon as

## Kentucky Transportation Cabinet LED Specifications ( Pg 2 of 4)

2/4

	Document Phase	Document Description	
1000000124	Final	LED Modules	

shown in the ITE specification and a numerical countdown display. The icons shall be designed so that the entire areas comprising the icons appear illuminated. The icons shall overlay one another adjacent to two 7-segment numerical digits, comprised of two rows of LED's. The module shall not have any external attachments or options that would allow disabling the countdown function. Contrary to the ITE specification, all pedestrian signal modules shall have a message bearing surface of 16" x 18" and a minimum icon size of 11" x 7" and minimum digit size of 9" x 6.5". The module shall be capable of detecting any increase or decrease of the pedestrian timing and re-programming itself should this be detected. The module shall be capable of recognizing preemption events and temporarily modifying the crossing cycle accordingly.

### **Electrical Requirements**

All modules shall be operationally compatible with traffic signal controllers, cabinets and accessories manufactured to the California Department of Transportation (Caltrans) Traffic Signal Control Equipment Specifications, latest edition.

### **Quality Assurance, Quality Control and Testing**

The manufacturer's quality management system shall be ISO 9001:2008 certified. The ISO certification shall be provided with the bid package. Manufacturer shall be ISO 9001:2008 certified or shall be rejected as non responsive.

All modules shall be Intertek certified and shall bear the ETL mark. The manufacturer shall have a license agreement with Intertek whereby an initial factory assessment and ongoing quality assurance testing every six months are performed. The certification and copy of license agreement shall be submitted with the bid proposal. The manufacturer shall supply the KYTC with all quality assurance testing results after they are performed throughout the contract period.

See this site for a list of Certified Products:

[http://www.intertek.com/uploadedFiles/Intertek/Divisions/Commercial\\_and\\_Electrical/Media/PDFs/Electronics\\_and\\_Electri](http://www.intertek.com/uploadedFiles/Intertek/Divisions/Commercial_and_Electrical/Media/PDFs/Electronics_and_Electri)

Prior to award of the contract, the KYTC reserves the right to require delivery of sample modules for visual inspection and approval.

KYTC reserves the right to engage an independent testing laboratory to perform quality assurance testing on a minimum ten units randomly selected from all units furnished for any or all line items on the contract. Failure to meet the requirements of the specifications by two or more sample units representing any line item may result in all the units furnished for that line item being rejected, the contract may be declared null and void, and liquidated damages may be assessed for the total amount of the awarded contract. The KYTC will notify the vendor of this rejection by overnight mail or other adequate means.

### **Delivery**

The time from receipt of delivery order until delivery of the modules shall be a maximum of 30 calendar days. All shipments not delivered within the specified 30 calendar days will be subject to liquidated damages at the rate of 1% of the total delivery order.

A complete list of serial numbers for each LED module shall be sent in Microsoft Excel format via email to [Ted.Swansegar@ky.gov](mailto:Ted.Swansegar@ky.gov) or may be sent on CD-ROM with each invoice.

Every individual container shall have the date of shipment clearly stamped on the outside of the container

## Kentucky Transportation Cabinet LED Specifications ( Pg 3 of 4)

3/4

	Document Phase	Document Description	
1000000124	Final	LED Modules	

so that the warehouse may utilize a "first-in-first-out" inventory process.

### **Warranty**

A written warranty against defects in materials and/or workmanship shall be furnished. The warranty period will last 84 months and begin on the date the modules are received by KYTC. Modules that fail within the warranty period will be returned to the vendor and replacement modules shall be provided at no cost to KYTC.

### **Section 2—Terms and Conditions of the Master Agreement**

#### **2.00—Scope of the Contract**

The KYTC Division of Purchases issues this Master Agreement for:

Replacement LED modules

#### **2.01—Contract Components and Order of Precedence**

The Commonwealth's acceptance of the offer indicated by the issuance of an Award by the KYTC Division of Purchases shall create a valid Master Agreement consisting of the following:

1. The written Master Agreement between the Parties;
2. Any Addenda to the Solicitation;
3. Any provisions of the Solicitation and all attachments thereto;
4. The Bidder's response to the Solicitation, and
5. The Kentucky Revised Statutes KRS 45A.

In the event of an inconsistency between provisions of the solicitation, the inconsistency shall be resolved by giving precedence in the following order: (a) the Specifications; (b) other provisions of the Solicitation, whether incorporated by reference or otherwise; (c) Contract or Master Agreement Terms and Conditions; (d) FAP 110-10-00 – General Conditions and Instructions for Solicitations and Contracts.

#### **2.02—Initial Contract Period**

The Master Agreement will be effective upon award and expire 7-31-10

#### **2.03—Optional Renewal Period**

This Master Agreement may be extended at the completion of the initial contract period for three (3) additional one-year periods. This extension must have the written approval of the vendor and the KYTC

## Kentucky Transportation Cabinet LED Specifications ( Pg 4 of 4)

4/4

	Document Phase	Document Description	
1000000124	Final	LED Modules	

Division of Purchases. The Commonwealth of Kentucky reserves the right to renegotiate any terms and/or conditions as may be necessary to meet requirements for the extended period. The vendor will be advised of any proposed revisions prior to the renewal periods. In the event proposed revisions cannot be agreed upon, either party shall have the right to withdraw without prejudice from either exercising the option or continuing the contract in an extended period.

### **2.04—Divisions/Agencies to Be Served**

This contract shall be for use by the following Divisions/Agencies of the Kentucky Transportation Cabinet:

Division of Traffic

No shipments or services are authorized until an official Delivery Order has been fully processed by an authorized agency.

### **2.05—Quantity Basis of Contract**

This Master Agreement has no guarantee of any specific quantity, and the State is obligated only to buy that quantity which is needed by its agencies.

### **2.06—Exception to Required Use of Contract**

The establishment of this Master Agreement is not intended to preclude the use of similar products when requested by the agency. The Commonwealth of Kentucky reserves the right to acquire large requirements through other competitive processes.

### **2.07—Basis of Price Revisions**

**PRICE ADJUSTMENTS:** Unless otherwise specified, the prices established by the Master Agreement shall be firm for the contract period subject to the following:

A. **Price Increases:** A price increase will not be allowed during the first six (6) months of the contract. Only one price increase will be allowed during the contract period. The price increase must be based on industry wide price changes. The contract holder must request in writing a price increase at least thirty (30) days prior to the effective date, and shall provide firm proof that the price increase(s) is justified. The KYTC Division of Purchases may request additional information or justification. If the price increase is denied, the contract holder may withdraw from the contract without prejudice upon written notice and approval by the KYTC Division of Purchases. Notice of withdrawal must be provided a minimum of forty-five (45) days prior to the effective date.

B. **Price Decreases:** The contract price shall be reduced to reflect any industry wide price decreases. The contract holder is required to furnish the KYTC Division of Purchases with notice of any price decreases as soon as such decreases are available.

C. **Extended Contract Periods:** If the contract provides for an optional renewal period, a price adjustment



## Control Cabinet Model 332D System



### Features

- Meets all Colorado DOT, Federal Highway Administration (FHWA), and Caltrans requirements
- Four doors (two front, two rear)
- Three-point locking system
- Suited for intersection controllers
- Cabinet diagnostic (optional)
- 0.125-inch thick aluminum

### Description

The model 332D cabinet is a versatile, modular, four-door design providing for control of up to eight vehicle and four pedestrian phases. An optional configuration provides six additional load switch positions for use as overlaps and a variety of special function outputs. The 332D cabinet has two 332-height Electronic Industries

Alliance (EIA) racks for equipment. The unit also has additional space for Intelligent Transportation Systems (ITS), Uninterruptible Power Source (UPS), Closed-Circuit Television (CCTV), and many other applications. The use of standard subassemblies assures interchangeability between manufacturers. All subassemblies are mounted in a removable 19-inch EIA

rack for ease of maintenance and are fully interchangeable with the model 336, 3365, and 337 cabinets. The cabinet is also capable of accepting the 340 series ITS serial cabinet components. Constructed of heavy 0.125-inch aluminum, the 332D provides a durable, weatherproof enclosure designed to NEMA 3R specifications.





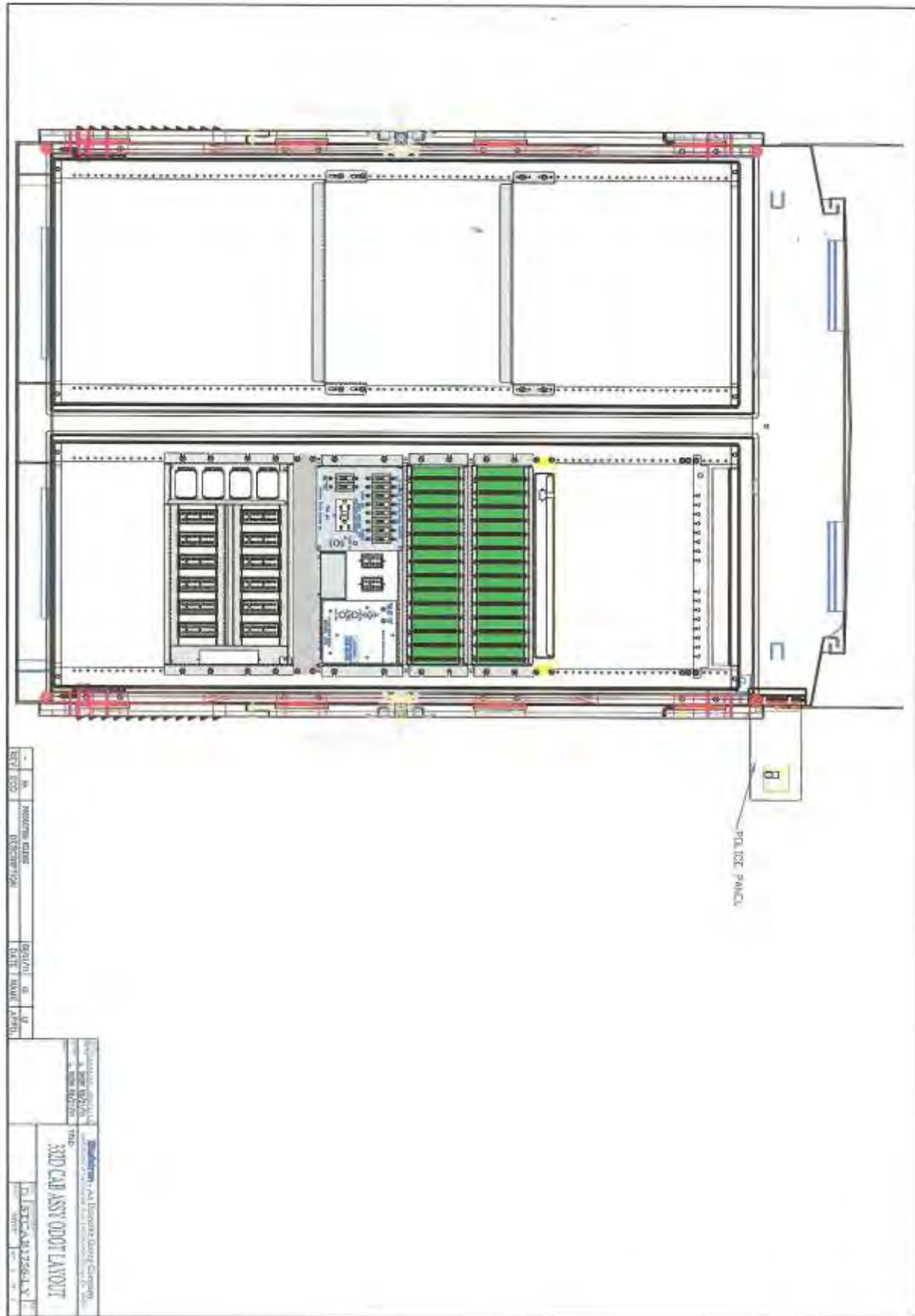
Dimensions:	66.77 in. H X 48.45 in. W x 30 in. D
Material:	Aluminum 0.125 in.
Ship Weight:	350 lbs
Finishes:	Bare, painted, or anti-graffiti
Mounting:	Base-mounted – 4¾ in. x 16 in. anchor bolts (optional)
Access:	Four doors (two front, two rear)
Ventilation:	Pleated media fiber filter in door Two 100 Cubic Feet per Minute (CFM) fans with thermostatic control
Locking System:	Three-point locking system with choice of locks
Handles:	Stainless steel with padlock feature
Door Stops:	Two-position bar stops on top and bottom of each door
Rack Assembly:	Two removable 332 full-height rack assemblies with one rack has: <ul style="list-style-type: none"><li>• One Power Distribution Assembly (PDA) #2./power supply</li><li>• Two input files</li><li>• One output file</li><li>• One empty rack with shelves</li><li>• One Auxiliary file (optional)</li></ul>
Configuration:	Eight vehicle phases, four pedestrian phases, four overlaps (optional)
Police Door:	Signal on/off and flash/auto switches Auto/manual switch with police cord (optional)
Light:	Fluorescent front and/or back (optional)
Shelf-Drawer:	Slide-out shelf/drawer storage unit (optional)
Conflict Monitor:	Slot for Conflict Monitor Unit (CMU)
Flasher:	Two slots for two-circuit flashers
Flash Transfer Relay:	Receptacles for four flash transfer relays Two additional relays (optional)
Program Blocks:	Receptacles for eight flash program blocks Four additional blocks available (optional)

1485 Garden of the Gods Rd., #140  
Colorado Springs, CO 80907  
Tel: (719) 599-5600  
Fax: (719) 599-3853  
www.safetran-traffic.com  
2330580E07-2

  
An **ECONOLITE** Group Company

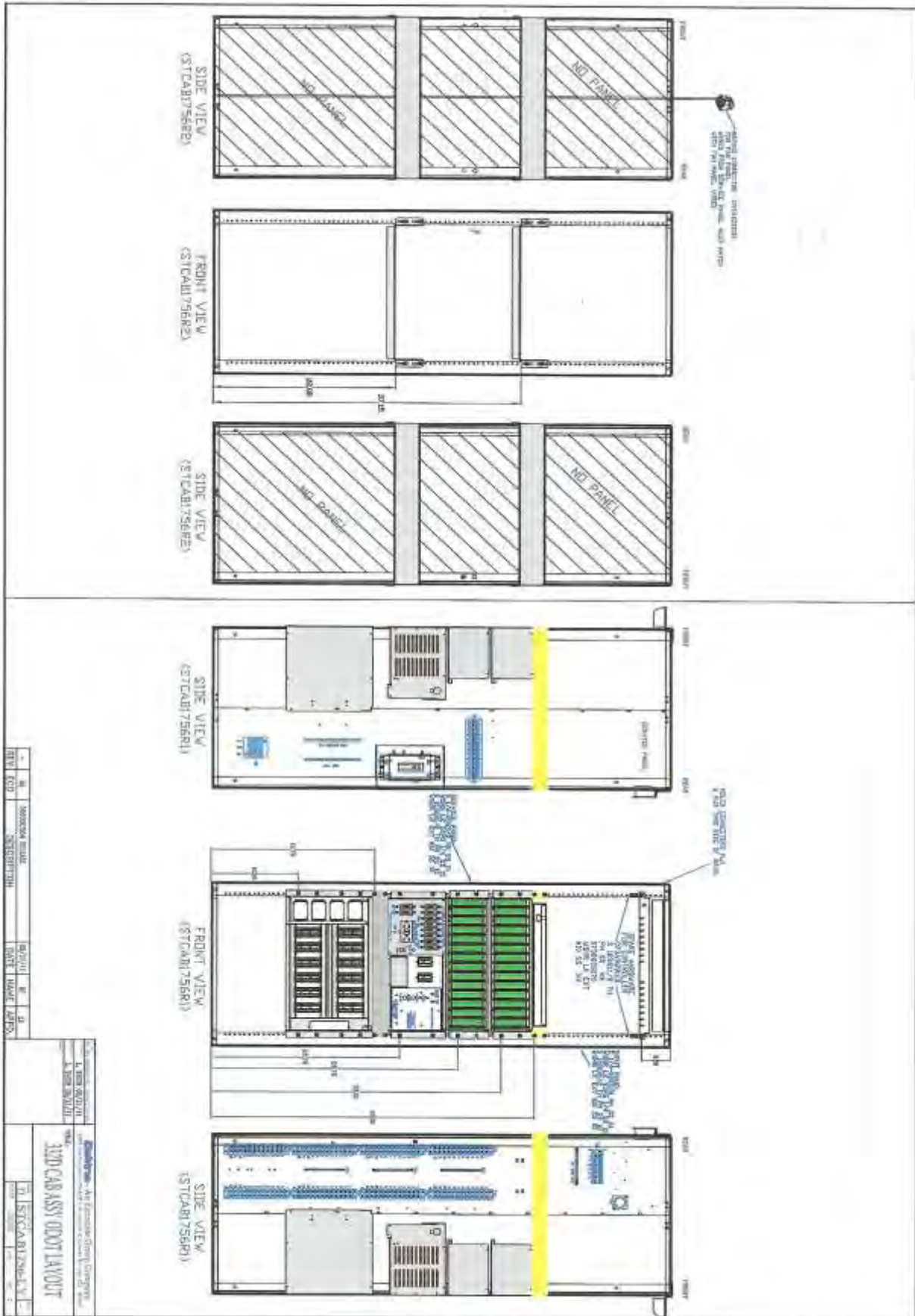


# Safetran Control Cabinet Model 332D System Specifications, Pg. 3 of 4



REV	NO	DESCRIPTION	DATE	BY

SAFETRAN A Safetran Company 332D CAB/ASST ODDT LAYOUT	
TITLE 332D CAB/ASST ODDT LAYOUT	PROJECT NO. 43135643



REV	NO	DESCRIPTION	DATE	BY	CHK
1	1	ISSUED FOR CONSTRUCTION	01/11/11	WJ	WJ
2	2	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
3	3	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
4	4	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
5	5	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
6	6	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
7	7	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
8	8	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
9	9	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
10	10	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
11	11	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
12	12	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
13	13	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
14	14	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
15	15	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
16	16	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
17	17	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
18	18	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
19	19	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
20	20	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
21	21	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
22	22	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
23	23	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
24	24	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
25	25	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
26	26	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
27	27	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
28	28	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
29	29	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
30	30	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
31	31	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
32	32	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
33	33	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
34	34	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
35	35	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
36	36	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
37	37	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
38	38	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
39	39	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
40	40	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
41	41	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
42	42	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
43	43	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
44	44	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
45	45	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
46	46	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
47	47	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
48	48	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
49	49	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ
50	50	REVISED TO ADD DIMENSIONS	02/01/11	WJ	WJ

# Solar RRFB System Specifications (PG.1/4)



5100 W Brown Deer Rd | Brown Deer, WI 53223  
 Phone: (800) 796-0112 | Fax: (800) 444-0331  
[tapconet.com](http://tapconet.com)

## Stock Quote for Solar Rectangular Rapid Flashing Beacon (RRFB) Pedestrian Crossing-42

TAPCO Contact:

Name:

Address:

Contact:

Date:	*Installation Address/Location: (*Required for solar calculations. For more than one location, use additional pages)
Company:	
Contact:	
Phone:	
Email:	

### SOLAR RRFB SYSTEM

<https://www.tapconet.com/solar-led-division/rectangular-rapid-flashing-beacon-42>

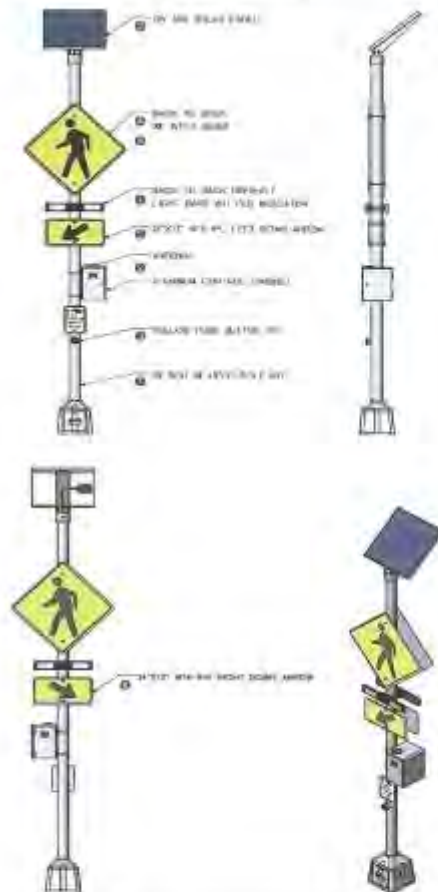
QTY	DESCRIPTION	EACH	TOTAL
		\$	\$

System Consists of 2 Quantity 2180-RRFB42 Which Includes:

- 1 Qty 4 Rectangular Rapid Flashing Beacons (RRFBs) light bars with wig-wag pattern, 30 second duration, one pedestrian indicator, black housing, mounted Back to Back on 4"-4.5" OD poles
- 2 Qty 2 RRFB Controller Kit Containing: Aluminum Cabinet, Controller, 12V Battery, 55W Solar Panel, Wireless, No Modem, for 4.5" OD Pole
- 3 Qty 2 BullDog Push Button Kits (Yellow Push Button with LED, Mounting, Cabling, 9" x 12" white Push Button To Turn On Warning Lights' with Hand Symbol (R10-25))
- 4 Qty 4 30" FYG Pedestrian Crossing (W11-2) static sign, mounted Back to Back
- 5 Qty 2 24"X12" FYG Left Diagonal Down Arrow (W16-7PL), mounted Back to Back with Left Diagonal Down Arrow
- 6 Qty 2 24"X12" FYG Right Diagonal Down Arrow (W16-7PR), mounted Back to Back with Right Diagonal Down Arrow
- 7 Qty 2 13'4.5" OD Aluminum Pole Kit Containing: Poles, Pedestal Bases and 42" J-Bolts (Schedule 40)
- 8 Qty 4 Back to Back Static Sign Mounting Kit Contains: Banded Flared Leg Brackets for Mounting Static Signs to 4.5" Pole

**Additional Information:**

- Solar region and the number of pedestrian activations/running time will affect the system's autonomy and may require a larger solar package
- Solar powered systems require an unobstructed view of the southern sky. A solar site survey is recommended if there are any obstructions such as trees, or buildings.
- System is furnish only. Installation is not included.



# Solar RRFB System Specifications (PG. 2/4)

Typical Movement Push Button	Buildog III Push Button	XAV2-LED Push Button
<p><b>MECHANICAL PROPERTIES:</b>                      Body Material: Aluminum                      Actuator: Stainless Steel                      Hardware: Stainless Steel                      Finish: Powder Coat  <b>ELECTRICAL SPECIFICATIONS:</b>                      Operating Voltage: 12V &amp; 15V (12-24V ALDC)                      Line Voltage: 50V                      Switch Current: Max 200-500mA                      On Resistance: &lt;20 ohms                      Operating Mode: NO                      Closure Delay: 150ms                      Switch: Piezo Solid State  <b>OPERATING DATA:</b>                      Operating Force: &lt;3 lbs                      Operating Temperature: -40°C to 60°C (-40°F to 145°F)                      Operating Life: 100x10<sup>6</sup>                      IP Rating: 68</p>	<p><b>MECHANICAL PROPERTIES:</b>                      Body Material: Aluminum, Powder Coated                      Outer Material: 316 Stainless Steel                      Arrow Button: Anodized 6061 Aluminum, Nickel Plated Black Powder Coat on area surrounding arrow  <b>ELECTRICAL SPECIFICATIONS:</b>                      Operating Force: 2.0 lbs. Maximum                      Operating Temperature: -34°C to 74°C (-30°F to 165°F)                      Operating Voltage: 12-36 VDC, 9-24 VAC (18 VDC Typ.)                      MTBF: 4,850,000 hours Typ.                      Switch Operating Life: Greater than 300 million operations.                      "Off" Current: 15µA Typ.                      "On" Resistance: 850 Typ. (Momentary)                      Maximum "On" Current: 250 mA (over-current protection) Typ.                      Maximum "On" Time: 11 sec. Typ.                      Debounce Time: 85 ms. Typ.  <b>LED OPERATING MODES:</b>                      Momentary: Approx. 0.025 sec. LED flash each time button is pressed.                      Latching: LED activates only during non-walk phases and stays on until the beginning of the walk phase.  <b>LED SPECIFICATIONS:</b>                      Luminous Intensity: 0.3 Lux @ 1 meter Minimum (led)                      Viewing Angle: 155° Typical  <b>BEEPER:</b>                      Volume: 69dB @ 1 meter Typ.                      Beep on Press: 2.6kHz                      Beep on Release: 2.3kHz                      Beep Length: 50ms Typ.</p>	<p><b>MECHANICAL PROPERTIES:</b>                      Physical Enclosure Type: Cast aluminum housing with yellow powder coat finish, watertight O-ring seals                      Installation: 2 holes on 6.0" centers, tapped 1/4-20 plus 1/8" or larger hole for wire access                      Dimensions: Width 5.50" Length 34.40" Maximum Height 2.60"                      Operating Temperature: -34°C to 60°C (-30°F to 140°F)  <b>POWER REQUIREMENTS:</b>                      DC in: 18-24 VDC (from XAV2)                      Idle Current Drain: ~1.2mA                      Peak Current Draw (15VDC input power): ~500mA with voice message at maximum                      LED Current: 22mA typical  <b>Outputs:</b>                      BTH: Driven low to ground when the push button is pressed                      MIC (With optional): 0-1.5 Watts (ambient noise feedback)  <b>INPUTS:</b>                      PWR+: 10-24 VDC (referenced to PWR-)                      PWR-: DC Ground                      LED: Connect to ground to drive LED (typically 22mA)                      WHITE: Connect to ground to enable audio amplifier                      AUDIO: One half of balanced audio input                      AUDIO: Other half of balanced audio input</p>



**Optional BlinkerBeam® Wireless Communication**

Push buttons can activate BlinkerBeam® solar/battery-powered transceiver radios. These compact controllers activate one or more BlinkerSign® LED Signs, BlinkerBeam® LED Beacons, RRFB and other ITS devices wirelessly within a 1000 ft. range, up to one mile with an external antenna.

**TAPCO** 1-800-236-0112 www.tapconet.com

Traffic & Parking Company, Inc. 5100 West Brown Deer Road, Brown Deer WI 53225 U.S.A. Phone 800-236-0112 FAX 800-444-0331  
 www.tapconet.com Printed in the U.S.A. © 2012, Traffic & Parking Control Company, Inc.

11720332

Solar RRFB System Specifications (PG. 3/4)



Solar RRFB System Specifications (PG. 4/4)



## Lane Use Control Sign Specifications



# LED LANE CONTROL SIGNS

- 1.0 General Description
- 1.1 LED illumination for one or two-way models.
- 1.2 Capable of displaying several messages
- 2.0 Functional Requirements
- 2.1 All messages shall be clearly legible attracting attention under any lighting conditions.
- 2.2 Transformers or LED Drivers shall be used to reduce the incoming 120 volts to the manufacturer suggested operating voltage and current.
- 2.3 The sign shall be capable of continuous operation over a range in temperatures from -35 degrees to +140 degrees Fahrenheit (-37 degrees to +60 degrees Celsius).
- 3.0 Mechanical Construction
- 3.1 Housing shall be constructed of extruded aluminum.
- 3.2 All components shall be readily accessible when either door(s) are open.
- 3.3 All corners or seams are heli-arc welded to provide a weatherproof seal around the entire case.
- 3.4 A continuous stainless steel hinge shall attach the housing and doors.
- 3.5 Doors shall be constructed of extruded aluminum and have one side removable to gain access to the sign face.
- 3.6 Sign shall have one or more stainless steel locks to tightly secure the door to the gasket.
- 3.7 Drainage shall be provided by drain holes located on the housing bottom.
- 4.0 LED Module
- 4.1 LED's shall be mounted to a white aluminum panel.
- 4.2 LED's shall be conformal coated for protection.
- 4.3 LED Driver(s) shall be attached to panel.
- Warranty

All products will be warranted to be free of defects due to material and workmanship for a period of two (2) years.

## Lane Use Control Sign Specifications



# LED BLANK OUT SIGNS

- 1.0 General Description
- 1.1 Sign shall be capable of displaying one or multiple messages.
  - These messages may be red, amber or bluish/green.
  - These messages may be displayed on one side or two.
  - The messages shall be formed by single or double rows of LED's.
- 2.0 Functional Description
- 2.1 All messages shall be clearly legible, attracting attention under any lighting condition.
- At full intensity, the signal will be highly visible anywhere within a 15 degree cone centered about the optic axis.
- 2.2 The sign shall consist of:
  - a. Weatherproof housing and door.
  - b. LED's.
  - c. Transformers.
- 2.3 All LED's will be T-1 3/4 (5 millimeters).
- 2.4 LED's will have an expected lifetime of 100,000 hours.
- 2.5 All LED's will be high in optical power.
- They will be Agilent Technologies (HP) highest performance AlInGaP for the Red and Amber and Nichia's InGaN for the Bluish/Green and White.
- 2.6 Operating wavelengths will be:
  - a. Red - 626 nm.
  - b. Amber - 590 nm.
  - c. Bluish/Green - 505 nm.
- 2.7 Transformers shall be used to reduce the incoming 120 volts AC to the design DC voltage.
- 2.8 The transformers shall contain Class A insulation and weatherproofing.
- 2.9 The sign shall be capable of continuous operation over a range in temperatures from -35F to +165F (-37C to +75C).
- 2.10 50% Pulse Width Modulation Dimming available for improved nighttime visibility.



- 3.0 Aluminum Housing
- 3.1 Housings shall be constructed of extruded aluminum.
- A flat aluminum panel shall be welded into the housing back for one-way signs.
- 3.2 All corners and seams of one or two-way housings are heli-arc welded to provide a weatherproof seal around the entire case.
- 3.3 Continuous full-length stainless steel hinges shall connect the housing and the extruded aluminum door.
- 3.4 Signs shall have #3 stainless steel ¼ turn link-locks per door to tightly secure the door onto a gasket between it and the housing.
- Link-locks provide tool free access to the interior of the sign.
- 3.5 Door gaskets shall be 3/16" x 1" neoprene to provide a weatherproof seal.
- 3.6 The 0.125" extruded aluminum doors have one side removable to gain access to the sign face.
- 3.7 Sign face shall be 0.080" aluminum or equivalent, and have the entire LED assembly mounted to it.
- 3.8 Each door is fitted with a sun hood of 0.063" aluminum. Standard length is 6".
- 3.9 The sign face will be protected by a polycarbonate, matte clear, lexan faceplate.
- 3.10 Drainage shall be provided by four drain holes at the corners of the housing.
- 3.11 Finish on the sign housing shall be two coats of exterior enamel applied after surface material is acid-etched and primed with zinc-chromate primer.
- 4.0 LED Message Modules
- 4.1 The LED message module shall consist of the following components:
  - a. A rigid aluminum message plate.
  - b. High intensity LED's.
  - c. LED drive electronics.
- 4.2 The LED's shall be mounted in panel via mounted fixing clips.
- 4.3 Each LED shall be individually serviceable with spares included from the same batch to assure color uniformity upon replacement.
- 4.3 Door panels shall be flat black to maximize legibility when activated.
- 4.4 Electrical connections shall be made via barrier-type terminal strip.
- 4.5 All fasteners and hardware shall be corrosion resistant stainless steel. Warranty
- All products will be warranted to be free of defects due to material and workmanship for a period of two (2) years.

# 2070-7T GPS MODULE

GPS SERIAL COMMUNICATIONS MODULE FOR 2070 CONTROLLERS



## OVERVIEW

Sync your controller timeclock to GPS satellites to ensure accurate coordination and event/data logging with the Q-Free 2070-7T GPS serial communication module.

The module provides reliable, independent GPS time reference for 2070 controllers, including Q-Free's ATC and NEMA X-Series.

- GPS receiver operates on SP3 (slot A1) or SP1 (slots A2-A4)
- Additional DB9 EIA-232 serial port (C22S) operates on SP4 (slot A1) or SP2 (slots A2-A5)
- Fully hot swappable
- Tracking LED indicates GPS satellite acquisition status
- Puck-style stud-mount active GPS antenna included
- Microwave OS-9 clock update application included (operates with any 2070-1A, -1B CPU module)
- GPS loopback mode to DB9 (C22S) permits use as PC-hosted GPS receiver
- Standard NEMA-0183 GPS output message structure for custom integration

Meets or exceeds all applicable current Caltrans 2009 TEES specifications.

[www.q-free.com](http://www.q-free.com) | [info@q-free.com](mailto:info@q-free.com)

Product specifications may change at any time without notice and may not be available in all markets.  
Copyright © 2021 Q-Free. All rights reserved. Revised 09 Sept 2021.

## SPECIFICATIONS

- Power consumption (typical)
  - 100mA @5V
  - 10mA @12V
  - 125mA @12V ISO
- Antenna
  - 28dB gain
  - 3m cable
  - SMA male
- C22S serial port
  - DB9 female
  - EIA-232
  - Up to 38,400 bps
  - Electronically isolated
  - 2070 SP2/SP4
  - Full modem control when used as SP2 (RTS/CTS/DCD)
- Operating temperature range of -40°C to +85°C

