



CITY OF CARROLLTON

GENERAL CONDITIONS

AND

SPECIFICATIONS

FOR

RFP FOR TRAFFIC EQUIPMENT

RFP # 20-003

OPENING DATE:

MONDAY, FEBRUARY 10, 2020

10:00 AM (CST)

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NOTICE TO BIDDERS

Sealed Request for Proposal's will be received by the City of Carrollton at the office of Patricia Helms, Purchasing Manager, Carrollton City Hall Building, 1945 E. Jackson Road, Carrollton, Texas 75006-1790 until the hour of **10:00 AM (CST) on the 10th day of February 2020**; at which time proposals duly delivered and submitted will be considered for supplying the following:

REQUEST FOR PROPOSAL FOR TRAFFIC SIGNAL EQUIPMENT
RFP # 20-003

Any request for proposals received after stated closing time will be returned unopened. If request for proposals are sent by mail to the Purchasing Manager, the proposer shall be responsible for actual delivery of the request for proposal to the Purchasing Manager before the advertised date and hour for opening of request for proposals. If mail is delayed by the postal service, courier service, an internet service provider or in the internal mail system of the City of Carrollton beyond the date and hour set for the request for proposal opening, request for proposals thus delayed will not be considered and will be returned unopened. City Hall Building business hours are: Monday-Thursday, 7:30 AM to 5:30PM, and Friday, 7:30 AM to 11:30 PM

Information concerning the RFP specifications may be obtained by emailing Michael Brighton, Public Works Traffic Operation Supervisor, 972-466-9872 via email Michael.brighton@cityofcarrollton.com.

Please be sure to copy purchasing bids@cityofcarrollton.com on any and all correspondence. **Information on the bid process/procedures** may be obtained from Ebonie Williams, City of Carrollton Buyer, (972) 466-3105 or Patty Helms, Purchasing Manager (972) 466-3115 purchasing@cityofcarrollton.com.

Until the final award by the city of Carrollton, said City reserves the right to reject any and/or all bids, to waive technicalities, to re-advertise, to proceed otherwise when the best interests of said City will be realized hereby. Bids will be submitted sealed and plainly marked with the date and time of opening. The city of Carrollton Municipal Building is wheelchair accessible.

To request a reasonable accommodation needed for bid openings for a disability, please contact the Purchasing Office 72 hours in advance at (972) 466-3115.

CITY OF CARROLLTON, TEXAS



Patricia Helms, Purchasing Manager

Publication Dates: Sunday, January 26, 2020 & Sunday, February 2, 2020

Closing Date: Monday, February 10, 2020 10:00 AM

PART I

GENERAL CONDITIONS

GENERAL CONDITIONS

1.1 ADDENDA

It is the responsibility of the Vendor to check for addenda. Addenda will be posted to the City’s website:

www.cityofcarrollton.com/purchasing

1.2 ASSIGNMENT OF REQUEST FOR PROPOSAL/CONTRACT

The successful proposer may not assign their rights and duties under an award without the written consent of the City Manager or Assistant City Manager authorized to bind City on. Such consent shall not relieve the assignor of liability in event of default by their assignee.

1.3 REQUEST FOR PROPOSAL CONSIDERATION / TABULATION

After request for proposals are opened and publicly read, the request for proposals will be tabulated for comparison on the basis of the request for proposal prices and quantities (lowest responsible Vendor) or by the best value method shown in the Proposal. Until final award of the Contract, the city reserves the right to reject any or all request for proposals, to waive technicalities, to re-advertise for new request for proposals, or to take other action deemed in the best interests of the City.

Proposals will be rated based on the following criteria:

- **Pricing of requested items 70%**
- **Ability to deliver product in a timely manner..... 15%**
- **Vendor History/Performance 15%**

1.4 REQUEST FOR PROPOSAL SUBMISSION

- Request for Proposals may be submitted in person, by mail or electronically.
- To submit a Request for Proposal electronically, all documents must be returned and a **digital signature provided on the proposal to submitters form. SUBMIT REQUEST FOR PROPOSALS VIA EMAIL TO PURCHASING.BIDS@CITYOFCARROLLTON.COM**
- **Please note electronic copies of Attachment C – Pricing Sheet must be submitted using must be in EXCEL FORMAT ONLY.**
- Submit proposals via mail to PO Box 110535, Carrollton, TX 75011-0535. Proposals must be marked on the outside of the packaging, “**RFP # 20-003 RFP FOR TRAFFIC SIGNAL.** Vendors do not need to come to the opening, but are welcome if so desired. At the opening, the name of responding Vendor will be identified. No other information will be provided. The responding Vendors will be listed on the RFP website with 24 hours
- Firms interested in this project shall submit **two (2) copies** of the proposal and required documents listed throughout the RFP no later than **Monday, February 10, 2020 by 10:00 am** to the address and contact person listed on page #3.

- To submit a proposal via mail, all documents must be returned and an original signature provided on the proposal to bidders sheet.
- RFP's will not be accepted in either format without a signature.
- The City is not responsible for mail service. See page 2, paragraph 2 of the Notice to Bidders.

1.5 BRAND NAMES

If items for which request for proposals have been called for have been identified by a “brand name or equal” description, such identification is intended to be descriptive, but not restrictive, and is to indicate the quality and characteristics of products that will be satisfactory. Request for proposals offering “equal” products will be considered for award if such products are clearly identified in the request for proposals and are determined by the Purchasing Manager and requesting Department to be equal in all material respects to the brand name products referenced. **Unless the proposer clearly indicates in their request for proposal that they are offering an “equal product”, their request for proposal shall be considered as offering a brand name product referenced in the Proposal Schedule.**

1.6 CANCELLATION OF REQUEST FOR PROPOSALS

Request for proposals may be cancelled with **60** days written notice with good cause as determined by the City.

1.7 CHANGES OR ALTERATIONS

No part of this request for proposal may be changed/alterd in any way. Vendors must submit written requests to change any specifications/conditions no later than the deadline for questions. *Changes made without submission of a written request to this request for proposal will result in disqualification.*

1.8 COMPLETING INFORMATION

Proposer must fill in all information asked for in the blanks provided under each item. Failure to comply may result in rejection of the Request for Proposal at the City's option.

1.9 CONTRACT CLAUSE

All proposers understand and agree that the vendor's request for proposal response will become a legally binding contract upon acceptance in writing by the City. This contract may be superseded only if replaced with a more extensive contract that is agreed to by both parties.

1.10 DEFAULT

In case of default of the successful proposer, the City of Carrollton may procure the articles from other sources and hold the proposer responsible for any excess cost occasioned thereby.

1.11 DELIVERY

The City reserves the right to demand bond or penalty to guarantee delivery by the date indicated. If order is given and the Proposer fails to furnish the materials by the guaranteed date, the City reserves the right to cancel the order without liability on its part. All prices are to be F.O.B. Carrollton, Texas all freight prepaid.

1.12 DELIVERY DATE

Delivery date is an important factor to the City and may be required to be a part of each request for proposal. The City of Carrollton considers delivery time to be that period elapsing from the time the individual order is placed until that order or work thereunder is received by the City at the specified delivery location. The delivery date indicates a guaranteed delivery at Carrollton, Texas. Failure of the proposer to meet guaranteed delivery dates or service performance could affect future City orders.

Whenever the Contractor encounters any difficulty which is delaying or threatens to delay timely performance (including actual or potential labor disputes), the Contractor shall immediately give notice thereof in writing to the Purchasing Manager, stating all relevant information with respect thereto. Such notice shall not in any way constitute a basis for an extension of the delivery or performance schedule or be construed as a waiver by the City of any rights or remedies to which it is entitled by law or pursuant to provisions herein. Failure to give such notice, however, may be grounds for denial of any request for an extension of the delivery or performance schedule because of such delivery.

1.13 INDEMNIFICATION

IN CASE ANY ACTION IS BROUGHT AGAINST THE CITY, OR ANY OFFICER OR AGENT OF THE CITY, FOR THE FAILURE, OMISSION, OR NEGLECT OF THE VENDOR TO PERFORM ANY OF THE COVENANTS, ACTS, MATTERS, OR THINGS BY THIS CONTRACT UNDERTAKEN; OR FOR INJURY OR DAMAGE CAUSED BY THE ALLEGED NEGLIGENCE OF THE VENDOR OR HIS SUBCONTRACTORS, OR HIS OR THEIR AGENTS, OR IN CONNECTION WITH ANY CLAIM BASED ON LAWFUL DEMANDS OF SUBCONTRACTORS, WORKMEN, MATERIALMEN, OR SUPPLIERS, THE VENDOR SHALL INDEMNIFY AND SAVE HARMLESS THE CITY AND ITS OFFICERS AND AGENTS, FROM ALL LOSSES, DAMAGES, COSTS, EXPENSES, JUDGMENTS, OR DECREES ARISING OUT OF SUCH ACTION, INCLUDING ATTORNEY FEES.

1.14 INSURANCE

Deductibles, of any type, are the responsibility of the vendor/contractor.

A. Before commencing work, Bidder shall, at its own expense, procure, pay for and maintain during the term of this Agreement the following insurance written by companies approved by the state of Texas with an A.M. Best rating of at least A and acceptable to the City. Bidder shall furnish to the City of Carrollton Purchasing Department certificates of insurance executed by the insurer or its authorized agent stating coverages, limits, expiration dates and compliance with all applicable required provisions. Certificates shall reference the project/contract number. Subscriber has the right to a copy of the full policy. The City of Carrollton shall be listed as an additional insured under all liability policies except for professional & automobile liability policies.

1. Commercial General Liability insurance, including, but not limited to Premises/Operations, Personal & Advertising Injury, Products/Completed Operations, Continuing Operations, Independent Contractors and Contractual Liability, with minimum combined single limits of \$1,000,000 per-occurrence, \$1,000,000 Products/Completed Operations Aggregate and \$2,000,000 general aggregate. Coverage must be written on an occurrence form. The General Aggregate shall apply on a per project basis.
2. Workers' Compensation insurance with statutory limits; and Employers' Liability

coverage with minimum limits for bodily injury: a) by accident, \$100,000 each accident, b) by disease, \$100,000 per employee with a per policy aggregate of \$500,000.

3. Business Automobile Liability insurance covering owned, hired and non-owned vehicles, with a minimum combined bodily injury and property damage limit of \$1,000,000 per occurrence.
4. Professional Liability (Errors and Omissions Liability) and Cyber Risk Insurance (including professional oversight liability), covering acts, errors, and omissions arising out of Bidder's operations or services with minimum limits of \$1,000,000 per occurrence, \$2,000,000 annual aggregate.

NOTE: If the insurance is written on a claims-made form, coverage shall be continuous (by renewal or extended reporting period) for not less than *thirty-six (36) months* following completion of the contract and acceptance by the City of Carrollton.

- B. With reference to the foregoing required insurance, Bidder shall endorse applicable insurance policies as follows:
1. A waiver of subrogation endorsement shall be added to Bidder's workers' compensation policies to eliminate the potential that the workers' compensation insurer will subrogate against the City, its officials, employees, and officers shall be contained in the Workers' Compensation insurance policy.
 2. The City of Carrollton, its officials, employees and officers shall be named as additional insureds on the Commercial General Liability policy, by using endorsement CG2026 or broader.
 3. All insurance policies shall be endorsed to the effect that City of Carrollton will receive at least thirty (30) days' notice prior to cancellation, non-renewal, termination, or material change of the policies.

- C. All insurance shall be purchased from an insurance company that meets a financial rating of at least A or better as assigned by A.M. Best Company.

Other Insurance Provisions

1. The City is to be named as an additional insured on the Commercial General Liability Insurance policy. These insurance policies shall contain the appropriate additional insured endorsement signed by a person authorized by the insurer to bid coverage on its behalf.
2. Insurance is to be placed with insurers with a Best rating of no less than A. The company must also be duly authorized to transact business in the State of Texas.
3. Workers' Compensation and Employers' Liability Coverage: Statutory. The insurer shall agree to waive all rights of subrogation against the City, its officials, employees and volunteers for losses arising from the activities under this contract.
4. Certificates of Insurance and Endorsements effecting coverage required by this clause shall be forwarded to the Purchasing Manager upon award of the contract(s).
5. Insurance Certificate must be submitted and issued with the City listed as the certificate holder.

1.15 MISCELLANEOUS

Except as to any supplies or components which the specifications provide need not be new, all supplies and components to be provided under this contract shall be new (not used or reconditioned, and not of such age or so deteriorated as to impair their usefulness or safety), of current production and of the most suitable grade for the purpose intended. If at any time during the performance of this contract the Contractor believes that the furnishing of supplies or components which are not new is necessary or desirable, they shall notify the Purchasing Manager immediately, in writing, including the reasons therefore and proposing any consideration which will flow to the City if authorization to use supplies or components is granted.

The City of Carrollton supports a recycling program. Recycled materials are acceptable and will be considered for award. The City desires to use recycled products when a comparable material/product is available. If your company distributes products made of recycled materials, please submit an alternate request for proposal for the items requested. All recycled products should meet the minimum standards established in the request for proposal specifications provided. State any exceptions: costs, warranties and percentage of recycle materials used in the manufacture of the material/product. The City will determine the acceptability of the materials/product request for proposal as an alternate.

The City will consider special vendor pricing on discounts in exchange for City's willingness to participate in new product testing or promotion including ability of vendor to bring other potential customers to city job sites to demonstrate product. The amount of product discount in exchange for these services should be clearly stated in the request for proposal document. Any promotional strategies should be discussed with the Purchasing Manager and approved by the appropriate City Official(s) before submission of the request for proposal.

Successful proposer(s) agrees to extend prices to all entities that have entered into or will enter into joint purchasing inter-local cooperation agreements with the City of Carrollton. As such, the City of Carrollton has executed or may enter into an inter-local agreement with certain other governmental entities authorizing participation in a cooperative purchasing program. The successful vendor may be asked to provide product/services, based upon the request for proposal price, to any other participant in the forum.

The City operates on a fiscal year that ends on September 30th. State law mandates that a municipality may not commit funds beyond a fiscal year; this request for proposal is subject to cancellation if funds for this commodity are not approved in the next fiscal year.

1.16 PAYMENT TERMS & CONDITIONS

All proposals shall specify terms and conditions of payment, which will be considered as part of, but not control, the award of request for proposal. City review, inspection, and processing procedures ordinarily require thirty (30) days after receipt of invoice, materials or service. Request for proposals which call for payment before 30 days from receipt of invoice, or cash discounts given on such payment, will be considered only if in the opinion of the Purchasing Manager the review, inspection and processing procedures can be completed as to the specific purchases within the specified time.

It is the intention of the City of Carrollton to make payment on completed orders within thirty (30) days of receiving invoicing unless unusual circumstances arise. Invoices shall be fully documented as to labor, materials and equipment provided. Orders will be placed by the Purchasing Department and must be given a Purchase Order Number to be valid. No payments shall be made on invoices not listing a Purchase Order Number. No partial payment will be made.

Payment will not be made by the City until the vendor has been given a Purchase Order Number, has furnished proper invoice, materials, or services, and otherwise complied with City Purchasing procedures, unless this provision is waived by the City.

1.17 PROVISIONAL CLAUSES

The City of Carrollton will not enter into any contract where the cost is provisional upon such clauses generally known as “escalator” or “cost-plus” clauses.

1.18 REJECTION OF REQUEST FOR PROPOSALS

The City reserves the right to reject any or all request for proposals or to waive technicalities at its option when in the best interests of said City.

Request for proposals will be considered irregular if they show any omissions, alteration of form, additions, or conditions not called for, unauthorized alternate request for proposals or irregularities of any kind. However, the City reserves the right to waive any irregularities and to make the award in the best interests of the City.

The City reserves the right to reject any or all request for proposals, and all request for proposals submitted are subject to this reservation. Request for proposals may be rejected, among other reasons, for any of the following specific reasons:

- Request for proposals received after the time limit for receiving request for proposals as stated in the advertisement.
- Proposal containing any irregularities.
- Unbalanced value of any items.

Proposers may be disqualified and their request for proposals not considered, among other reasons, for any of the following specific reasons:

- Reason for believing collusion exists among the Proposers.
- Reasonable grounds for believing that any Proposer is interested in more than one Proposal for the work contemplated.
- The Proposer being interested in any litigation against the City.
- The Proposer being in arrears on any existing contract or having defaulted on a previous contract.
- Lack of competency as revealed by a financial statement, experience and equipment, questionnaires, etc.
- Uncompleted work, which in the judgment of the City will prevent or hinder the prompt completion of additional work if awarded.

1.19 REQUEST FOR NON-CONSIDERATION

Request for proposals deposited with the City cannot be withdrawn prior to the time set for opening request for proposals. Request for non-consideration of request for proposals must be made in writing to the Purchasing Manager and received by the City prior to the time set for opening request for proposals. After other request for proposals are opened and publicly read, the Proposal for which non-consideration is properly requested may be returned unopened. The Proposal may not be withdrawn after the request for proposals have been opened, and the Proposer, in submitting the same, warrants and guarantees that this request for proposal has been carefully reviewed and checked, that it is in all things true and accurate and free of mistakes, and that such request for proposal will not and cannot be withdrawn because of any mistake committed by the Proposer.

1.20 SALES TAX

The total for each request for proposal submitted must include any applicable taxes. Although the City is exempt from most City, State, or Federal taxes, this is not true in all cases. It is suggested that taxes, if any, be separately identified, itemized, and stated on each request for proposal. The City cannot determine for the proposer whether or not the request for proposal is taxable to the City. The proposer through the proposer's attorney or tax consultant must make such determination. Bills submitted for taxes after the request for proposals are awarded will not be honored.

PART II

INSTRUCTION TO BIDDERS

TRAFFIC SIGNAL EQUIPMENT

The equipment to be purchased from this proposal will take care of needs for traffic signal repairs and maintenance, installation of new traffic signals, replace existing pole tops and bases as necessary.

Special Conditions

1. Length of this agreement shall be for one (1) full year with the option to renew the contract for an additional two one-year periods provided both parties are in agreement.
2. Quantities as show on Attachment A- Pricing Proposal Sheet are estimates. The city of Carrollton reserves the right to increase or decrease these quantities during this agreement upon usage.
3. The City of Carrollton reserves the right to cancel this agreement upon thirty- (30) days written notice with good cause.
4. Purchase orders will be issued on an as needed basis.
5. The City of Carrollton reserves the right to require samples on any item prior to bid award. Samples shall be submitted at no cost to the city. All items submitted shall become property of the City of Carrollton.
6. **ALL PAGES OF THIS BID MUST BE SUBMITTED TO BE CONSIDERED.**
7. The City operates on a fiscal year that ends on September 30th. Because State law states that a municipality may not commit funds beyond a fiscal year, this bid is subject to cancellation if funds for this commodity are not approved in the next fiscal year.
8. Successful bidder(s) agrees to extend prices to all entities that have entered into or will enter into joint purchasing interlocal cooperation agreements with the City of Carrollton. The City of Carrollton is a participating member of the Collin County Governmental Purchasers Forum. As such, the City of Carrollton has executed an interlocal agreement with certain other governmental entities in Collin County authorizing participation in a cooperative purchasing program. The successful vendor may be asked to provide product/services, based upon the bid price to any other participant in the forum.
9. The city reserves the right to award this bid either by category or by line, whichever is in the best interest of the city. The vendor must make a notation if there is any exception to this.
10. **The RFP will be evaluated based on the follow evaluation criteria:**
 - Pricing of requested items 70%
 - Ability to deliver product in a timely manner..... 15%
 - Vendor History/Performance15%

RFP SPECIFICATIONS

LOT # 1

ITEM # 1

CONTROLLER UNIT

LOT # 1

CONTROLLER UNIT SPECIFICATIONS

1. SCOPE

The purpose of this document is to describe the minimum acceptable design and operating requirements for a fully actuated two to eight phase traffic controller unit with a full complement of operational, programming, and diagnostic capabilities. The controller unit shall include comprehensive traffic control, analytical and management capabilities utilizing efficient, menu structured traffic oriented/English language operator interface. This controller unit shall be Siemens M60 and required to communicate and work with existing Siemens\Eagle Signal Tactics system software in a closed loop environment.

2. DEFINITIONS

NEMA Standards Publication No. TS 2-1992, Section 1 shall apply and is supplemented with the following system definitions:

- a. Upload - transfer the "complete database" of the controller unit to a personal computer.
- b. Download - transfer the "complete database" of the controller unit stored in a personal computer to the controller unit.
- c. Intersection Monitoring - visually observe the local controller unit I/O operation in real time (current actual operation - not simulated) on the display of a personal computer.
- d. Controller Monitoring - visually observe the controller unit ring and phase timers in real time on the display of a personal computer. Timers include phase, time base, coordination, preemption, etc.
- e. Report Monitoring - capture by upload process all logged data to include controller alarms, flash operation, coordination plan changes, power off, power on, detector data (Counts, Occupancy, Speed and failures).

The term "complete database" of the controller unit refers to all data stored, programmed, set, selected or required to be determined by the local controller for operation. This shall include, but not be limited to, all phase, density, and pedestrian timings, as well as, overlap, initialization, preempt and system function settings, timings or values.

3. ENVIRONMENTAL STANDARDS

The controller unit shall perform all of its functions within the environment as defined by NEMA Standards Publication No. TS 2-1992. The controller unit shall meet or exceed the applicable sections and clauses of NEMA Standards Publication No. TS 2-1992 with respect to each of the following functions:

- Operating Voltage
- Operating Frequency
- Power Interruption
- Temperature and Humidity
- Transients, Power Service
- Transients, Input-Output Terminals
- Nondestruct Transient Immunity
- Vibration and Shock

4. CONTROLLER UNIT

This section defines the physical, interface, and functional requirements of solid-state controller units.

5. PHYSICAL STANDARDS

NEMA Standards Publication No. TS 2-1992, Section 3 shall apply for Actuated Type 1 (A1) and Type 2 (A2) and is supplemented as follows:

5.1 Dimensions

The dimensions of the controller unit enclosure shall conform to the following maximum limits:

Height = 10", Width = 16", & Depth = 9"

5.2 Design

- a. The controller unit shall be of modular design. The chassis shall be metal and shall be designed for easy access during maintenance, allowing for ease of testing without requiring disassembly or extender boards.
- b. All fuses, connectors, and controls shall be accessible from the front of the controller unit.

5.3 Printed Circuit Assemblies

Parts identification shall be etched or silk-screened on circuit boards. All circuit boards shall be interchangeable between controller unit configurations.

6. INTERFACE STANDARDS

The controller input/output interface shall conform to applicable sections and clauses of NEMA Standards Publication No. TS 2-1992 (Port 1, 2, & 3 and Connector A, B, & C) and is supplemented as follows.

6.1 Port 2 (RS-232C) Interface

The controller unit shall provide for asynchronous serial data communications with RS-232C signal levels to transmit and receive serial data in accordance with NEMA Standards Publication No. TS 2-1992 Section 3 for Unit to Printer and Unit to Personal Computer and is supplemented as follows:

6.1.1 Unit to Personal Computer

The controller unit shall be capable of telephone inquiry via auto-answer modem operation from a personal computer and shall provide all capabilities noted above (i.e., upload, download, status, and reports).

The controller unit shall be capable of originating a phone call to a personal computer upon detection of any critical monitored fault condition at the controller assembly without operator intervention. The selection of the monitored fault conditions to be defined as "critical" shall be user programmable.

6.1.2 Unit to Unit

The controller unit timing and operational data shall be capable of being transmitted via the RS-232C interface to/from another like controller unit. The unit-to-unit transmissions will not interrupt normal controller unit operation except when Unit Structure data is changed. When the received Unit Structure data is different from that running, the receiving unit shall automatically revert to the Start-Up state. The receiving unit shall time the Start-Up time and resume normal operation in the programmed Initialization interval.

6.1.3-Baud Rate

The controller unit shall be capable of varying the speed of Port 2 communications between 1200, 2400, 4800, 9600, and 19200 baud via program entry.

6.2 Port 3 System Interface

The controller unit shall provide for a System Interface in accordance with NEMA Standards Publication No. TS 2-1992 Section 3 and is supplemented as follows:

6.2.1 FSK Modem Interface

Optionally, the controller unit shall provide for two-wire half duplex FSK system interface to transmit and receive serial data.

6.2.2 RS-232C Interface

Optionally, the controller unit shall provide an RS-232C system interface to transmit and receive serial data.

6.2.3 Fiber Optic Interface

Optionally, the controller unit shall provide a Fiber Optic system interface to transmit and receive serial data.

6.2.4 Baud Rate

The controller unit shall be capable of varying the speed of Port 3 communications between 1200, 2400, 4800, 9600, and 19200 baud via program entry.

6.2.5 Special Adapters

Any adapter cable necessary to adapt to existing controller cabinet D connector shall be furnished with each unit. Existing controller cabinets have a D connector for special function panel. The special function panels are used to interface cabinet and controller function for Siemens\Eagle Signals Epac control units.

6.2.6 Ethernet Port

Ethernet port for two-way communications with Traffic Management Center software (Tactics). Must be able to link with Broadband ethernet radios with a constant link rate of 1.1 Mbps.

6.3 Programming

Programming of controller unit variables shall be via a front panel keypad and display. For ease of front panel programming the controller shall utilize English language menus.

The controller unit shall prevent the alteration of keypad set unit variables prior to the user having entered a specific code. This "Access" code shall also be user programmable via the keyboard.

All variables and variable names shall be simultaneously displayed for visual verification concurrent with entry.

6.3.1 Display

The controller unit shall utilize alpha/numeric characters for displaying programming information and controller timing.

The display shall have a minimum of eight (16) lines and up to forty (40) characters per line. The display shall be backlighted with a controller unit front panel contrast control.

The display shall provide the ability to simultaneously view the variable and its value for all applicable entries (e.g., all eight phase minimum green times).

The display shall have two modes of operation. The first mode shall be a dynamic mode; it shall show the active timing interval(s) with countdown. The second mode shall be a program mode; it shall show the interval and time/data programmed and/or being programmed.

6.3.2 Memory

The controller unit shall maintain user programmable variables in non-volatile EEPROM memory to assure continued safe and efficient controller unit operation after recovery from a power loss.

No batteries shall be required for retention of traffic parameters. Event logging and Time Base clock functions shall utilize a battery to support those functions.

Optionally, the EPROM memory shall be enclosed in a data module to facilitate data transfer from one controller unit to another. The module shall be constructed so as to protect the memory device(s) from contact while being inserted or removed from the controller unit.

6.3.3 Backup

The controller unit shall contain a reserve database of controller unit variables stored in Programmable Read Only Memory (PROM). It shall be possible for the operator to activate the reserve database by loading it into memory through a simple procedure utilizing front panel controls only. The default data shall also include 4 and 3 Phase Texas diamond capability. It shall be possible for the operator to activate the desired diamond operation through a simple procedure utilizing front panel controls only.

7. ACTUATED CONTROL

NEMA Standards Publication No. TS 2-1992, Section 3.5 shall apply and is supplemented as follows:

7.1 Per Phase

The controller unit shall provide the following functional capability on a per phase basis:

7.1.1 Adaptive Maximum

The Controller Unit shall provide an optional feature, which provides a phase-by-phase Adaptive Max operation, based on vehicle demand.

The Controller Unit shall provide a user entry of Dynamic Max (0-999 Seconds) and Dynamic Step (0-99.9 Seconds).

When Adaptive Max operation is enabled (Dynamic Max greater than 0), the Controller Unit shall set the phase Adaptive Max value equal to the Normal Max (Max 1, Max 2, etc.) for each phase.

After a phase maxs out twice in a row and on each successive max out thereafter, one Step value shall be added to the Adaptive Max until such addition would mean the Adaptive Max was greater than the larger of the Normal Max or the Dynamic Max.

After a phase gaps out twice in a row and on each successive gap out thereafter, one Max Step value shall be subtracted from the Adaptive Max until such subtraction would mean the Adaptive Max was less than the smaller of the Normal Max or the Dynamic Max.

If the phase gaps out in one cycle and maxs out the next cycle or vice versa, the Adaptive Max shall not change.

When a phase has not received service for a period equal to two times the Ring 1 sum of the larger of the Normal Max or Dynamic Max for each phase, the Controller Unit shall operate as though the phase had gapped out twice in a row. Subsequently and until such time as the phase receives service, the Controller Unit shall operate as though a gap out occurred every 60 seconds.

Maximum Recall shall disable Adaptive Maximum Green operation on a phase.

A failed detector shall disable Adaptive Maximum Green operation on a phase.

When Force Off terminates a phase, the Controller Unit shall not consider it a max out or gap out in the Adaptive Max operation.

When Interval Advance terminates a phase, the Controller Unit shall not consider it a max out or gap out in the Adaptive Max operation.

The Dynamic Max Values shall be enabled by Time Base or System Interface events.

7.1.2 Conditional Service

The Conditional Service feature provides for an optional method of phase selection. If two concurrent phases are timing and a call exists on the other side of the barrier and one of the phases is prepared to terminate due to gap out or max time out, the ring containing the timed out phase shall be allowed to revert to a preceding vehicle phase so long as 1) a call exists on a preceding vehicle phase, 2) the gapped/maxed phase is programmed for Conditional Service and 3) sufficient time remains to service the preceding vehicle phase before max time of the other phase has elapsed.

7.1.3 Last Car Passage

The controller unit design shall provide an alternate mode of operation to control green termination with Volume Density operation. Each phase operating in Volume Density mode will retain the right of way for the unexpired portion of the Passage time following a decision to terminate the green due to a reduced gap, when enabled via program entry. This provides a full passage time for the last vehicle (car), which crossed the detector prior to the decision to terminate the green.

7.1.4 Flashing Walk

The controller unit design shall provide an alternate mode, via program entry, where the phase Walk signal driver shall flash during the WALK interval. The WALK flashing shall provide an alternating output at 1 pulse per second rate with a 50 percent duty cycle.

7.1.5 Extended Pedestrian Clearance

The controller unit design shall provide an alternate mode of operation for the Pedestrian 'Don't Walk' Output to extend the flashing period (Ped Clearance) for each phase so programmed, so a portion (equal to the sum of the Yellow Change and Red Clearance time settings) may appear concurrently with the vehicle change intervals.

7.1.6 Actuated Rest in Walk

The controller unit design shall provide an alternate mode pedestrian dwell for actuated phases. The actuated phase shall Rest in Walk when so programmed and there is no serviceable conflicting call at the end of the Walk timing.

7.1.7 Special Sequence Operation

The controller unit design shall provide alternate Sequence operation as follows:

- a. Omit - each phase shall be capable of being omitted when a program-entered phase is ON.
- b. Minus Yellow - each phase shall be capable of not outputting a Yellow when a program-entered phase is outputting a YELLOW.

7.2 Per Unit

The controller unit shall provide the following functional capability on a per unit basis:

7.2.1 Stop Time Reset

The controller unit design shall provide an alternate mode of operation that resets defined timing intervals to the full value upon the release of a STOP TIME input.

When enabled, via program entry, the controller unit operation, upon the release of a STOP TIME input, will be conditioned by the timing/state active when the STOP TIME input was applied.

The following timings shall reset to the programmed value:

- a. Minimum Green
- b. Passage
- c. Maximum Green
- d. Walk
- e. Pedestrian Clearance
- f. Yellow Change
- g. Red Clearance
- h. Overlap Trailing Green
- i. Overlap Trailing Yellow
- j. Overlap Trailing Red

All other timings will be maintained status quo. These timings include but are not limited to any calculated Variable Initial, Time Before Reduction, Time To Reduce, Effective Gap, Last Car Passage, Detector Stretch, and Detector Delay timings.

7.2.2 Overlap Operations

- a. The controller unit design shall provide for the generation of eight overlaps. Means shall be provided to control the hardware output which Overlap E - H will appear on (typically these will be unused Pedestrian Load Switch Driver outputs).
- b. The controller unit design shall provide timing and control to enable the overlap load switch driver outputs to trail (i.e., delay the Overlap Green termination). Timing for each overlap shall be as follows:

Trail Green 0-999 sec (1-sec increments)

Trail Yellow 3-99.9 sec (0.1-sec increments)

Trail Red 0-99.9 sec (0.1-sec increments)

The controller unit design shall provide for programming each trailing overlap not to trail when a program entered phase is ON.

- c. The controller unit design shall provide for programming each overlap to not output a Green/Yellow when a program-entered phase is outputting a Green /Yellow respectively.

7.2.3 Variable Sequence

The controller unit shall provide the capability to define eight phases into a structure of one to four rings.

7.2.4 Alternate Sequences

The controller unit shall provide the capability of fifteen alternates to the standard sequence. The alternates shall be variations to the sequence based on up to four groups of two phases (Phase Pair) being serviced in reverse order.

The Alternate Sequences may be selected by the Alternate Sequence external interface or the coordinator as a function of the pattern (Timing Plan/Offset) in effect. When the internal coordinator is running, the external interface inputs for alternate sequences shall be ignored.

8. COORDINATION

NEMA Standards Publication No. TS 2-1992, Section 3.6 shall apply and is supplemented as follows:

8.1 Timings

All timings shall be in seconds so there shall be no conversion from seconds to percent and vice versa. The cycle length, yield points, permissive periods, and force off points shall be calculated internally.

8.2 Coord Modes

The coordinator shall provide the following modes of operation:

- a. Permissive Mode - The coord phase(s) shall operate as non-actuated when coordinated. The coordinator shall provide for a controlled release (permissive period) from the coord phase(s) to each of the remaining phases in sequence. When a call is not present for the phase to be serviced next in sequence, the coordinator shall re-allocate that phase's time to the end of the coord phase.

The first part of each permissive period shall consist of a vehicle permissive period. The length of the period shall be determined by the phase split and the vehicle minimum service time ($vmst = \text{Minimum Green or Maximum Initial} + \text{Yellow Change} + \text{Red Clear}$).

The second part of each permissive period shall consist of a pedestrian permissive concurrent with the vehicle permissive. The length of this period shall be determined by the phase split and the pedestrian minimum service time ($pmst = \text{Walk} + \text{Ped Clear} + \text{Yellow Change} + \text{Red Clear}$).

Prior to the beginning of the first permissive period, the coord phase pedestrian shall display the ped clear indication and dwell don't walk. This will expand each subsequent phase permissive due to the absence of coord phase ped clear time in each. The coord phase pedestrian shall dwell don't walk until such time as the coord phase terminates and returns to green or the last permissive period in the cycle is complete without the coord phase terminating.

- b. Yield Mode - The coord phase(s) shall operate as non-actuated when coordinated. The coordinator shall provide for a single release from the coord phase(s) to the remaining phases in sequence.
- c. Permissive Yield Mode - The operation shall be similar to Permissive Mode above with the following exceptions.
 1. The coord phase pedestrian shall be actuated.
 2. Immediately prior to the first permissive, the coordinator will provide a variable period for the coord phase extension (Permissive Yield Period).
 3. The amount of coord phase extension shall be distributed proportionally (i.e., taken from the actuated phases between the Permissive Yield Period and local zero).
- d. Permissive Omit Mode - The operation shall be equal to Permissive Yield Mode above except that once the coord phase has terminated to service a call, it shall not occur again until after the last phase permissive has terminated or a phase is on that is compatible with the coord phase.

- e. Permissive Omit Mode - The operation shall be similar to Permissive Mode above with the following exceptions.
 - 1. In single ring configurations, the coord phase, once terminated to service a call, will not occur again until the last permissive is over.
 - 2. In dual ring configurations, the coord phase, once terminated to service a call, will not occur again until servicing cord phase sub-cluster, or after the last permissive. Further, any actuated phases that is allowed to run concurrent with the coord phase which precede the coord phase shall not be serviced prior to their normal time in the background cycle.
- f. Sequential Omit Mode - The operation shall be similar to Permissive Mode above with the following exceptions.
 - 1. Sequential Omit Mode provides a phase-by-phase sliding window of service (lifted omit). One and only one phase in a ring shall have the omit lifted at any time.
 - 2. Following the Permissive Yield Period, the coord phase, shall be omitted until the last permissive is over.
 - 3. Following the Permissive Yield period, the opening of a permissive shall occur with the closing of the prior permissive. The closing of each permissive shall occur at its normal position in the cycle.
- g. Full Actuated Mode - The operation shall be similar to Permissive Mode above with the following exceptions.
 - 1. Following the Permissive Yield Period, any phase may be serviced in the standard sequence provided the permissive period for that phase has not expired.
 - 2. Following the Permissive Yield Period and prior to the end of the permissive for the phase before the first coord phase, the coord phase shall operate as an actuated phase.

8.2.1 Coordination Correction Modes

The coordinator shall provide a minimum of 4 different methods of cycle correction:

- 1. Standard Dwell Mode which holds the specified coord phase green until the unit cycle correction has been accomplished.
- 2. Max Dwell Mode which allows the user to determine the maximum time allowed for the unit to use for cycle correction. This mode establishes the dwell limits for a single phase.
- 3. Short Way Mode allows the controller to calculate to use short way correction by taking time away from allowable phases or use dwell mode, adjustments limited to 20% of the cycle length. This process shall take into consideration the minimum time values of each phase in order to not skip a phase.
- 4. Short Way Plus allows the controller to calculate the correction values up to 20% of the cycle length and add that value to the allowable phases. No phases are shortened when in this mode of correction.

All 4 modes of coordination correction shall be available also when operating as a 4 or 3 phase diamond. At no time shall the coordination correction calculation cause a phase to be skipped.

8.3 Force Off

When the coordinator is running, actuated phase force off shall occur based on the phase being active the allocated time. This operation provides a means to reallocated unused time from actuated phase(s) in the background cycle to the next coord phase.

Means shall be provided, via program entry, to cause actuated phase force off to occur based on its nominal position in the Cycle. This operation shall provide a means to reallocate unused time from actuated phase(s) in the background cycle to the next phase in sequence that can take it.

8.4 Maximum Green

When the coordinator is running, Maximum Green termination functions of all phases shall be disabled.

Means shall be provided, via program entry, to enable Maximum Green I or Maximum Green II to be active when the coordinator is running.

8.5 Phase Modes

- a. Coord Phase(s) - The coordinator shall provide for definition, via program entry, of coord phase(s) in each Timing Plan. When no phase(s) have been programmed as the coord phase(s), the controller shall run Free. When operating in multiple ring controller configurations, a phase in each ring must be programmed as the coord phase unless compatibility does not exist within that ring to the coord phase in the other ring(s).
- b. Dual Coord Phase(s) - The coordinator shall provide for definition, via program entry, of dual coord phase(s) in each Timing Plan. Dual coord phase(s) shall maintain a fixed position in the pattern cycle in relationship to the coord phase. Dual coord phase(s) may begin early but shall not terminate later than the allocated times would imply.
- c. Actuated Phase Modes - The coordinator shall provide operational modifiers, via program entry, for each actuated phase in each Timing Plan. The modifiers shall be:
 1. Minimum Vehicle Recall
 2. Maximum Vehicle Recall
 3. Pedestrian Recall
 4. Maximum Vehicle Recall and Pedestrian Recall
 5. Phase Omit

8.6 Alternate Sequences

The coordinator shall be capable of implementing alternate sequences to operate with each pattern (Timing Plan plus Offset), via program entry.

When the coordinator is running, external selection of the Alternate Sequence shall be ignored.

8.7 Alternate Coord Modes

The coordinator shall be capable of implementing alternate coord modes to operate with each pattern (Timing Plan plus Offset), via program entry.

9. PREEMPTION

NEMA Standards Publication No. TS 2-1992, Section 3.7 shall apply and is supplemented as follows:

Each Preempt Input shall provide two modes of priority control based on the form of the input signal. A standard input form for Preempt (railroad or emergency vehicle), and an alternate input form for Low Priority (bus or transit vehicles).

The Low Priority routine shall cause termination of the active phase(s), if other than the Low Priority phase(s), and cause an orderly cycling to the Low Priority phase(s). Cycling to the Low Priority phase(s) shall provide service according to minimum timing requirements of the phase(s) serviced while cycling. Once the Low Priority has been satisfied, the routine shall release control to normal operation.

9.1 Output Modification

The Preemptor shall provide for setting Ring and Phase outputs to the following conditions after Delay has timed out and preempt transition has begun:

- a. Phase On, Next, and Check: No Output
- b. Ring Status Bits: Code 7 (NEMA)

9.2 Preemption Timing

The Preemptor shall provide sixteen timing intervals for each preempt routine and one timing interval for each ring in the controller unit. The timing Intervals and Range shall be:

<u>Interval</u>	<u>Range</u>
Ring Min Grn/Wlk	0 to 999 sec

The timing intervals per preempt routine shall be as follows:

9.2.1 Delay Extend, & Duration

The Preemptor shall provide a timed interval (Delay) after the Preempt call is received before the controller unit operation is interrupted and a Preempt transition begins. Once a Preempt transition has begun, the routine shall complete regardless of the call status and/or memory programming.

The Extend timer shall be reset whenever a Preempt actuation is received and shall begin timing when the Preempt actuation terminates.

The Duration timing shall start immediately when the Preempt call is received. Duration timing shall be internally set to a value equal to Delay plus Duration parameters and shall time concurrently with Delay.

9.2.2 Preempt Greens & Return

The Preemptor shall provide for the selection of vehicle and pedestrian signal status in Interval 4 (Track Green) and Interval 8 (Dwell) and the phase(s) to receive service first following the completion of Preemption.

Each vehicle load switch driver group (G-Y-R) and each pedestrian load switch driver group (W-PC-DW) shall be selectable, via program entry, as to the output condition (R, G, FY, FR, or DARK) and (D, W, FW, or DARK) in intervals 4 (Track Green) and Interval 8 (Dwell) separately.

The controller unit shall be capable of setting a limit on the time a Preempt call may remain active (MXCALL) and be considered valid. When the Preempt call has been active for this time period, the controller unit shall return to normal operation. This Preempt call shall be considered invalid until such time as a change in state occurs (no longer active).

Each Preempt routine shall be capable of being linked, via program entry, to a higher priority Preempt to enable multiple clearance movements prior to a Dwell state. More than one Preempt routine shall be linkable to the same Preempt routine.

The phase(s) to receive service first on exit from a preempt shall be selectable through the keypad.

On exit from a Preempt routine a return to coordinated operation or a Low Priority routine shall be prevented for an adjustable time period (Lockout) or until one complete cycle of service to phases with serviceable calls.

9.2.3 Transition

The preemption program shall provide the signal display for an orderly and safe transition from the point of entry to the first preempt green state (Track Green), from the first to second green state (Track Green to Dwell), and from the second green to the return-to-normal green state (Dwell to Normal).

The normal interval timing in effect at the moment Preempt is recognized (after Delay and Minimum Green/Walk are satisfied) shall continue operating through Preempt intervals 1 to 3 so as not to provide abnormally long ped clear, yellow, or red timings.

9.2.4 Cycle

The Preempt routine shall allow cycling during the Dwell interval prior to the completion of Duration and termination of the Preempt call. The Dwell interval time shall establish the minimum cycling time.

Pedestrian outputs shall not cycle unless their applicable phase is permitted to cycle.

9.3 Low Priority Routines

The Preemptor shall provide for up to six (6) Low Priority routines.

9.3.1 Input Priorities

All Low Priority routines shall be equal in priority. Whenever more than one Low Priority routine reaches the point of transition (Delay timed out) simultaneously, the lower numbered routine shall have control.

Preempt routines shall always have priority over and override Low Priority routines. Remote Flash and Low Priority routines shall be equal in priority. Start-Up Flash, External Start and Stop Time shall always have priority over Low Priority routines. Phase Omits when active on Low Priority Dwell Phase shall prevent the phase from being serviced.

9.3.2 Timing

The Low Priority routine shall provide for six (6)-timing intervals for each Low Priority routine. The timing intervals and ranges shall be as follows:

<u>Interval</u>	<u>Range</u>
A. Delay	0 to 999 sec
B. Extend	0 to 999 sec
C. Duration	0 to 999 sec
D. Dwell	0 to 999 sec

9.3.3 Delay, Extend, & Duration

The Low Priority routine shall provide a timed interval (Delay) after the Low Priority call is received before the controller unit operation is interrupted and the Low Priority transition occurs.

Once the Low Priority transition begins, the routine shall complete regardless of the input status and/or memory programming.

The Extend timer shall be reset whenever a Low Priority actuation is received and shall begin timing when the Low Priority actuation terminates.

The Duration timer shall begin timing when the Low Priority call is received. Duration timing shall be internally set to a value equal to Delay plus Duration parameters and shall time concurrently with Delay. The Duration timing shall be reset with each Low Priority actuation.

9.3.4 Transition

The Low Priority routine shall provide for an orderly and safe transition from the point the transition begins to the programmed Dwell Phase(s). The ability to Skip phase(s) with serviceable call, during the transition cycle, shall be provided as a user option.

9.3.5 Dwell & Return

The Low Priority routine shall provide for the selection of the phase(s) to receive service during the Low Priority Dwell period and the phase(s) to receive pedestrian calls upon termination of the Low Priority routine. The controller shall be capable of setting a limit on the time a Low Priority call may remain active (MXCALL) and the call still be considered valid.

On exit from a Low Priority routine, a return to coordinated operation or to another Low Priority routine shall be prevented for a specified time period (LOCKOUT) or until one complete cycle of service to phases with serviceable calls.

10. TIME BASE

NEMA Standards Publication No. TS 2-1992, Section 3.8 shall apply and is supplemented as follows:

The internal Time Base Control (TBC) shall be a special program operating within the controller unit. A minimum of 250 different TBC events shall be capable of being programmed over a 99 year time frame on a Time-Of-Day, Day-Of-Week, and Month Day- Of-Year basis.

10.1 Program Day

A program day shall be the list of traffic and/or auxiliary events to occur in a 24-hour period. The TBC program shall provide for 99 program days to be defined.

It shall be possible to equate program days, which may require the same event listing to effectively multiply the event capacity.

It shall be possible to copy an entire program day event listing to another program day to establish a database for editing to create a similar but different program day event listing.

10.2 Special Days

The exceptions to the normal day-of-week event listings shall utilize Time-Of-Year Special program days. Time-Of-Year Special program days 01 through 49 shall be utilized for special day programs, which occur on the same date (month and month day) every year. Program days 50 through 99 shall be utilized for special days, which occur on one date (year, month, & month day).

10.3 Alternate Week

The Time Base events shall be implemented from a weekly schedule of program days on a day-of-week (except for special days) basis.

The normal day-of-week (Sunday through Saturday) event listing shall utilize program days 01 through 07 with Sunday being program day 01.

The Time-of-Year event structure shall provide a means of substituting nine (9) alternate weekly schedules for the normal weekly schedule.

10.4 Event Capacity

A minimum of 250 traffic and/or auxiliary events shall be capable of being programmed. A minimum of 250 special days shall be capable of being programmed. The capacity of either of the above may be inversely affected by the number of entries in any one.

- a. A traffic event shall consist of a coordination pattern (Dial #, a Split #, and Offset #) or free mode modifiers (Max 2 by Phase and/or Omit by Phase) and the time of occurrence (hour, minute, & program day).
- b. An auxiliary event shall consist of the condition of Auxiliary outputs, Dimming control, and the time of occurrence (hour, minute, & program day).
- c. A time-of-year event shall consist of a special day or alternate week plus date of occurrence (year, month & month day).

10.5 Traffic Programs

In addition to Timing Plan and Offset commands, the TBC program shall provide the following as traffic events:

- a. Flashing (Voltage Monitor inactive)
- b. Free or Respond to Coord Inputs
- c. Maximum 2 Timing by Phase
- d. Phase Omit by Phase

The event programming capability when responding to Coord Inputs shall provide for partial TBC and partial interconnect control as well as one or the other.

Maximum 2 Timing by Phase and Phase Omit by Phase is Free Mode modifiers and shall not be part of an event, which selects a pattern (Timing Plan/Offset) or Flash.

10.6 Auxiliary Outputs

There shall be three auxiliary outputs available. Each output shall be non-cyclic, each totally independent of any other output. The outputs shall not be affected by any other input including the on-line input. The auxiliary outputs may begin and/or end concurrently with another program.

An additional eight- (8) system special functions shall also be available and programmable under Time Base. Programming of any of these special functions shall have priority for over external control, e.g. from a master, for that function.

11. MISCELLANEOUS

11.1 Traffic Responsive Queue Routines

The controller unit shall be capable of selecting patterns based upon computed V+O of two queue selection routines (Queue 1, and Queue 2).

The priority of routines are in the following order:

1. Queue 2 Level 2
2. Queue 2 Level 1
3. Queue 1 Level 2
4. Queue 1 Level 1

Each routine shall have programmable threshold settings. If the threshold (Level 1 and/or 2) is reached on a routine, the local controller shall call for a pre-programmed pattern, overriding the pattern called for by the normal control source (System, TBC, Interconnect, etc.).

It shall be possible to select different patterns with each of the routines.

It shall be possible to define all or part of the pattern these queue routines shall override. When only part of a pattern is overridden, the remaining shall be selected in the normal manner.

When a Queue routine defines a partial pattern, the source of the normal pattern provides sync; otherwise TBC provides sync reference. If no TBC event exists prior to occurrence of Queue override then sync to 24:00 hours when event sync is programmed else sync to last event time.

12. TRAFFIC ANALYSIS FUNCTIONS

The following desired capabilities shall be optional, however provision of such will be cause for preferential consideration for award. Refer to Specification Compliance Section for bidder submittal requirements.

12.1 System Detectors

12.1.1 Detector Data

The controller unit shall have the ability to receive input data from up to eight special detector inputs in addition to the phase vehicle detector inputs. The user shall have the option to assign any of the phase vehicle detectors or special detectors as one of eight 'system detectors'.

The controller unit shall process all system detector data, consisting of volume and occupancy, and shall be capable of transmitting the results of this processing to either the master controller or personal computer. As a minimum, the following data shall be determined per system detector:

Raw Volume Counts & Occupancy Seconds

Average Volume & Occupancy Percent

12.1.2 System Detector Report

The controller unit shall generate a System Detector Report based on an adjustable logging interval and sample period. The report shall include raw volume, raw occupancy, average volume percent, and average occupancy percent for the sample period. This report shall have the capacity to store up to twenty-four sample periods. A sample period data set shall remain until the report capacity is exceeded at which time the oldest sample period data set will be replaced by the new data set.

This report shall be capable of being viewed on the display, printable via the RS232C port, and transmitted to a personal computer.

12.2 Measures Of Effectiveness

Measures of Effectiveness (MOE's) shall be accumulated and reported to enable the evaluation of coordination pattern parameters based on actual data collected during the time periods the pattern is in control. MOE calculations shall be made once each sequence cycle for Volume, Stops, Delay and Utilization for each phase in the controller unit and then averaged over the duration of the pattern.

Volume shall represent the average number of actuations during the sequence cycle, for each phase, over the duration of the pattern.

The Stops measurement shall represent the average number of vehicles, which must stop at an intersection during the cycle for the duration of the pattern. The vehicle actuation's sum during non-green time for each phase shall be accumulated per sequence cycle and averaged over pattern duration.

Delay shall represent the average time, in seconds, that vehicles are stopped during the sequence cycle over the duration of the pattern. The waiting time shall be accumulated for each phase and averaged over pattern duration.

Utilization shall represent the average seconds of Green time used by each phase during the sequence cycle for the duration of the pattern.

A MOE Report shall be provided to report the above history. This report shall have the capacity to store up to twenty-four patterns of MOE's. The pattern of MOEs once logged shall remain until the report capacity is exceeded at which time the oldest pattern of MOEs shall be deleted and the new one shall be added.

This report shall be capable of being viewed on the display, printable via the RS232C port, and transmitted to a personal computer.

12.3 Speed Traps

The controller unit shall provide speed-monitoring capability in the form of a Speed Trap function. The controller unit shall provide for up to two independent Speed Traps with selectable detector spacing of either eleven or twenty-two feet, dependent upon the application. Provision shall be made to monitor the speed in MPH or KPH. A nominal speed range shall be settable for each pattern, with the percent of vehicles higher, within and lower than this nominal speed ranged logged for reporting.

A Speed Report shall be provided and shall have the capacity to store up to twelve patterns of Speed data. The pattern Speed data shall remain until the report capacity is exceeded at which time the oldest pattern of Speed data shall be deleted and the new one shall be added.

This report shall be capable of being viewed on the display, printable via the RS232C port, and transmitted to a personal computer.

12.4 Communications Report

The controller unit shall provide a Communications Report allowing the user to view a list of communications faults along with date and time of occurrence. This report shall have a minimum capacity of twenty events. The event, including date and time of occurrence, shall remain until the report capacity is exceeded at which time the oldest event shall be deleted and the new event added.

This report shall be capable of being viewed on the display, printable via the RS232C port, and transmitted to a personal computer.

In regard to communications, indication shall be provided on the display to denote when a carrier signal is being received, valid data is being received and when the unit is transmitting.

13. QUALITY PROVISIONS

The local controller unit shall successfully meet the NEMA requirements, as applicable. The controller unit shall have been tested and certified by an independent test laboratory. An 'independent test laboratory' shall be defined as one that has no relationship to the controller manufacturer, except as a supplier of services.

All equipment furnished under this specification shall be new, of the latest model and fabricated in a first-class workmanship manner from good quality material.

14. WARRANTY

The controller unit shall be warranted to be free from defects in workmanship and material for three years from the date of shipment by the manufacturer. Any part(s) found to be defective shall, upon concurrence of the defect by the manufacturer, be replaced or repaired free of charge. Any and all revisions or updates to the controller or its software shall also be covered under this warranty.

15. TRAINING

Three two-day training courses shall be provided upon request by the City of Carrollton. One training course shall be held at the manufactures facilities at no expense to the City of Carrollton accommodating up to four people. The other two training courses shall be held at the City of Carrollton Signal Shop.

16. SPECIFICATION COMPLIANCE

At the time of bid the Owner shall be furnished with a certificate from the equipment manufacturer stating that the equipment to be furnished under this specification complies with all provisions of this specification. Submittal of appropriate supporting documentation, manufacturer's literature, manuals, etc. is encouraged.

If there are any items, which do not strictly comply with these specifications, then a list of those exceptions must be detailed on the certification and on the equipment submittals for the project. Without a list of exceptions on either the equipment submittals or the certification, the bidder shall be deemed to be in compliance with all issued specifications. Should deviations from the specification be determined from either the review of the equipment submittals or the equipment installation, the manufacturer shall be provided 30 days to correct the deviations(s) before rejection of the project and removal of the equipment.

17. SPECIAL REQUIREMENTS

The bidder shall state in the Bid and at the time of equipment submittals if the manufacturer is under legal obligations incurred by bankruptcy proceedings. Companies under special legal obligations caused by court actions under bankruptcy proceedings shall not be summarily rejected; however, the Owner shall have the right to insure the actual status of the manufacturer as a "lowest responsible bidder" on a case-by-case basis. The Owner reserves the right to require additional warranties in the form of performance bonds should the manufacturer under such bankruptcy proceedings not be able to provide the necessary assurances that the project completion can be achieved within the time requirements of the Project. Any additional costs for providing performance bonds by such manufacturer shall be considered incidental to the cost of the equipment to be provided. Failure of the bidder to provide notification of a manufacturer being under bankruptcy legal requirements shall be cause to reject the bid of the bidder or remove the bidder from the Project without compensation.

LOT #2

ITEM #1

Traffic Signal Cabinets

LOT #2A

ITEM #1

Additional Spread Spectrum Radios

LOT #2B

ITEM #1

Additional Conflict Monitors

LOT #2

CABINET SPECIFICATION

DESCRIPTION:

The purpose of this specification is to describe the minimum acceptable design for signal controller cabinets. Attached is a copy of the cabinet wiring diagram the City is presently using, it shall be used as a guideline for building cabinet to these specifications.

CABINET:

- 1.1 Unless otherwise called for in the invitation to Bid, the cabinet shall be base mounted with the following external dimensions (plus or minus 2 inches):
 - Width - 44 inches
 - Height - 54 inches
 - Depth - 26 inchesFour 3/4" (minimum) by 8" galvanized anchor bolts with nuts and washers and a mounting template shall be provided for each cabinet.
- 1.2 The cabinet shall be constructed using unpainted sheet aluminum with a minimum thickness of 0.125 inch.
- 1.3 Vertical shelf support channels shall be provided to mount a minimum of two shelves. Each cabinet shall be equipped with an extra set of unistrut channels on either side of the front section of the cabinet to permit the purchaser to mount additional equipment as necessary.
- 1.4 The back panel shall be **hinged at the bottom** and shall fold down and out from the top for maintenance with all components (load switches, relays, etc.) in place. It shall be possible to gain full access to the back of the back panel in less than two minutes using simple tools from the front side only.
- 1.5 The Front and Rear door and hinges shall be braced to withstand a 50-pound per vertical foot of door height load applied vertically to the outer edge of the door when standing open. There shall be no permanent deformation or impairment of any part of the door or cabinet body when the load is removed. Provisions shall be designed to hold the door open at approximately the 90-degree positions. **A water tight slide out drawer a minimum of 10" D x 14" W x 1" T shall be mounted on the underside of the top most shelf. The drawer shall have a hinged lid which when closed serves as a writing surface as well as an enclosed storage compartment. It shall be possible to open the lid 90 degrees when the drawer is in the outer most position. The drawer shall be mounted with steel, industrial grade, roller bearing drawer rails capable of supporting up to 50 pounds.**
- 1.6 The cabinet shall be vented and cooled by **two thermostatically controlled all aluminum constructed fans (Papst 4600X or City of Carrollton, Traffic Op. Supervisor approved equivalent)**. The thermostat shall be an adjustable type with an adjustment range of 70 degrees to 110 degrees F.
- 1.7 The fans shall be commercially available with a capacity of at least 100-cfm each. The intake for the front door vent system shall be filtered with a 16 inch (wide) by 25 inch tall by 1-inch (thick) air conditioning filter, and the filter shall be securely mounted so that any air entering the cabinet must pass through the filter. The cabinet opening for intake of air shall be large enough to use the entire filter. The exhaust vent shall be screened to prevent entry of insects. The screen shall have openings no larger than .0125 sq. in. The total free air opening of the vent shall be large enough to prevent excessive back pressure on the fan.
- 1.8 A switch shall be provided for each vehicle and pedestrian phase. Each switch shall have three positions, on/off/momentary-on. In the on position, the detector output shall be connected to the appropriate input

to the controller. In the off position, the detector output shall be disconnected for the input to the controller. The momentary-on position shall allow the user to manually place a call to the controller. **Pedestrian isolation cards shall be designed with the transformer mounted on the board. The transformer shall be tab secured to the card in order to reduce stress on the transformer pins. Input and output LED's shall be provided for each of the 4 channels.**

- 1.9 A second hinged door, mounted in the main door, shall give access to designated switches on a police panel. This door shall be provided with a conventional police lock and key. The designated switches are as follows:

*Signal Switch - On or Off

*Flash Switch - Auto or Flash

The interval advance button is to be mounted on the inside of the front door. Access to the button can be made only if front door is open.

***Auto/Manual Switch - Manual Cord is to be mounted to the door inside the cabinet.**

- 1.10 Each cabinet assembly will be equipped with surface mounted emergency power transfer switch. Each switch will be rated for 30amps AC+. Switch will be equipped with a confirmation light that indicates when utility power has been restored. Each switch will need to be able to manually switch between generator power or utility power without having to access the interior of the signal cabinet or the utility power disconnect. The panel will need to be lockable via pad lock or standard Signal cabinet key. A male plug end will be mounted to the housing of the switch for extension cord access from the generator.

2.0 WIRING, BACK PANEL AND AUXILIARY EQUIPMENT

- 2.1 All wiring within the cabinet shall be firmly attached to the cabinet, neatly wrapped and routed such that opening and closing the door or raising or lowering the back panel will not twist or crimp the wiring. The bottom edge of the back panel shall be at least six inches above the base of the cabinet. **No PC board back panels shall be used for the detector panel, main back panel, and the power panel. The bottom portion of the back panel that has the field output lugs attached to it, needs to be curved forward at 45 degrees.**
- 2.2 All conductors between the main power circuit breakers and the signal power bus shall be a minimum size 10 AWG stranded copper. All conductors carrying individual signal lamp current shall be a minimum size 16 AWG stranded copper. All AC service lines shall be of sufficient size to carry the maximum current of the circuit or circuits they are provided for. Minimum cabinet conductor wire size shall be 22 AWG stranded copper.
- 2.3 Conductors for AC common shall be white. Conductors for equipment grounding shall be solid green. All other conductors shall be a color different than the foregoing.
- 2.4 A barrier terminal block with a minimum of two terminals and one compression fitting designed to accept up to a #4 AWG stranded wire shall be provided for the power supply lines. The block shall be rated at 50 amperes and shall have double 10-32 x 5/16" binder head screw terminals or larger.

2.5 All terminals shall be permanently identified in accordance with the cabinet-wiring diagram. Where through-panel solder lugs or other suitable connectors are used, both sides of the panel shall have the terminals properly identified. Identification shall be permanently attached and as close to the terminal strip as possible and shall not be affixed to any part, which is easily removable from the terminal block panel.

2.6 Terminal blocks for all inputs and outputs for the full capabilities of the controller shall be included in this requirement. These blocks shall be either single terminal type with through-panel solder lugs or other acceptable means of connection on the rear side of the mounting panel or double binder head screw terminals. Either type of terminal block used shall be of correct amp rating for the application as a minimum, the following functions shall be provided:

1. INPUTS AND NUMBER OF TERMINALS

	<u>FUNCTIONS</u>	<u>NO. OF TERMINALS</u>
1.	Vehicle call detector (per phase)	8
2.	Ped call detector (per phase)	8
3.	AC+ (line side)	1
4.	AC- (common)	1
5.	Chassis ground	1
6.	Logic ground	1
7.	Force-off (per ring)	2
8.	Hold (per phase)	8
9.	Phase omit (per phase)	8
10.	Stop timing (per ring)	2
11.	Interval advance (per unit)	1
12.	Red rest (per ring)	2
13.	Inhibit max. termination (per ring)	2
14.	Call to non-actuated mode (two per unit)	2
15.	Omit red clearance (per ring)	2
16.	Test input (two per unit)	2
	TOTAL NUMBER	51

2. OUTPUTS AND NUMBER OF THE TERMINALS

<u>FUNCTIONS</u>	<u>NO. OF TERMINALS</u>
1. Load switch drivers, basic vehicle (G-Y-R, per phase)	24
2. Load switch driver, pedestrian (W-PC-DW, per phase)	24
3. Load switch drivers, overlap (G-Y-R-, per overlap)	12
4. Check (per phase)	8
5. Phase ON logic (per phase)	8
6. Phase NEXT logic (per phase)	8
7. Regulated 24 volts DC for external use	1
TOTAL NUMBER OF OUTPUTS	85

- 2.7 Molded barriers shall separate each set of terminals. Where single terminals with through-panel solder lugs or suitable connectors are provided, provision shall be made to isolate or insulate the solder or other type connection to insure safe operation. Each set of terminals shall be connected by means of a shorter bar or plate which may be removable or non-removable where barrier type terminal blocks are provided.
- 2.8 2 copper bus bar or other suitable terminal arrangement shall be provided to connect the common field wires with the power supply neutral and cabinet ground. **Each** bus bar shall provide a minimum of 10 each 8-32 x 5/16" or larger screws for connection and **with up to a # 4 AWG wire**.
- 2.9 Two circuit breakers shall be mounted and wired into the cabinet. A 20-ampere breaker shall protect the fan, trouble light and duplex receptacle. A 30-ampere breaker shall protect the controller unit, conflict monitor, flasher and solid-state load switches.
- 2.10 The circuit breakers shall be single pole non-adjustable magnetic-trip type rated at 120 volts. The line side of these breakers shall be equipped with solderless connectors and shall be wired to the terminal block specified in paragraph 11.4.
- 2.11 The circuit breakers shall be marked to indicate their current rating and whether they are open or closed. They shall be manually operable and shall be mounted in a readily accessible position.
- 2.12 2 duplex receptacles of the 3 wire grounding type shall be mounted in a readily accessible position. It shall be wired to the load side of the 20-ampere circuit breaker.
- 2.13 A ACP-340 surge protector shall be installed on the load side of the 30-amp circuit breaker to protect the controller and related equipment from line voltage surges. No substitutions. **Filtered AC neutral and AC+ from the ACP-340 shall be used for the pedestrian isolation board as well as all other control equipment in the cabinet.**
- 2.14 The controller cabinet shall be provided with 2 cabinet lights and switch. One to illuminate the tops two shelves and one to illuminate the control panel(motherboard). This cabinet light shall be white LED and shall provide a light output comparable to that of a 40-watt incandescent lamp. It shall be wired to the load side of the 20-ampere circuit breaker.
- 2.15 A test switch shall be provided inside the cabinet. This switch shall cause the intersection to flash and also cause the detectors and controller unit to operate normally so that their operation can be checked by observing the display panel. A controller power, stop time and auto-manual switch shall also be provided inside the cabinet. (A 6' coil cord and switch for manual operation shall be provided inside the cabinet.)

- 2.16 A radio interference filter shall be wired to the load side of the 30-ampere breaker and shall be protected by the surge protector. This filter shall be rated for 50 amperes and shall provide a minimum attenuation of 50 decibels over the frequency range of 200 kilocycles to 75 megacycles.
- 2.17 Except where soldered, all wires shall be provided with lugs or other approved terminal fittings for attachment to binding posts. Insulation parts and wire insulation shall be of suitable material and insulated for a minimum of 600 volts.
- 2.18 The flasher and load switches shall meet the current NEMA standards TS-1 1983 and shall be the cube type.
- 2.19 All field wire terminals (signal lights, loop wires and pedestrian push buttons) shall use a #10 binder head screw on 9/16" centers. An ILSCO model XT-6 copper lug shall be installed on each of the field wire terminal screws with capacity for three #14 AWG wires.
- 2.20. The cabinet shall be wired so that activation of the conflict monitor will cause the controller unit, and any auxiliary equipment, to stop timing.
- 2.21 The load switches shall be a cube type supported by a bracket(s) designed to accept all NEMA type load switches and will support the switch and prevent vibration from dislodging it from the socket in the back panel. Adjustable to fit all different types of NEMA type load switches extendible to front of switches.
- 2.22 The back panel shall be provided with sixteen (16) load switches (eight vehicle, four overlaps and four pedestrian). Six flash relays shall be provided and have contacts rated at 30 amps and shall be Midland Ross 136-62T3A1.
- 2.23 **The interior walls of the signal cabinet shall be powder coated white to help with overall visibility while working in the cabinet.**
- 2.24 The cabinet assembly shall be furnished with a card rack mounted securely to the bottom shelf on the left side and wired to accommodate four (4) channel digital loop detectors, a four (4) channel power supply and two (2) 3M Model 752 discriminator modules for fire phase selection operation. The card rack shall **be hinged on the left side to** swing the unit out and provide access to the rear of the unit. Two of the detectors shall be wired direct to the eight vehicle detector inputs of the controller. Card one shall be assigned to Phases 1,6,3,8 Card two shall be assigned to Phases 5,2,7,4 in that order. The inputs and outputs of the third and fourth detector shall be wired to a separate terminal strip using #10 binder head screws on 9/16" centers. All detector channels shall have a separate twisted pair in a shielded cable wire from card rack to the field terminal for each individual loop. The detector units, power supply and discriminator modules will be supplied by the City of Carrollton.
- 2.25 All used or functional **NEMA** controller unit and conflict monitor **inputs and outputs**, shall be made available on 6-32 x 1/4" binder head screw terminals on the back panel.
- 2.26 The controller unit harnesses (A, B, C, D,) shall be neatly bound and long enough to reach a controller that is located anywhere on the top shelf of the cabinet.
- 2.27 See attached drawing for D Connector.

2.28 CONFLICT MONITOR/: (One per cabinet)

2.29 The conflict monitor shall be LCD type 16 channel Smart Monitor II with Ethernet Communication port capable of utilizing the Flashing Yellow Arrow function and shall communicate with EPAC controllers and include patch cords to establish communication. Monitor must be upward and downward compatible for TS1 12 channel and TS2 cabinets.

2.30 The successful bidder shall provide the following documentation:

A. Two complete and accurate cabinet wiring diagrams per Cabinet **to include up to date detector rack wiring. Inaccurate schematics/drawings will result in payment delays and/or not except cabinet delivery.**

B. Total of six complete and accurate schematic diagrams for all circuitry in the conflict monitor, flasher and any other electronic components.

3.0 ACCEPTANCE AND REJECTION:

3.1 The City of Carrollton reserves the right to accept or reject offer and to increase or decrease quantities. The manufacturer shall provide a certified letter from an independent laboratory stating that the controller unit has been successfully tested in exact accordance with Part 2, Environmental Standards and Test Procedures of NEMA Standards Publication No. TS1-1986.

3.2 Pricing will be considered firm unless otherwise stated.

3.3 Delivery shall be 45 calendar days from the receipt of the purchase order.

3.4 Terms shall be stated.

3.5 Authorized representatives of company making bid shall sign bids.

4.0 WARRANTY AND SPECIAL REQUIREMENTS

4.1 Each manufacturer shall include in his proposal all warrants and/or guarantees with respect to materials, parts, workmanship, and performance of his product. A minimum two-year warranty from the date of receipt of equipment shall be required. Each manufacturer shall have a representative available for checking out each controller, cabinet, and auxiliary equipment and for acquainting city personnel with the operation of same. This shall be performed at the City of Carrollton signal shop, 1420 Hutton Drive.

4.2 **No units shall be shipped until a random, on-site inspection is made of the production units by the Signal Supervisor and Signal Technician Crew leader. The manufacture shall notify the Signal Supervisor when the units are ready for inspection. Manufactures more than 150 miles from the city of Carrollton Texas shall deliver the Cabinet to 1420 Hutton Carrollton, Texas for inspection by Traffic Operations Supervisor or appointed staff..** The City of Carrollton shall pay for cabinets upon successfully passing operational testing in the city traffic signal shop. Testing shall be random and will be completed immediately upon receipt of the controllers and wired cabinets by city personnel.

4.3 The bid price quoted shall be F.O.B. Carrollton, Texas and shall be exclusive of Federal and State taxes.

4.4 Bidding will close as specified on the request for bid letter on the front of this document. All bids should be in a sealed envelope with the item bid and bid opening date marked clearly on the face of the envelope.

4.5 The City reserves the right to consider each bid item as a separate bid. Bids that omit any item will still be considered.

4.6 The successful bidder shall bear all expenses connected with the return and temporary replacement of any equipment, which the purchaser deems necessary to return to the factory for proper adjustment or repairs during the warranty period.

Lot 2A
Broadband Radio & Antenna
Item #1

- 1.1 Radio Transceiver shall be Radwin RW-5650-0P58 that supports 4.9-5.8GHz that complies with FCC/ICC regulations. Must be able to handle 50Mbps net aggregated throughput, upgradeable to 200Mbps. Long range up to 25 miles. Also must have an IP-66 rating.
- 1.2 Each radio is to include an RW-9614-5359 TurboGain antenna. Frequency range of 4.9 – 6.0 GHz.

Lot 2B
Additional Conflict Monitors
Item #1

- 1.1 EDI Smart Monitor II MMU-16LE with Ethernet communications port or equivalent. Monitor must be upward and downward compatible to work with TS-1 or TS-2 cabinets.
- 1.2 Monitor must be able to function with Flashing Yellow Arrow configuration.
- 1.3 Device must be able to monitor both 12 or 16 channels.
- 1.4 Must meet all NEMA requirements.

LOT #3

ITEM I

**3 Section 12" Polycarbonate Traffic Signal w/back plate and
Pelco AB-0125-3-84 mounting brackets**

ITEM II

**4 Section 12" Polycarbonate Traffic Signal w/back plate and
AB-0125-5-84**

**5 Section 12" Polycarbonate Traffic Signal w/back plate and
Pelco AB-0125-5-84**

ITEM III

**Pedestrian Signals w/Z-crate visor and clamshell with
Universal mounting hardware**

ITEM IV

Pedestrian Push button assembly

LOT #3

TRAFFIC AND TRANSPORTATION

TRAFFIC SIGNALS/PEDESTRIAN SIGNALS SPECIFICATIONS

All traffic signals shall be 12-inch black polycarbonate and shall meet or exceed I.T.E. (Institute of Traffic Engineers Specifications.)

All pedestrian signals shall be a single piece cast aluminum housing and shall meet or exceed I. T. E. specifications.

Compliance with or variation from the specifications must be noted as to each item on the specification sheet. All variations from the specifications must be noted on the bid form.

1. Twelve (12) inch polycarbonate traffic signal with mounting brackets and back plates. **All signals shall be assembled (except for mounting hardware and back plates) including lenses and tunnel visors.** All signals shall be configured for horizontal display. All traffic signal heads on this order shall have the following LED fixtures installed prior to delivery: One Red, Yellow, Green, Left Yellow Arrow, and Left Green Arrow for 5 section heads and One Red, Yellow, Green for three section heads, and two Red, one yellow, and one green LED for the 4 section head. All LED fixtures shall meet TXDOT approved specifications **for wide angle LED's. All LED's must have the incandescent look. No pixilation will be accepted.**
 - A. Twelve (12) inch three section polycarbonate traffic signals black in color, with tunnel visor eagle signal part number SA103A1111BBB or equal. Three section signals shall have 1ea. 12 lug terminal block located in the center section and shall be screwed in place. Glued, melted or stamped in terminal blocks will not be accepted. Electrical connections shall be screwed down using forked spade terminals crimped on the wires, push on spade terminals will not be accepted. **Each head shall be provided with 12" RED, YELLOW, and GREEN LED fixtures which meet or exceed TXDOT approved specifications configured for horizontal wide angle installation.**
 - B. Twelve (12) inch five (5) section polycarbonate traffic signal black in color, with tunnel visor eagle signal part number SA105A1111BBB or equal. Five section signals shall have 2ea. 12 lug terminal blocks located in the center section and shall be screwed in place. Glued, melted or stamped in terminal blocks will not be accepted. Electrical connections shall be screwed down using forked spade terminals crimped on the wires, push on spade terminals will not be accepted. **Each head shall be provided with 12" RED, YELLOW, GREEN, GREEN ARROW and YELLOW ARROW LED fixtures which meet or exceed TXDOT approved specifications configured for horizontal wide angle installation.**
 - C. Twelve (12) inch four (4) section polycarbonate traffic signal black in color, with tunnel visor eagle signal part number SA105A1111BBB or equal. Four section signals shall have 2ea. 12 lug terminal blocks located in the center section and shall be screwed in place. Glued, melted or stamped in terminal blocks will not be accepted. Electrical connections shall be screwed down using forked spade terminals crimped on the wires, push on spade terminals will not be accepted. **Each head shall be provided with either 12" RED ARROW, RED ARROW, YELLOW ARROW and GREEN ARROW LED or RED ARROW, YELLOW ARROW, YELLOW ARROW, AND GREEN ARROW fixtures which meet or exceed TXDOT approved specifications configured for horizontal wide angle installation.**
 - D. Five (5) inch **Anodized Aluminum or Pelco Vacuum formed back plate part# BK-1003-X AND BK-1005-X**, for 3, 4, and 5 section heads respectively. The units shall be a one-piece back plate black in color, an equal number of back plates as traffic signal heads on this order shall be provided.
 - E. Mounting bracket shall be Pelco AB-0125-3-84 or AB-0125-5-84. There shall be an equal amount of brackets to match and fit the traffic signals on this order.

2. LED Countdown Pedestrian Signal "Hand-Walking Person Message Lens and countdown timers with **IDC** clamshell **universal** mounting brackets. **Both hand and walk indications shall be LED Dialight part number 430-6472-001 or equal.** LED fixture shall be installed prior to delivery. **Each head shall be designed to be mounted from either left or right side without modifications. All heads, mounts, and Z-Crate Visor shall be interchangeable with IDC Model #7090 heads.**
 - A. Pedestrian signal shall be a Indicator Controls Corps. Model #7090 13 Gloss Black, or equal.
 - B. Each Pedestrian Signal shall come with the Z-Crate Visor. Indicator Controls Corps. Model #4102 or equal.
 - C. Mounting bracket shall be an Indicator Controls Corps. Part Number 4805 Gloss Black, or equal, one bracket per pedestrian signal. Mounting Bracket shall be **UNIVERSAL**, right or left.
 - D. Push button assembly, one per Pedestrian Signal, Pelco part # SE-2023 Gloss Black with Piezo-driven Solid state switch Pelco Part # SE-2121 or equal and adapter to fit with Pedestrian Button assembly.
 - E. Piezio-driven solid state switch Pelco Part # SE-2121 or equal black in color with two mounting holes to include any adapter needed to mount on Pelco Push button assembly Part # 2023 gloss black

LOT #4

ITEM #II **POWER SUPPLY**

ITEM #III **VIDEO DETECTION SYSTEM**

11. TURN-ON ASSISTANCE

12. CARD RACK 24VDC POWER SUPPLY

12.1 Power supply to use and operate card rack detectors shall have 4-24 VDC outputs with a minimum $\frac{3}{4}$ **amp capacity** per 24 volt output so as to operate 4 different 4 channel card detectors. It shall also be of a card rack type.

12.2 WARRANTY

Power Supplies supplied against this specification shall be warranted by the manufacturer to be free of defects in materials and workmanship for a period of two (2) years. Shipping costs for return of goods under warranty shall not be borne by the customer. Return of repaired units shall be borne by the manufacturer.

13. VIDEO DETECTION SYSTEM

Video detector systems provided shall include but not be limited to 4 cameras, 1 power supply, interface modules, video imaging detection system, setup equipment, and 4 camera mounts with 5 foot extension tubes and brackets with pan and tilt for the camera being supplied. All other equipment necessary for adjusting and calibrating cameras to provide a fully functional installation shall be provided at no additional cost including any custom devices necessary to make the system functional.

- 31.1 Video detection systems shall meet or exceed I.T.E. (Institute of Traffic Engineers *Specifications.*) and have been tested and approved by TXDOT.
- 31.2 The video detection system shall be set up without the use of PC's or Laptop computers. Setup shall be accomplished with the use of a mouse and video monitoring device only. No special equipment shall be needed.
- 31.3 Detection shall be input to the controller with the use of a processor module which plugs into the existing detector rack card slots. Each module shall have 2 video inputs.
- 31.4 All video processor inputs shall have built in isolation protection and amplification circuitry eliminating the need for external equipment to protect against transients or coax cable losses.
- 31.5 250 ft. of Coaxial and Power cable shall be included with each camera being provided.
- 31.6 Color Cameras shall be a variable focal length type with digital signal processing. Each camera shall have an adjustable lens sun shield if needed to overcome sun/light glare
- 31.7 Provider shall be required to include a minimum of 16 hours of training within 30 days of delivery. Arrangements shall be made with the Traffic Operations Supervisor on the exact day to schedule the training session. Training shall be held at the City of Carrollton, Traffic Shop located at 1420 Hutton Dr. Carrollton, TX. 75006. A minimum of 10 Operations Manuals and 10 Technical Data manuals shall be provided as part of this course.**
- 31.8 Video system provided shall be warranted for 1 year from date of installation. Provider shall provide replacement units/components in the event of a failure during the first 12 months of installation. Replacement units/components shall be delivered within 10 working days of notification.
- 31.9 Provider will also responsible for providing individual costs for all items included in a complete product. We will need a break out of cost for the cameras, processing cards, viewing monitors. Costs should not exceed the total cost of a complete product.

Video processing cards will need to be a Dual Camera Input type card. To be installed in a _____ card rack for a NEMA Type TS-1 cabinet.

LOT #5

ITEM I

Opticom Discriminator Module

ITEM II

Opticom Optical Detector

LOT #5**OPTICOM DISCRIMINATOR MODULE****MODULATED SIGNAL LIGHT DETECTION SYSTEM**

This specification includes supplying all necessary system operational criteria and system components to provide an emergency vehicle traffic signal priority control system. The system shall be a Modulated Signal Light System. Only the GTT "Opticom" Model 764 Multimode Phase Selector and Model 722 Infrared detectors Traffic Signal System will be accepted or approved equal per the specifications.

This specification does not include installation, wiring or interconnection between components of the system and/or the traffic controller equipment. Installation shall be the responsibility of the purchasing agency.

Compliance with or variation from the specifications must be noted as to each item on the specification sheet. All variations from the specifications must be noted on the bid form.

Check indicates minimum compliance: √

SYSTEM OPERATIONAL CRITERIA:

1. The system shall, in response to an optically transmitted predetermined signal of 14.035 Hz or upon the actuation of a test switch, cause the traffic signal controller to select and either hold a preselected green indication or advance to and hold that green indication.
2. The system shall not be interposed between the Traffic Signal Control Unit and the traffic signal light displays.
3. The system shall cause the traffic signal control unit to select one of its available green phase sequences by activation of one MLSDS module's outputs.
4. The equipment manufacturer shall not modify the existing traffic control equipment to alter its capabilities beyond adding the remote control feature.
5. The system shall not compromise the existing failsafe provision of the controller.
6. The system shall cause the controller to advance to and/or hold the desired traffic signal display even if the optical energy signals cease before the desired display is obtained.
7. The system shall be designed so that it can only act upon a priority demand for a single traffic phase or non-conflicting phase pair at any one time.
8. The system shall properly identify a priority demand with any combination of three or more (up to 10) Priority Emitters being received independently or simultaneously and asynchronously on either input channel.
9. Optical Detector
 - A. Shall be solid state construction
 - B. Shall have internal circuitry encapsulated in a semi-flexible compound to insure moisture resistance.
 - C. Shall be capable of receiving optical energy signals from either one or both of two axially opposed directions.
 - D. Shall contain internal circuitry to prevent electrical outputs due to steady state ambient light.
 - E. Detector shall be repairable by means of replacing the circuit board and photocells.
 - F. Detector shall be of "turret" design to facilitate installation at skewed intersections or other similar applications.

- G. Detector shall be constructed of lightweight, durable plastic construction.
- H. Detector shall be capable of being disassembled and reassembled for the purposes of repair and/or replacement.
- I. Provide pricing for the GPS antenna model number 1050 with all mounting hardware to be included in pricing.
- J. In addition to the above equipment, items needed to complete an installation for GPS System Intersection shall be included in the pricing to include Opticom Model 3100 GPS Radio unit, Radio wire, and mounting hardware.

10. Phase Selection Equipment

A. MLSDS Discriminator Module

1. The Phase Selector (Mdl 764 Multimodal) shall provide an output signal per existing product specification. An optically isolated output is provided for inter-facing with the intersection controller. The software program, which causes the controller to perform phase selection, functions (i.e. timing, sequences, displays, etc.) upon reception of a signal from the optically isolated output shall be provided by the using agency. The bidder is not responsible for the content of software program nor the operation resulting from the program.
2. Where two or more MLSD Modules are used the controller manufacturer or supplier shall provide additional logic to lockout or inhibit one module while another is active (only if necessary).
3. Each discriminator module when used when its associated detectors shall be capable of:
 - a. Receiving Class 1 signals at a range of up to 1000 ft. and Class II signals at a range of up to 2000 ft.
 - b. Decoding signals on the basis of frequency: 9.639 Hz +/- .119 Hz for Class 1 and 14.035 Hz +/- .225 Hz for Class II Signals.
 - c. Establishing the validity of received signals on the basis of frequency and time received. A signal shall be considered valid only when received for more than 0.50 seconds. No combination of Class I signals shall be recognized as a Class II signal regardless of the number of signals being received, up to a maximum of ten signals. Once a valid signal has been recognized its effect shall be held by the module in the event of temporary loss of signal for a period adjustable from 5 to 10 seconds.
 - d. Providing an output for each channel that will result in a "low" or grounded condition of the appropriate input of the controller unit. For Class I signal the output shall be a 6.25 Hz, rectangular waveform with a 50% duty cycle. For Class II signals the output shall be steady.
4. Each discriminator module shall receive electric power from the controller cabinet at either 24 volts DC or 120 volts AC.
5. Each channel together with its associated detectors shall draw not more than 1000 milliamperes at 24 volts DC nor more than 100 milliamperes at 120 volts AC. Electric power, one detector input for each channel and one output for each channel shall terminate at the printed circuit board edge connector pins listed below.

6. Board edge connector pin assignment shall be as follows:
 - A NC
 - B NC
 - C NC
 - D Detector Input, Channel A
 - E +24 VDC to detectors
 - F Channel A Output (C)
 - H Channel A Output (E)
 - J Detector Input, Channel B
 - K DC Ground to Detectors
 - L Chassis Ground
 - M AC-
 - N AC+
 - P NC
 - R NC
 - S NC
 - T NC
 - V NC
 - W Channel B Output (C)
 - X Channel B Output (E)
 - Y NC
 - Z NC
 - Slotted for Keying
 - (C) Collector
 - (E) Emitter
 - (NC) Not connected; cannot be used by manufacturer for any purpose.
7. Two auxiliary detector inputs for each channel shall enter each module through the front panel connector. Pin assignment for the connector shall be as follows:
 - a. Auxiliary Detector 1 Input, Ch. A
 - b. Auxiliary Detector 2 Input, Ch. A
 - c. Auxiliary Detector 1 Input, Ch. B
 - d. Auxiliary Detector 2 Input, Ch. B
8. Each channel output shall be an optically isolated NPN open collector transistor capable of sinking 50 milliamperes at 30 volts and shall be compatible with the controller unit inputs.
9. Each discriminator module shall have a single connector board.
10. The front panel of each module shall have a handle to facilitate withdrawal and the following controls and indicators for each channel:
11. In addition, the front panel shall be provided with a single circular, bayonet-captured, multi-pin connector for two auxiliary detectors inputs for each channel. Connector shall be mechanical configuration equivalent to a MIL-C-26482 with 10-4 insert arrangement, such as Burndy Metalock Bantam series.

12. Pricing will also be required for the vehicle equipment necessary to function with the Opticom GPS system.

11. GENERAL

Manufacturer shall replace or repair without charge, any component parts that prove to be defective within two years after installation or in no case more than two years after date of purchase. Manufacturer shall certify upon request that all materials furnished will conform to this specification.

12. A copy of "system" warranty and any on-going repair agreements shall be required.

13. A Pelco AB-121 Astro Min-Brac with a 3/4" threaded opening shall be included with each detector bracket, which will be used to mount the detector on top of mast arm signal poles.

LOT #6

ITEM I

3 CONDUCTOR CABLE

7 CONDUCTOR CABLE

20 CONDUCTOR CABLE

ITEM II

OPTICOM CABLE

ITEM I

1. SCOPE

This specification covers polyethylene insulated, polyethylene jacketed cables rated 600 volts, for use in underground conduit or as aerial cable supported by a messenger, or for installation in raceway in buildings, not including trays, either as fire protective signaling cable or as traffic signal cable.

2. GENERAL CONSTRUCTION

Cable under this specification shall be composed of copper conductors individually insulated with heat stabilized polyethylene. The insulated conductors shall be laid up in compact cable form and bound with suitable tape. The cable core shall be enclosed in a polyethylene compound jacket.

3. CONDUCTORS

- 3.1 The conductors shall be copper and shall before insulating, conform to the requirements of ASTM Designation B-3, latest revision.
- 3.2 The conductors shall be stranded-14AWG unless otherwise specified by purchaser.
- 3.3 When stranded conductors are required they may be either concentric or bunch stranding and shall conform to the circular mil area and physical requirements specified in ASTM Designation B-8, latest revision for concentric stranding or ASTM B-174, latest revision, for bunch stranding.
- 3.4 The purchaser shall specify the number and size of the conductors.

4. INSULATION

- 4.1 The insulating compounds shall be polyethylene.
- 4.2 The insulation shall be applied concentrically about the conductor. The thickness of the insulation shall be not less than that specified in table 4.2. The method of measurement and the apparatus used shall be in accordance with Underwriters Laboratories, Inc. Standard UL 62 (ANSI C33.1).

TABLE 4.2

INSULATION THICKNESS

Conductor Size, AWG	Minimum Acceptable	Minimum Acceptable
	Average Thickness	Thickness at any point
20-14	25 mils	22 mils
13-8	30 mils	27 mils

- 4.3 The insulation after application to the conductors shall comply with the requirements specified for Class 30 Thermoplastic Polyethylene compound in Underwriters Laboratories Inc. Standard UL 62 (ANSI C33.1), except that the temperature for the cold bend test shall be minus 55.0 ± 2.0 C (Minus 67.0 ± 3.6" F).
- 4.4 The insulation of the finished conductors before cabling shall withstand without breakdown the application of a 60 or 3000 Hertz, 7500 volt essentially sinusoidal spark test potential (RMS) in accordance with the method and using equipment specified in Underwriters Laboratory Inc. Standard UL 83 (ANSIC33.8).

5. CONDUCTOR COLOR CODING

5.1 Standard color coding for cables shall be in accordance with Table 5.1. When permitted by the purchaser, the conductor insulation. Base colors shall be obtained by the use of colored insulation. Tracers shall be colored stripes or bands, which are part of, or firmly adhered to, the surface of the insulation in such a manner as to afford distinctive circuit coding throughout the length of each wire. Tracers may be in continuous or broken lines, such as a series of dots or dashes, and shall be applied longitudinally, annularly, spirally or in other distinctive patterns.

TABLE 5.1 CONDUCTOR COLOR AND SEQUENCE FOR CABLES

Conductor No.	Base Color	Tracer Color
1	Black	
2	White	
3	Red	
4	Green	
5	Orange	
6	Blue	
7	White	Black
8	Red	Black
9	Green	Black
10	Orange	Black
11	Blue	Black
12	Black	White
13	Red	White
14	Green	White
15	Blue	White
16	Black	Red
17	White	Red
18	Orange	Red
19	Blue	Red
20	Red	Green
21	Orange	Green

5.2 The color sequence may be repeated as necessary. Color code sequence applies when cable is composed of mixed sizes.

5.3 For combination cables consisting of pairs and single conductors, color code sequence given in Table 5.2, IMSA Specification No. 19-2 shall be used for the pairs, repeated as necessary.

6. CONDUCTOR ASSEMBLY

6.1 Two conductor cable

A. Two conductor cable shall be of the round twisted type with a maximum length of lay not more than 30 times the insulated conductor diameter.

B. Fillers shall be used where necessary to form a round cable.

6.2 Multi-conductor cables having more than two conductors.

A. In multi-conductor cables having more than two conductors, the single conductors shall be laid up symmetrically in layers with lay not exceeding the following: No. of Maximum length of lay Conductors

3	35 times insulated conductor diameter
4	40 times insulated conductor diameter
5 or more	15 times the assembled core diameter

B. The outer layer shall be left hand lay.

C. Fillers shall be used when necessary to secure a uniform assembly of conductors or a firm, compact cylindrical core.

7. FILLERS

Fillers, when used, shall be of a non-metallic, moisture resistant, non wicking material, which shall have no injurious effect upon other component parts of the cable. The filler shall not wick when the cable is tested as follows: One inch of the jacket shall be removed from one end of a one foot length of cable. This end shall be vertically supported in a 2 inch deep dye (Gentian Violet or equivalent) and water solution for 24 hours. The dye shall not have visibility colored the top end of the cable.

8. CABLE TAPE

The conductor assembly shall be covered with a wrapping of a moisture resistant tape applied so as to lap at least 10 percent of its width.

9. JACKET

9.1 A tight fitting polyethylene compound jacket shall be applied over the taped conductor assembly and shall comply with the requirements specified for IMSA Specification No. 20-2.

9.2 The thickness of the jacket shall be as specified in Table 9.3. The method of measurement and apparatus used shall be in accordance with Underwriters Laboratories Inc. Standard UL 62 (ANSI C 33.1).

Table 9.3

JACKET THICKNESS

Calculated Diameter of Cable under jacket Inches	Minimum Acceptable Minimum Acceptable	
	Average Thickness Mils	Thickness at any point Mils
0.0 - 0.425	45	36
0.426 - 0.700	60	48
0.70 - 1.500	80	64
1.501 - 2.500	110	88
2.501 and larger	140	112

10. IDENTIFICATION

Each shipping length of cable shall show the name of the manufacturer, the year of manufacture and the IMSA Specification number. The above information shall be applied every two feet or less to the outer surface of the jacket by indent printing.

11. PACKING AND MARKING FOR SHIPMENT

Reels shall be substantially constructed and in good condition with drum diameters sufficient to prevent damage to the cables shipped on it. The cables shall be suitably protected. Each end of the cable shall be available for testing, properly sealed and protected against injury. Each reel shall be plainly and permanently marked with the manufacturer's full description of the cable giving the type and length of the cable on the reel, the number and size of the conductors in the cable and the voltage rating.

12. SAMPLING, INSPECTION AND ACCEPTANCE

- 12.1
- a. Inspection and tests shall be made prior to shipment and at the place of manufacture.
 - b. The manufacturer shall, when requested by the purchaser at the time of placing the order, furnish the purchaser in suitable form a certified report of the test made on the cable to show compliance with this specification.
 - c. If the purchaser prefers factory inspection by his own inspector, this shall be indicated by the purchaser when placing the order and the manufacturer shall notify the purchaser sufficiently in advance of the completion of the cable to permit arrangement for the purchaser's representative to be present at the inspection.
 - d. The manufacturer shall afford the inspector without charge, all reasonable facilities to satisfy him that the cable is being furnished in accordance with this specification.
 - e. The purchaser, at his option, may make various tests on samples in his own laboratory or elsewhere, but such tests shall be made at the expense of the purchaser.

12.2 TESTS

- a. Tests on Finished Individual Conductors-Each finished conductor shall meet the spark test requirement of paragraph 4.4 as soon as possible prior to cabling. All spark test failures shall be repaired before cabling.
- b. Tests on Finished Cable - The individual conductors of each length of completed cable shall withstand without break down (1) the application for one minute of a 60 Hertz, 2500 volt essentially sinusoidal test potential (RMS) in accordance with the method and using equipment specified in Underwriters Laboratories Inc. Standard UL 83 (ANSI C33.8) or (2) a DC test which shall be a short duration (5 second (minimum) application of a DC Voltage Rating of each cable. Each conductor shall be tested against all other conductors, and shield if present C. Sample Tests - One sample for establishing conformity to this specification shall be taken from each 10,000 feet or fraction thereof, of each type and size of finished cable except that for the physical dimensions and the visual inspection a sample shall be taken from each reel. In case that these samples fail to meet the requirements of this specification, two additional samples shall be selected from new cable lengths and the lot shall be accepted if retests are both satisfactory. However, in case of any failure on the retest, the lot shall be rejected. The manufacturer may re-examine rejected material and submit it for re-inspection at his option.

13. All cable shall come on wooden spools with a minimum 2" hole at each end for cable reel use. The cable shall come in lengths of 2500 ft. per spool.

14. All cable shall be stranded conductor type. 14 AWG

15. GUARANTEE

The manufacturer of cable under this specification shall agree to replacement of any length of cable found to be defective in workmanship or material within two years from the date of delivery to the user.

ITEM II
SPECIFICATION, MODEL 138 DETECTOR CABLE

GENERAL - Cable 3 conductor with shield and ground wire.

1. CONDUCTORS

- 1.1 QUALITY - 3
- 1.2 Gauge - AWG (20 (7 x 28) stranding
- 1.3 Conductor Material - individually tinned copper strands
- 1.4 Insulation - 75- C, 600 volt
- 1.5 Color - 1 conductor yellow; 1 conductor blue; 1 conductor orange

2. SHIELD

- 2.1 Aluminized Mylar shield tape or equivalent

3. DRAIN WIRE

- 3.1 Gauge - AWG #20 (7 x 28) stranding
- 3.2 Individually tinned copper strands
- 3.3 Uninsulated

4. ELECTRICAL CHARACTERISTICS

- 4.1 Drain and conductor DC resistance shall not exceed 11.00 ohms per thousand feet.
- 4.2 Capacitance from 1 conductor to other 2 conductors and shield shall not exceed 48 pf/ft.

5. JACKET

- 5.1 Minimum average wall thickness - .045"
- 5.2 Temperature rating - 80 C
- 5.3 Voltage rating - 600 volts

6. FINISHED O.D. - 0.3" MAXIMUM

7. REELS

- 7.1 All cable shall come on wooden spools with a minimum 2" hole at each end for cable reel use. The cable shall come in lengths of 1,000 ft. per spool.

8. GUARANTEE

- 8.1 The manufacturer of cable under this specification shall agree to replacement of any length of cable found to be defective in workmanship or material within two years from the date of delivery to the user.

LOT #8

ITEM I

PULL BOX SIZE 13 X 24 X 18

ITEM II

PULL BOX SIZE 17 X30 X18

LOT #8

PULL BOXES

DESCRIPTION: The purpose of this specification is to describe the minimum acceptable design for pull boxes. All pull boxes shall meet the minimum design requirements of Carson Products, Inc.

1. POLYMER TYPE (TWO SIZES)

- A. CDR Part # A13-1324-18 or approved equal
- B. CDR Part # A10-1730-18 or approved equal

2. LIDS OR COVERS

All lids shall be a bolt down type and shall be marked with the words "Traffic Signal". Any alternate pull boxes shall be subject to approval by the Traffic Operations Supervisor. All alternate pull boxes shall comply with the dimensions for which the alternate is being submitted.

LOT #9

ITEM I

ORNAMENTAL POLE TOPS AND BASES

LOT #9

ORNAMENTAL POLE TOPS/BASES

PURPOSE: It is the intent of this specification to set forth minimum acceptable standards required for an aluminum ornamental crown to fit on top of lighting or signal poles.

MATERIAL: Ornamental Crown shall be cast from aluminum alloy 319 or equivalent, free of voids, pits, dents, molding sand and excessive foundry grinding marks. All design radii shall be smooth and intact. Exterior surface finish shall be smooth and cosmetically acceptable, free of molding fins, cracks and other exterior blemishes.

Shall be fabricated from aluminum ingot with minimum requirements as follows:

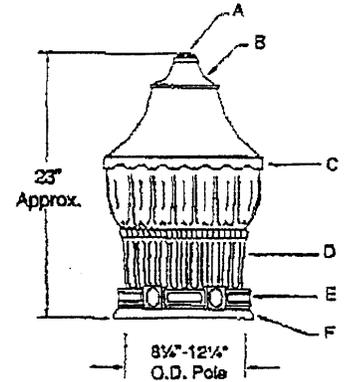


Figure 1

Aluminum Alloy	319
Yield Strength, KSI	14
Tensile Strength, KSI	28
Brinell Harness	70-100
Elongation (% in 2")	1.5

DESIGN:

1. The Ornamental Crown shall be fabricated with dimensions and design characteristics as shown in figure 1.
 - A. Octagonal Pental Cap
 - B. Ornamental Pental
 - C. Ornamental Tulip
 - D. Ornamental Sleeve
 - E. Ornamental Ring
 - F. Adapter Pole Cap
2. Crown segments shall be welded together to create a single ornamental member.
3. Adapter Pole Cap shall be drilled and tapped for a minimum of three (3) 1/4" - 20 setscrews. (When installed, the top of pole shall be drilled so as to allow the setscrews to penetrate pole wall to prevent uplift or walking.)

FINISH:

Ornamental Crown shall have an alodine conversion coating to provide proper base for paint. The entire assembly, with the exception of square and oval portions of the Ornamental Ring shall be painted semi-gloss black and baked in a drying oven after painting.

DELIVERY:

If not already pre-qualified, successful bidder shall deliver a complete assembly within 10 working days after bid opening date.

SPECIFICATION
ORNAMENTAL POLE BASE

PURPOSE: It is the intent of this specification to set forth minimum acceptable standards required for an aluminum ornamental base to fit around lighting or signal poles.

MATERIAL: Ornamental Base shall be cast from aluminum alloy 319 or equivalent, free of voids, pits, dents, molding sand and excessive foundry grinding marks. All design radii shall be smooth and intact. Exterior surface finish shall be smooth and cosmetically acceptable, free of molding fins, cracks other exterior blemishes.

Shall be fabricated from aluminum ingot with minimum requirements as follows:

Aluminum Alloy	319
Yield Strength, KSI	14
Tensile Strength, KSI	28
Brinell Hardness	70-100
Elongation (% in 2")	1.5

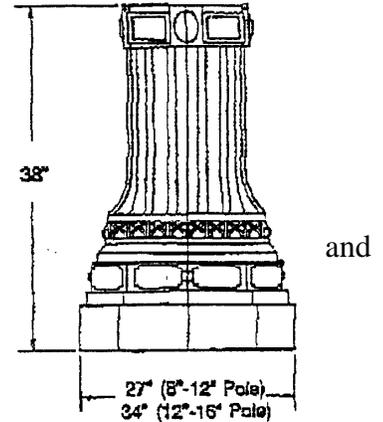


Figure 1

DESIGN:

1. The Ornamental Base shall be fabricated with dimensions and design characteristics as shown in figure 1.
2. Ornamental Base shall consist of four interchangeable quarter sections.
3. Quarter sections shall be secured together at top and bottom with minimum 1/4" - 20 stainless steel socket head capscrews.
4. Top of Ornamental Base shall be capable of being machined to accommodate various shaped poles (round, octagonal, fluted, etc.)
5. Included in this bid will be an extra large Pole Base and Pole Cap. Drawings will be provided for the dimensions that are needed. This will also include the adapter for the decorative base.

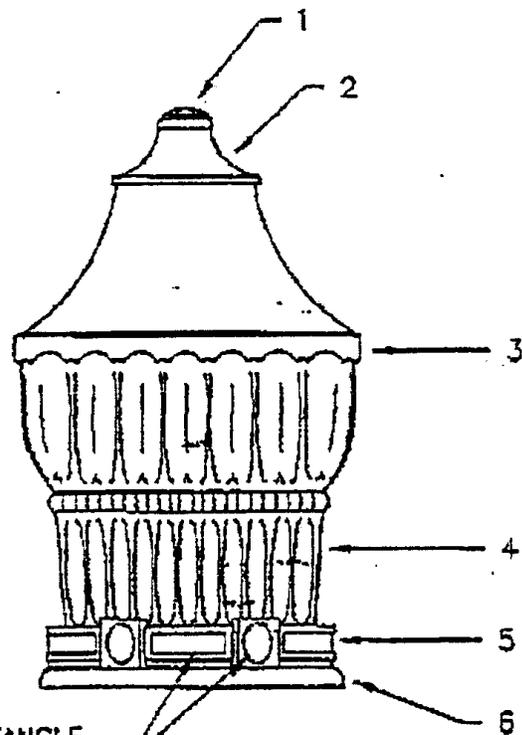
FINISH: Ornamental Base shall have an alodine conversion coating to provide proper base for paint. The entire assembly, with the exception of square and oval portions, shall be painted semi-gloss black and baked in a drying oven after painting.

DELIVERY: If not already pre-qualified, successful bidder shall deliver a complete assembly within 10 working days after bid opening date.

**SPECIFICATION SHEET
ORNAMENTAL POLE CROWN
CITY OF CARROLLTON**

NOTE: -D
BE

MUST



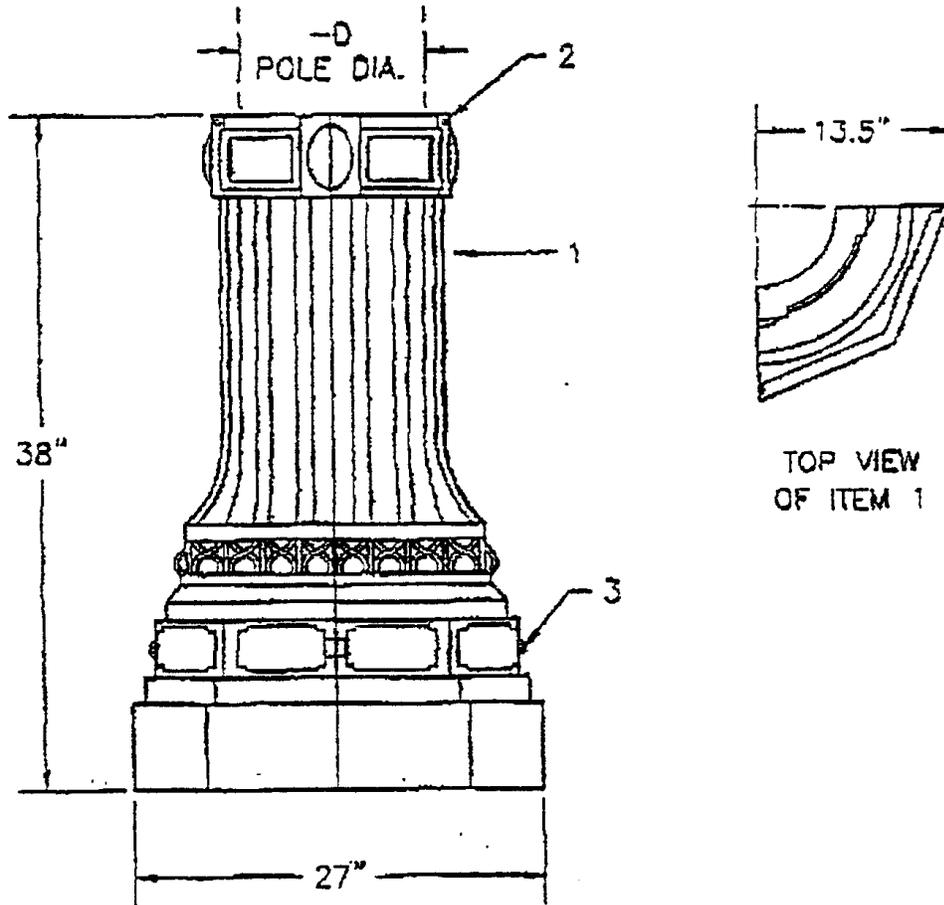
*OVAL & RECTANGLE
TO REMAIN NATURAL ALUMINUM
ALL OTHER TO BE P02 SEMI-GLOSS BLACK

SPECIFIED IN ORDER TO INDICATE WHICH POLE CAP SHOULD BE USED ON THE ASSY.

MATERIAL COATING LEGEND	
<u>COATING</u>	<u>CODE</u>
ALODINE	ALO
BLACK OXIDE	BOX
BRASS	BRS
CHROME	CRM
GALVANIZED	GLV
NO COATING	PNC
ZINC, BRIGHT	ZN1
ZINC, YELLOW	ZN2
ZINC, ULTRA-SEAL	ZN3
PAINTED	PXX

ITEM	PELCO PART NO.	DESCRIPTION	COAT	QTY
	SP-3027-TX-D	ORNAMENTAL POLE CROWN, ALUM. (SPECIFY POLE DIA.)		1
1	SE-0557	OCTAGONAL PENTAL CAP, ALUM	PO2	1
2	PB-0515	ORNAMENTAL PENTAL, ALUM.	PO2	1
3	PF-0513	ORNAMENTAL TULIP, ALUM.	PO2	1
4	PB-0516	ORNAMENTAL SLEEVE, ALUM.	PO2	1
5	PB-0512	ORNAMENTAL RING, ALUM.	*	1
6	AP-0105	POLE CAP, 7¼" (FOR SP-3027-TX-7.25).	PO2	1
	AP-0108	POLE CAP, 10 1/2" (FOR SP-3027-TX-10.50).		

SPECIFICATION SHEET
ORNAMENTAL POLE BASE
CITY OF CARROLLTON



MATERIAL COATING LEGEND	
<u>COATING</u>	<u>CODE</u>
ALODINE	ALO
BLACK OXIDE	BOX
BRASS	BRS
CHROME	CRM
GALVANIZED	GLV
NO COATING	PNC
ZINC, BRIGHT	ZN1
ZINC, YELLOW	ZN2
ZINC, ULTRA-SEAL	ZN3
PAINTED	PXX

ITEM	PELCO PART NO.	DESCRIPTION	COAT	QTY
1	PB-5354-D	ALUMINUM ORNAMENTAL BASE, 4-PIECE FOR 8"-12" DIA. POLE (SPECIFY -D) D=9 1/2"		1
	PB-0563	OCTAGONAL BASE QUARTER, ALUM. FOR 8"-12" DIA. POLE.	PXX	4
2	FS-3979-SS	SCREW. SOC. HD. CAPSCREW, 5/16"-18 X 12 1/4". S.S.	BOX	4
3	FSS-32116-SS	SCREW. SOC. HD. CAPSCREW, 1/4"-20 X 1". S.S.	BOX	4

LOT # 10

ITEM I

**SOLAR POWERED SCHOOL ZONE FLASHER
ASSEMBLIES**

SPECIFICATIONS

RADIO CONTROLLED SOLAR POWERED SCHOOL FLASHERS

GENERAL

- 900 Mhz Radio Controlled Solar Powered School Flashers
- Remote Switch/Radio Receiver to retrofit existing Solar Powered School Flashers

The intent of the following specifications is to provide complete, ready-to-install, 900 Mhz Radio Controlled Solar Powered School Flashers Signs.

. The remote switch/radio receiver, including antenna, is to be such that it can be easily retrofitted to existing Solar Powered School Flashers replacing the existing timers. A key feature of the system is that, once programmed, the system becomes stand-alone and does not require a dedicated computer. Any enhancements or deviation from the specifications should be noted and described in full.

DESCRIPTION

The purpose of this specification is to describe the minimum acceptable design for a double beacon 900 Mhz Radio Controlled Solar Powered School Flashers fully assembled except the solar panel and beacons. This school flasher shall be designed to operate for a period of a minimum of (4) four hours per day, (5) five days per week. It shall be required to operate a minimum of 12 days on back up power or with no solar assist.

1. CABINET

The cabinet shall be manufactured of 0.125 sheet aluminum or cast aluminum. The cabinet dimensions shall be **30”H x 18”W x 12”D**. The battery will need to sit on a 3/4” riser at the bottom of the cabinet.. The controls will be installed at the top of the cabinet and the battery will be installed at the bottom of the cabinet. The cabinet shall have wire screened insect proof louvers on each side of the cabinet compartments for ventilation. The louvers shall be designed to not allow any rain to enter the cabinet. On the bottom of the cabinet there shall be two wire screened insect proof 1/2 inch vent holes at opposite corners. Each cabinet shall have a rubber mat in each compartment with 3/8 inch of sealed, acid-neutral, insulation on the walls and door.

The door shall be a single unit with a continuous hinge bolted to the door and the cabinet with 3/8 in carriage bolts and locking plastic insert nuts. The door shall incorporate a neoprene gasket which when closed forms a snug weather tight seal. The door lock shall be a standard Corbin 2, door-locking device.

Each cabinet shall be equipped with the necessary rigid top and bottom mount for a 4 inch ID pole with 4.5 inch OD pole clamps. All the necessary stainless steel hardware for proper mounting shall be included.

2. HARDWARE

The electrical connection of the solar panel to the control electronics shall allow only one connection between each point by use of a Hubbell Midget Locking Device Nema configuration ML-1P and ML-1R.

A. The physical structure of the flasher assembly should consist of the following items to be part specific.

1. 16' Spun aluminum pole Pelco Part # PB-5102
2. Support Collar Pelco Part # PB-5325
3. Set of anchor bolts pelc Part # PB-5306
4. Pole Base Pelco Part # PB 5335

3. Deleted**3.1. Web Enabled Master Radio**

A Master Radio must be able to connect directly to an IP network via a 10/100 Fast Ethernet port. It must also host a web page that provides users instant access to the radio at any time from any place with connectivity to the WAN. The web page will be used primarily for diagnostic information, but should also be capable of being used for control purposes.

Each Master Radio communicates with its assigned Wireless Beacon Control Units using an integrated 900 MHz frequency hopping radio. It is expected that if a few schools are geographically clustered that they can all be serviced by a single Master Radio, RF conditions permitting. Up to 16 different schedules can be programmed into each Master radio

The Master Radio shall provide hard-wired outputs and inputs in order to enable local beacon control and monitoring functions.

3.2 Wireless Control Unit

Each Wireless Beacon Control Unit has an integrated 900 MHz radio, and resides inside a flashing beacon cabinet. It needs to communicate with a Master Radio. In most deployments, the Wireless Beacon Control Unit is within range of the Master Radio and communicates directly. However, in some deployments, the Wireless Control Unit may need to communicate indirectly, via other Wireless Control Units (repeaters).

The Wireless Control Unit downloads and stores the active schedule in non-volatile memory, and can operate autonomously in the event of communication loss with either the Master Radio or the Management Software.

The Wireless Control Unit can drive up to 2 flashing beacons, and can accept D/C power

4. CONTROL PANEL

The control panel shall be mounted with the Electronics on a removable panel using bolts with wing nuts for a quick and easy removal. Connections ending in the control panel shall be with spade connection, which shall be, secured to an eight position terminal strip that is integral to the control electronics. A solid state flasher/charge controller-regulator (Morningstar SunSaver-6 or equal) shall be mounted on panel with other electronics. The flasher circuit shall have a 50% duty cycle with 50-60 flashers per minute. The charge controller-regulator regulates the top end of the battery bank voltage at 13.8 vdc and provides low voltage disconnect at 11.25 vdc. The charge rate shall be monitored by 2 L.E.D.'s with RED indicating high charge rate, the Green indicating the low rate of charge. A Run/Service switch shall be installed for battery removal. A flash output switch shall be installed to turn off the flash output to the lamps without interfering with any other electronic operation

5. SOLAR PANEL/MODULE

The solar module shall utilize square, single crystal silicon solar cells that are laminated to glass with layers of ethylene vinyl acetate, (EVA). The module back surface shall be white Tedlar. These materials provide a permanently encapsulated, moisture free environment for the solar cell circuit. The module frame shall be made of extruded, polymer coated aluminum alloy. The module junction box shall be a UV resistant, weatherproof wire termination system which handles #14AWG-#8AWG wiring. Power, (peak), + or - 10% shall be **45 watts** The voltage, (peak), shall be 15.5vdc. The current, (peak), shall be 5.8 amps. The open circuit voltage shall be 19.94 vdc. The short circuit current shall be A two position toggle switch shall be located in the cabinet so as to provide a means to disconnect the solar panel output voltage during maintenance. The Solar Panel shall be mounted at a 45 degree angle with ability to be rotated 360 degrees so that the panel can be faced in a southern direction.

6. BATTERY BANK

The battery bank shall consist of one, deep cycle Sunlyte 12-5000X Photovoltaic and Alternative Energy VRLA 100 AH at 100 Hour Rate batteries of a sealed maintenance free design or City of Carrollton, Traffic Operations approved equivalent. The battery float voltage shall be 13.8 volts dc during charging and the low voltage disconnect shall be set at 11.25 volts dc. **The battery shall be a spill proof and leak proof design able to be installed in a horizontal or vertical position. Battery will need to have wingnut post terminals on top of battery.**

7. THIS SECTION HAS BEEN OMMITTED

8. SIGNAL BEACON

(12" Black Polycarbonate Eagle-Signal Part #SA101A1111YYY or equally approved and a Pelco AB-3009-64 clamp kit).

The body shall be a one-piece unit with integral serration's on 5 degree increments in the end sections. Each body shall provide for mounting screwed down terminal blocks and attaching backplates. The one piece poly door shall be equipped with stainless steel hinge pins. Stainless steel thumbscrews shall be used to hold the door against the body. The visor shall be a one piece poly tunnel unit, which shall be duralocked at four points to the door. The lamp shall be a 12 volt DC Yellow or Amber LED fixture installed and wired prior to delivery. The LED fixture shall be a Dialight part number 4313230005 or equal. Wiring shall be #18 AWG, U.L. type 1015, 600 volt, 105 C degree and color coded (black for power and white & green for common). The neoprene gaskets makes the optical unit dust tight.

9. ASSEMBLY AND TURN ON

All components needed for a complete and working Radio Controlled, Solar Powered, Double Beacon School Flasher shall be assembled at the factory and shipped to Carrollton ready for installation in the field. Solar Panel and Rack may be shipped separate. Turn on and field installation shall require a factory representative to be present. Training and assistance shall be required on school flashers to be provided at the city signal shop. **2 complete sets of fully functional schematics shall be provided with each flasher assembly provided. Inaccurate or missing schematics will delay payment until issue is resolved.**

10. WARRANTY

Each manufacturer shall include in his proposal all warranties and/or guarantees with respect to materials, parts, workmanship, and performance of his product. A minimum two year warranty from the date of receipt of equipment shall be required. The solar module output shall be covered by the manufacturer for a minimum of ten (10) years. Each manufacturer shall have a representative available for checking out each controller, cabinet, and auxiliary equipment and for acquainting city personnel with the operation of same. This shall be performed at the City of Carrollton signal shop, 1420 Hutton Drive. All shipping costs for warranty repairs shall be paid by manufacturer.

LOT # 11

ITEM I

LED TRAFFIC SIGNAL LAMPS

LED TRAFFIC SIGNAL LAMPS

All LED traffic signals lamps shall be 12-inch and shall meet or exceed I.T.E. (Institute of Traffic Engineers Specifications.) and be approved by TXDOT for wide angle visibility applications.

All LED traffic signal lamps shall have a minimum 5 year warranty against failure under normal use. Failure is defined as loss of lumen output where as I.T.E. and TXDOT specifications are no longer met.

A sample LED traffic signal lamp shall be submitted for approval by each bidder in advance of bid award. Each sample shall be submitted cost free and shall become property of the City of Carrollton. The sample shall not be considered part of any future orders or purchases. Contact the Signal Supervisor at 972-466-9872 to arrange for delivery and/or approval.

Compliance with or variation from the specifications must be noted as to each item on the specification sheet. All variations from the specifications must be noted on the bid form.

1. Twelve (12) inch Red LED Incandescent look traffic signal lamp.
2. Twelve (12) inch Green LED Incandescent look traffic signal lamp.
3. Twelve (12) inch Green Arrow Incandescent look LED traffic signal lamp.
4. Twelve (12) inch Yellow LED Incandescent traffic signal lamp.
5. Twelve (12) inch Yellow Arrow Incandescent look LED traffic signal lamp
6. Twelve (12) inch 12 VDC Yellow LED traffic signal lamp.
7. Twelve (12) inch Countdown Pedestrian Signal head insert.
8. Twelve (12) inch Red Arrow LED incandescent look traffic signal lamp

PART III

ALL NECESSARY FORMS FOR COMPLETION

PROPOSAL OF BIDDERS

The term RFP and BID are used as interchangeable terms in this document.

All:

The following RFP is made for furnishing the materials/services for the city of Carrollton, Texas.

The undersigned declares that the amount and nature of the materials/services required is understood and that this proposal is in strict accordance with the requirements of the RFP and is a part of this bid, and that there will at no time be a misunderstanding as to the intent of the specifications or conditions to be overcome or pleaded after the bids are opened.

The proposer shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any Department of Transportation (DOT)-assisted contract or in the administration of its Disadvantaged Business Enterprise (DBE) program or the requirements 49 CFR part 26. The proposer shall take all-necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts. The recipient's DBE program, as required by 49 CFR part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the recipient of its failure to carry out its approved program, the Department may impose sanctions as provided for under 49 CFR part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 et seq.). Further, pursuant to City of Carrollton Ordinance No. 3896, Contractor shall not discriminate against any individual due to age, race, sex, religion, national origin, sexual orientation, gender identity, pregnancy, or political beliefs.

The undersigned hereby proposes to furnish any supplies or equipment necessary for this bid/rfp, F.O.B. Carrollton, Texas, freight pre-paid at the unit prices quoted herein after notice of bid award. The undersigned affirms that they are duly authorized to execute this contract that this company, corporation, firm, partnership or individual and has not prepared this bid in collusion with any other bidder, and that the contents of this bid as to prices, terms or conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this type of business prior to the official opening of this rfp/bid.

Successful bidder(s) agrees to extend prices to all entities that have entered into or will enter into joint purchasing interlocal cooperation agreements with the City of Carrollton. The City of Carrollton is a participating member of the Collin County Governmental Purchasers Forum. As such, the City of Carrollton has executed an interlocal agreement with certain other governmental entities in Collin County authorizing participation in a cooperative purchasing program. The successful vendor may be asked to provide product/services, based upon the bid price to any other participant in the forum.

Texas Government Code §2270.002 forbids Texas government entities from contracting with any company that excludes or boycotts Israel, or will do so during the term of a contract. Also, Texas Government Code §2252.152 prohibits Texas governments from contracting with companies who do business with Iran, Sudan, or foreign terrorist organizations. If Bidder or Bidder's company boycotts Israel or will boycott Israel during the contract, does business with Iran, Sudan, a terrorist organization, or is an organization listed with the Texas Comptroller pursuant to Chapter 2252 of the Texas Government Code, you must disclose this in your bid response and provide details of such business. In addition, the Vendor who wins a bid award must guarantee that they will not employ a subcontractor in the performance of the bid award who falls under either law. Submission of a bid proposal shall be deemed an affirmative statement that Bidder does not and will not boycott Israel, and Bidder does not and will not contract with Iran, Sudan, or any terrorist organization. If you need to provide the city any detail regarding these new laws, please attach details as needed.

Please sign on the line below as verification that your company is not excluded from contracting with the city of Carrollton by either Texas law, and will remain in compliance with all of the above for the term of the bid award.

SIGNATURE: _____

PROPOSAL OF BIDDERS

Page 2 of 2

RFP# 20-003
TRAFFIC SIGNAL EQUIPMENT

Respectfully Submitted,

**PLEASE PROVIDE A COPY OF
YOUR W-9**

SIGNATURE

DATE

PRINTED NAME TITLE

COMPANY NAME CONTACT PERSON

MAILING ADDRESS CITY STATE ZIP

PAYMENT ADDRESS CITY STATE ZIP

PHONE NUMBER FAX NUMBER

E-MAIL ADDRESS WEB PAGE

HUB Vendor Status YES (attach certification) NO

HUB VENDORS: HUB Vendors (Historically Underutilized Business) are Vendors whose company is owned by either a minority or woman. If you are classified as a HUB Vendor and have certification to prove this, please respond below and attach a copy of your certification. If you would like to read the Texas bid statute, which references HUB Vendors, please follow this link <http://www.statutes.legis.state.tx.us/SOTWDocs/LG/htm/LG.252.htm>

NO BIDS: If response is not received in the form of a “RFP” or “NO RFP RESPONSE” bidder will be removed from bid list. Please give a specific reason as to why you are unable to bid, i.e.: we do not sell the required product/service.

NO BIDS may sent to purchasing.bids@cityofcarrollton.com

ATTACHMENT A

RFP PROPOSAL PRICING SHEET

PLEASE SEE ATTACHEMENT A

1. **THIS DOCUMENT MUST BE SUBMITTED ELECTRONICALLY TO purchasing.bids@cityofcarrollton.com.**
2. **It is highly preferred that this document is submitted in IN EXCEL FORMAT ONLY.**
3. **If you are submitting a paper response please be sure to include a paper copy with your RFP.**

ATTACHMENT B

CONFLICT OF INTEREST QUESTIONNAIRE

Chapter 176 of the Texas Local Government Code requires that any Vendor or person considering doing business with a local government entity disclose in the Questionnaire Form CIQ, the Vendor or person's affiliation or business relationship that might cause a conflict of interest with a local government entity. By law, this questionnaire must be filed with the City Secretary of the city of Carrollton not less than the seventh business day after the person becomes aware of facts that require the statement to be filed.

The conflict of Interest Questionnaire must be completed and returned with your bid if a Vendor or its agent has a conflict pursuant to Chapter 176.

It is the responsibility of every Vendor filling out and returning this bid to determine if there is a conflict meeting the parameters listed above. If so, **the City of Carrollton requires that this Questionnaire be completed and turned in with your bid.** If there is no conflict, or if the amount of the conflict is less than \$23,500, then you are not required to submit the Questionnaire with your bid. In addition to the foregoing, after the submission of a bid a Vendor must file a questionnaire if the Vendor becomes aware of facts or an event that would constitute a conflict pursuant to state law, or if the facts or event would make a statement in a previously filed questionnaire incomplete or inaccurate.

See Section 176.006, Local Government Code which reads, "A person commits an offense if the person violated Section 176.006, Local Government Code. An offense under this section is:

- (1) A Class C misdemeanor if the contract amount is less than \$1 million or if there is no contract amount for the contract;
- (2) A Class B misdemeanor if the contract amount is at least \$1 million but less than \$5 million; or
- (3) A Class A misdemeanor if the contract amount is at least \$5 million.

The governing body of a local governmental entity may, at its discretion, declare a contract void if the governing body determines that a Vendor failed to file a conflict of interest questionnaire required by Section 176.006.

CONFLICT OF INTEREST QUESTIONNAIRE For vendor doing business with local governmental entity		FORM CIQ
<p>This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.</p> <p>This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).</p> <p>By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.</p> <p>A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.</p>	OFFICE USE ONLY	
<p>1 Name of vendor who has a business relationship with local governmental entity.</p>	Date Received	
<p>2 <input type="checkbox"/> Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)</p>		
<p>3 Name of local government officer about whom the information is being disclosed.</p> <p style="text-align: center;">_____</p> <p style="text-align: center;">Name of Officer</p>		
<p>4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.</p> <p style="margin-left: 40px;">A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?</p> <p style="margin-left: 80px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </p> <p style="margin-left: 40px;">B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?</p> <p style="margin-left: 80px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </p>		
<p>5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.</p>		
<p>6 <input type="checkbox"/> Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).</p>		
<p>7</p> <p style="text-align: center;"> _____ Signature of vendor doing business with the governmental entity </p> <p style="text-align: right; margin-right: 100px;"> _____ Date </p>		

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

- (i) a contract between the local governmental entity and vendor has been executed;
- or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

- (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
- (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

- (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
- (B) that the vendor has given one or more gifts described by Subsection (a); or
- (C) of a family relationship with a local government officer.

ATTACHMENT C

CERTIFICATE OF INTERESTED PARTIES

Form 1295 (Certificate of Interested Parties attached) must be submitted through the Texas Ethics Commission's website, and a notarized original form as printed from the website to the City prior to approval of the contract. More information is found at the following link:

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm.

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

https://www.ethics.state.tx.us/whatsnew/FAQ_Form1295.html

Once bid evaluations take place by city staff, you will be notified that an award to your company is pending and that this form is mandatory. You will need to provide this form to the city before City Council approval can be considered.

You can fill out the form online, get a certificate number, and that number goes in the upper right box.

CERTIFICATE OF INTERESTED PARTIES		FORM 1295	
Complete Nos. 1 - 4 and 6 if there are interested parties. Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.		OFFICE USE ONLY	
1 Name of business entity filing form, and the city, state and country of the business entity's place of business.		Must file online at www.ethics.state.tx.us/File	
2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.			
3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.			
4	Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)
			<input type="checkbox"/> Controlling <input type="checkbox"/> Intermediary
5 Check only if there is NO Interested Party. <input type="checkbox"/>			
6 UNSWORN DECLARATION My name is _____, and my date of birth is _____. My address: _____ (street) _____ (city) _____ (state) _____ (zip code) _____ (country). I declare under penalty of perjury that the foregoing is true and correct. Executed in _____ County, State of _____, on the _____ day of _____, 20____. (month) (year)			
_____ Signature of authorized agent of contracting business entity (Declarant)			
ADD ADDITIONAL PAGES AS NECESSARY			