DATE: 1/06/2010

BID NO.: 50-00096191
B2009000306

INVITATION TO BID
THIS IS NOT AN ORDER

JEFFERSON PARISH

PURCHASING DEPARTMENT
P.O. BOX 9
GRETNA, LA. 70054-0009
504-364-2678

VENDOR:

BUYER: AHolmes

BIDS WILL BE RECEIVED IN THE PURCHASING DEPARTMENT, SUITE 4400, JEFFERSON PARISH GENERAL GOVERNMENT BUILDING, 200 DERBIGNY STREET, GRETNA, LA 70053 UNTIL 2:00 PM, 1/26/2010 AND PUBLICLY OPENED UPON COMPLETION OF ADMINISTRATIVE TASKS.

LATE BIDS WILL NOT BE ACCEPTED

NOTE: ONLY BIDS WRITTEN IN INK OR TYPEWRITTEN, AND PROPERLY SIGNED BY A MEMBER OF THE FIRM OR AUTHORIZED REPRESENTATIVE, WILL BE ACCEPTED. PENCIL AND/OR PHOTOSTATIC FIGURES OR SIGNATURES DISQUALIFY BID.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

THE FOLLOWING INSTRUCTIONS APPLY TO ALL BIDS

All bids submitted are subject to these instructions and general conditions and any special conditions and specifications contained herein, all of which are made part of this bid proposal reference. THIS BID PACKAGE MUST BE RETURNED IN ITS ENTIRETY.

Questions on this bid are to be faxed to (504) 364-2693 no later than FIVE (5) working days prior to bid opening. Bid numbers should be mentioned in all requests.

The purpose and intention of this invitation to bid is to afford all suppliers an equal opportunity to bid on all construction, maintenance, repair, operating supplies and/or equipment listed in this bid proposal. JEFFERSON PARISH will accept one bid only from each vendor. Items bid must meet or exceed specifications.

JEFFERSON PARISH will accept one price for each item unless otherwise indicated. Two or more prices for one item will result in bid rejection.

If the bid exceeds $20,000.00 and the bidder is an agency, corporation, partnership, or other legal entity, the president, vice-president, secretary/treasurer, or an authorized agent, shall sign the proposal, and satisfactory evidence of the authority of the person signing for the agency, corporation, partnership, or other legal entity shall be attached to the proposal.

AWARD OF CONTRACT: JEFFERSON PARISH reserves the right to award contracts or place orders on a lump sum or individual item basis, or such combination, as shall in its judgment be in the best interest of JEFFERSON PARISH. Every contract or order shall be awarded to the LOWEST RESPONSIBLE BIDDER, taking into consideration the CONFORMITY WITH THE SPECIFICATIONS and the DELIVERY AND/OR COMPLETION DATE.

Preference is hereby given to materials, supplies, and provisions produced, manufactured or grown in Louisiana, quality being equal to articlesoffered by competitorsoutside the state. "LSA-R.S.38:2251-2261"

USE OF BRAND NAMES AND STOCK NUMBERS: Where brand names and stock numbers are specified, it is for the purpose of establishing certain minimum standards of quality. Bids may be submitted for products of equal quality, provided brand names and stock numbers are specified. Complete product data may be required prior to award.

CANCELLATION OF CONTRACT: JEFFERSON PARISH reserves the right to cancel all or any part if not shipped promptly. No charges will be allowed for parking or cartage unless specified in quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel any contract at anytime and for any reason by issuing a THIRTY (30) day written notice to the contractor.

For good cause and as consideration for executing a contract with Jefferson Parish, vendor conveys, sells, assigns and transfers to Jefferson Parish or its assigns all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of Louisiana, relating to the particular good or services purchased or acquired by Jefferson Parish.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

JEFFERSON PARISH requires a firm price. Quoted price will remain firm until _____

PRICES: Jefferson Parish is exempt from paying sales tax under LSA-RS 47:301 (8)(c). All prices for purchases by Jefferson Parish of supplies and materials shall be quoted in the unit measure specified and unless otherwise specified, shall be exclusive of state and Parish taxes. If a contractor is to act as Purchasing Agent for tax-exempt purposes, the Parish shall specifically state so within this bid specification. All quotations shall be based on F.O.B. Agency warehouse or job site, anywhere within the Parish as designated by the Purchasing Department.

Quantities listed are for bidding purposes only. Actual requirements may be more or less than quantities listed.

Bidders are not to exclude from particpation in, deny the benefits of, or subject to discrimination under any program or activity, any person in the United States on the grounds of race, color, national origin, or sex; nor discriminate on the basis of age under the Age Discrimination Act of 1975, or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973, or on the basis of religion, except that any exemption from such prohibition against discrimination on the basis of religion as provided in the Civil Rights Act of 1964, or Title VI and VII of the Act of April 11, 1968, shall also apply. This assurance includes compliance with the administrative requirements of the Revenue Sharing final handicapped discrimination provisions contained in Section 51.55 (c), (d), (e), and (k)(5) of the Regulations. New construction or renovation projects must comply with Section 504 of the 1973 Rehabilitation Act, as amended, in accordance with the American National Standard Institute's specifications (ANSI A117.1-1961).

RESPONSE TO INVITATION: If your company is unable to bid on this request, please state your reason on bid form, and return to this office before bid opening date. Failure to do so may result in the removal of your company from Jefferson Parish's vendors list.

The general specifications for construction projects and the purchase of materials, services and/or supplies are those adopted by the JEFFERSON PARISH Council by Resolution No. 105529 or 105530 dated 5/17/06. The general conditions adopted by this resolution shall be considered as much a part of this document as if they were written wholly herein. A copy may be obtained from the Office of the Parish Clerk, Suite 6700, Jefferson Parish General Government Building, 200 Derbigny Street, Gretna, LA 70053.

POSTING OF BIDS: Non-Advertised bids will be posted on bulletin board in Suite 4400, Jefferson Parish General Government Building, Gretna, LA, for a period of Five (5) working days after opening date.

Advertised bids will be tabulated and a copy forwarded to each responsive bidder.

ADDITIONAL REQUIREMENTS FOR THIS BID

PLEASE MATCH THE NUMBERS PRINTED IN THIS BOX WITH THE CORRESPONDING INSTRUCTIONS BELOW.

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1. All bidders are invited to attend the pre-bid conference. Failure to attend the pre-bid conference shall not relieve the bidder of responsibility for information discussed at the conference. This conference is held to allow questions to be answered and inspect the site with owner's representative, etc. Failure to attend the pre-bid conference and inspection does not relieve the successful bidder from the necessity of furnishing materials or performing any work that may be required to complete the work in accordance with the specification (with no additional cost to the owner).

2. Contractor must hold current applicable JEFFERSON PARISH licenses with the Department of Inspection and Code Enforcement. Contractor shall obtain any and all permits required by the JEFFERSON PARISH Department of Inspection and Code Enforcement. The contractor shall be responsible for the payment of these permits. All permits must be obtained prior to the start of the project.

3. A Louisiana state contractor's license may be required in accordance with LSA-R.S. 37:2150 et seq.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

4. It is the bidder's responsibility to visit the job site and evaluate the job before submitting a bid.

5. Job site must be clean and free of all litter and debris daily and upon completion of the contract. Passageways must be kept clean and free of material, equipment, and debris at all times. Flammable material must be removed from the job site daily because storage will not be permitted on the premises. Precautions must be exercised at all times to safeguard the welfare of JEFFERSON PARISH and the general public.

6. All awards in excess of $5,000.00 for the construction, alteration, or repair of any public works will b reduced to a formal contract which shall be recorded at the contractor's expense. A price list of recordation costs may be obtained from the Clerk of Court and Ex-officio Recorder of Mortgages for the Parish of Jefferson. All awards in excess of $25,000.00 reduced to formal contract will require a performance bond.

7. A performance bond will be required for this bid. The amount of the bond will be 100% of the contract price unless otherwise indicated in the specifications. Performance bond shall be supplied at the signing of the contract.

8. Please indicate if you have insurance: YES _____ NO _____
   Successful bidder will be required to furnish proof of insurance to this office.
   Successful bidder will be required to furnish Federal I.D. Number.

9. Minimum insurance requirements for this bid are as indicated on the attached sheet.

10. Each bid must be accompanied by a cashier's check, certified check, money order, or surety bid bond in the amount of 5% of the bid.

11. Affidavit required to be submitted with bids on all solicitations for construction, alteration or demolition of public building or project. (LSA-R.S. 38:2224)

12. This is a requirements contract to be provided on an as needed basis.

13. All prices must be held firm unless an escalation provision is requested in this bid. Jefferson Parish will allow one escalation during the term of the contract, which may not exceed the U.S. Bureau of Labor Statistics National Index for all Urban Consumers, unadjusted 12 month figure. The most recently published figure issued at the time an adjustment is requested will be used. A request must be made in writing by the vendor, and the escalation will only be appled to purchases made after the request is made.

    Are you requesting an escalation provision?

    YES _____ NO _____

    MAXIMUM ESCALATION PERCENTAGE REQUESTED _____%

    INITIAL BID PRICES WILL REMAIN FIRM THROUGH THE DATE OF _____.

    For the purposes of comparison of bids when an escalation provision is requested, Jefferson Parish will apply the maximum escalation percentage quoted by the bidder to the period to which it is applied in the bid. The initial price and the escalation will be used to calculate the total bid price. It will be assumed, for comparison of prices only, that an equal amount of material or labor is purchased each month throughout the entire contract.

14. In the event that the successful bidder cannot furnish a specific item or material and labor in the required time, JEFFERSON PARISH may purchase on an emergency basis from the next lowest bidder, or available source, until such time as the successful bidder has notified the PARISH in writing that his stock or labor capability has been replenished. The difference in price will be charged against the successful bidder of this contract, and evidence of purchases and price will be provided.

15. Vendor will be required to submit to the chief buyer of the JEFFERSON PARISH Purchasing Department a quarterly usage report by item of all items listed on this proposal.

16. Freight charges should be included in total cost when quoting. If not quoted FOB DELIVERED, freight must be quoted as a separate item. Bid may be disqualified if not quoted FOB DELIVERED or if freight charges are not indicated on bid form.

INSTRUCTIONS FOR BIDDERS AND GENERAL CONDITIONS

DELIVERY: FOB JEFFERSON PARISH

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES _____

INDICATE STARTING TIME (IN DAYS) FOR CONSTRUCTION WORK _____

INDICATE COMPLETION TIME (IN DAYS) FOR CONSTRUCTION WORK _____

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable) _____

*** ALL BIDDERS MUST COMPLETE SECTION BELOW ***	
FIRM NAME:	
SIGNATURE: (Must be signed here)	TITLE:
PRINT OR TYPE NAME:	
ADDRESS:	
CITY, STATE:	ZIP:
TELEPHONE: ( )	FAX: ( )
EMAIL ADDRESS:	

TOTAL PRICE OF ALL BID ITEMS: $ _____

THIS BID MUST BE SIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE COMPANY/FIRM FOR BID TO BE VALID. BID PACKAGE, INCLUDING INSTRUCTIONS AND SPECIFICATIONS, MUST BE RETURNED IN ITS ENTIRETY FOR BID TO BE VALID. SIGNING INDICATES YOU HAVE READ AND COMPLY WITH THE INSTRUCTIONS AND CONDITIONS.

NOTE: All bids should be returned with the **bid number and bid opening date** indicated on the outside of the envelope submitted to the Purchasing Department.

INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00096191

SEALED BID

ITEM NUMBER	QUANTITY	U/M	DESCRIPTION OF ARTICLES	UNIT PRICE QUOTED	TOTALS
			PURCHASE QUANTITY OF BASE MOUNTED CABINET (P-TYPE) FOR JEFFERSON PARISH DEPARTMENT OF TRAFFIC ENGINEERING.		
1	2	EA	0010 Traffic Controls and Equipment SA-Cab, 16LS, JP Cabinet assemble, 16 load cells, 6 transfer relays, detector rack with power supply, Type P, (type 6) cabinet, wired - no control equipment.		
2	1	EA	0020 Traffic Controls and Equipment, SA-CAB, 12LS, JP Assembly, 12 load cells, 6 transfer relays, detector rack with power supply, Type P. (Type 6) cabinet, wired - no control equipment. As Per Attached Specifications. SHIP TO AND BILL TO: JEFFERSON PARISH TRAFFIC ENGINEERING 2100 DICKORY AVENUE HARAHAN, LA 70123		

BASE MOUNTED CABINET (P-TYPE) FOR FULL-ACTUATED CONTROLLER WITH PREEMPTION AND HARDWIRE INTERCONNECT

1.0 SPECIFICATIONS PURPOSE

This specification describes the minimum acceptable requirements for a base mounted cabinet to house a solid state full-actuated controller unit, load switches, flasher, preemption equipment and conflict monitor.

2.0 DESIGN REQUIREMENTS

Unless otherwise called for in the plans, the cabinet shall be a base mount cabinet with the following external dimensions:

Width ..... - 44 inches
Height..... - 54 inches
Depth..... - 26 inches

The height and depth dimensions may be plus 4 inches, minus 2 inches.

3.0 MOUNTING REQUIREMENTS

The base mounting holes shall be located at the corners of a 40.6 inch by 18.5 inch rectangle. The holes shall be slotted to allow the cabinet to be adjusted plus or minus 1/2 inch along the short dimension of the cabinet and shall be large enough to accommodate a 1 inch diameter bolt.

3.1 Four, 3/4 inch (minimum) by 18 inch galvanized anchor bolts with nuts and washers and a mounting template shall be provided for each cabinet.

4.0 MISCELLANEOUS REQUIREMENTS

4.1 The cabinet shall be constructed using unpainted sheet aluminum with a minimum thickness of 0.125 inch. No wood, wood fiber products or other flammable material shall be used in the cabinet. All welds shall be neat and of uniform consistency.

4.2 The cabinet shall be completely weatherproofed to prevent the entry of water. All un-welded seams shall be sealed with a clear or aluminum colored weather seal compound. Aluminum lifting eyes or ears shall be permanently attached or built into the cabinet to permit the purchaser to lift the cabinet with a sling. The corners of each eye or ear shall be rounded.

4.3 Vertical shelf support channels shall be provided to permit adjustment of shelf location in the field.

4.4 Each cabinet shall be equipped with an extra set of Unistrut channels or a keyhole panel on either side of the front section of the cabinet to permit the purchaser to mount additional equipment as necessary.

4.5 Shelves shall be at least 10 1/2 inches deep and be located in the cabinet to provide a 1/2 inch clearance between the back of the shelf and the back of the cabinet.

4.6 There shall be sufficient shelf space to accommodate a controller unit 13 inches high, a 12 channel NEMA conflict monitor and 12 NEMA type loop detector amplifiers. An additional space 12 inches high, 14 inches wide and 12 inches in depth, shall be provided.

4.7 The cabinet shall be vented and cooled by two (2) thermostatically controlled fans. The fans shall be a commercially available model with a capacity of at least 100 CFM. The thermostat shall be an adjustable type with a range of between 70 and 110 degrees F. A press-to-test switch shall be provided to test the operation of the fans.

4.8 The intake for the fan ventilation system shall be filtered with an air conditioning filter. The filter dimensions shall be 14 inches wide by 25 inches high by one inch thick. The filter shall be securely mounted so that any air entering the cabinet must pass through the filter. The cabinet opening for this intake of air shall be large enough to use the entire filter. The air intake and exhaust vent shall be screened to prevent entry of insects. The screen shall have openings no larger than 0.0125 sq. inch. The total free air opening of the exhaust vent shall be large enough to prevent excessive back pressure on the fans.

4.9 The cabinet shall be provided with a unique five digit (minimum) serial number, which shall be stamped directly on the cabinet or engraved on a metal or metalized Mylar plate, epoxied or riveted with aluminum rivets to the cabinet. The digits shall be at least 0.2 inch in height and located on a visible interior sidewall of the cabinet near the front.

5.0 BACK PANEL

5.1 The back panel shall be designed to accept 12 NEMA load switches (Eight vehicle phases and four positions for overlap and/or pedestrian phase combinations) and a NEMA two circuit flasher. A minimum of six flash transfer relays (NEMA standard) shall be provided to permit the use of the overlap/pedestrian load switches in any combination without having to add more relays.
NOTE: When specified on an order or plans sixteen, (16) NEMA load switches shall be provided as specified below and six flash transfer relays shall be provided for eight phases and four overlaps.

5.2 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 panel in less than two minutes using simple tools. Wire termination points on the back of the back panel shall be numbered or identified to correspond to the labeling on the face of the panel. No printed circuits on back panels shall be permitted. No components shall be mounted behind the back panel. Transient suppression devices for relay coils are an exception to this requirement.

5.3 The bottom edge of the back panel shall be at least six inches above the base of the cabinet.

5.4 The outputs from the controller to the load switches shall be brought through posted 6-32 x 1/4 inch binder head screw terminals with removable shorting bars installed.

5.5 The controller assembly back panel shall provide 12 load switch sockets connected for 8 vehicle (phase 1-8) and 4 overlap (phases 2,4,6 and 8) movements. Twelve load switches shall be supplied with each cabinet. It shall be possible to easily configure the overlap load switches to perform pedestrian functions using only a screwdriver.
NOTE: When specified on the order or plans the back panel shall have 16 load switch sockets connected for 8 vehicle (phase 1-8), 4 overlaps (phases 2,4,6 and 8) movements, and 4 Pedestrian movements (phases 2,4,6, and 8). Sixteen load switches shall be supplied with each cabinet. It shall be provided for easily configuring the load switches to any of the controller outputs by relocating wiring jumpers between terminals on the back panel.

5.6 The load switches and flasher shall be supported by a shelf or bracket(s), designed to accept all NEMA type load switches and

flashers that will support the switch and prevent vibration from dislodging it from the socket in the back panel.

5.7 The load switch outputs shall be brought out through posted 10-32 x 5/16 inch binder head screw terminals. Field wiring for the signal heads shall be connected at this terminal strip.

5.8 Flash programming of either Amber or Red flashing field signal indications shall be easily configured using only a screwdriver.

6.0 DETECTOR PANEL

6.1 The cabinet shall have a loop detector panel mounted on the left side of the cabinet. This panel shall provide for all connections between loops at the street and detector amplifiers, Pedestrian call isolation, detector test switches and connection between detector amplifiers and the controller unit.

6.2 Inputs from the street loops shall be brought in through posted 10-32 x 5/16 inch binder head screw terminals. Terminations shall be provided for 16 loops inputs, four pedestrian push buttons (for phases two, four, six and eight), and four emergency vehicle preemption detectors.

6.3 The outputs from the detectors to the controller shall be brought through posted 6-32 x 1/4 inch binder head screw terminals with either removable shorting bars installed or wire jumpers located on separate terminals on the face of the back panel.

6.4 An ON-OFF MOMENTARY toggle switch shall be provided for each vehicle and pedestrian phase to permit the user to disconnect the input from the detector for that phase from the controller unit, or permit the user to place a call to the controller. The MOMENTARY position shall place a call to the controller. The ON position shall connect the detector to the controller unit. The center OFF position shall disconnect the detector from the controller unit.

6.5 Pedestrian isolation card shall be provided. Pedestrian calls from pushbuttons shall be optically isolated from the controller inputs using external solid-state circuitry mounted on a pedestrian isolation card.

7.0 DETECTOR CARD RACK

7.1. Card rack shall be designed with top and bottom card guides for four-four channel detector cards mentioned above, one four channel Opticom phase selector, and a power supply installed.

7.2. The housing shall be constructed of 5052 aluminum alloy of a minimum thickness 0.062 inch .

7.3. The dimension of the rack shall be approximately 19 inches wide, 6 inches high and 9 inches deep. The rack shall be mounted to the bottom shelf in the cabinets, hinged to swing out to provide access to the rear assembly without removing the shelf(s) size to be increased to include space for the 3m opticom detector and wiring to the emergency preemptor input.

7.4. The power supply shall be a separate device with the necessary wiring to connect to the detector rack. And operate on 120 VAC, 60 Hz, and the AC+ into the power supply shall be fused. The fuse shall be located on the supply card, permanently labeled indicating the fuse and size. The supply shall meet NEMA specifications and provide 24 VDC, 385 ma, regulated as specified in NEMA TS-1-1989, Section 15.2.6.2. A power indicator and a fuse shall be provided on the front of the supply for each output. A pull handle shall be on the front of the unit. The power supply shall be located on the left side of the rack when viewed from the front. <u>DC voltage from the power supply shall not be supplied to the isolator positions.</u>

7.5. The rack shall be wired with a separate power cord and individual wires to each card position. Each module slot shall be wired directly to the card edge connector with color coded harness. The harness shall meet the requirements for wiring elsewhere in this standard. Each input from the field wiring shall be a twisted pair. A sufficient amount of slack in the wiring harness shall allow the rack to be moved for visual inspection and mechanical repairs. The wiring shall be cabled together into a harness, attached to the back right side (viewed from the front) with an approved cable clamp, and routed to the back and detector panel.

7.6. The cards in the rack shall be numbered from left to right viewed from the front in order to identify the position function. The first position will be the power supply; the second, a four channel detector for phases 1, 2, 3, and 4; the third, a four channel detector for phases 5, 6, 7, and 8; the fourth, a four channel detector for special detectors 1, 2, 3, and 4; the fifth, a four channel detector for special detectors 5, 6, 7, and 8 ; and the sixth position shall be a four

channel opticom phase selector wired to the first four emergency vehicle preemption inputs.

8.0 CABINET DOOR

8.1. The cabinet shall be provided with one door in front that will provide access to the cabinet. The door shall be provided with three hinges with non-removable stainless steel pins, or a full-length piano hinge with a stainless steel pin spot-welded at the top of the hinge. The hinge(s) shall be mounted so that it is not possible to remove them from the door or cabinet without first opening the door. The bottom of the door opening shall extend at least to the bottom level of the back panel.

8.2. The door and hinge(s) shall be braced to withstand a 50-pound per vertical foot of door height load applied vertically to the outer edge of the he 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 90 degrees and 180 degrees.

8.3. The cabinet door shall be fitted with a Number 2 Corbin lock and cast aluminum or chrome plated steel handle with a 1/2 inch (minimum) shaft and a three point latch. The lock and latch design shall be such that the handle cannot be released until the lock is released. One key shall be provided for each cabinet. The lock shall be located clear of the arc of the handle. The door handle shall be capable of being padlocked in the closed position.

8.4. A gasket shall be provided to act as a permanent dust and weather resistant seal at the controller cabinet door facing. The gasket material shall be of a nonabsorbent material and shall maintain its resiliency after long-term exposure to the outdoor environment. The gasket shall have a minimum thickness of 3/8 inch. The gasket shall be located in a channel provided for this purpose whether on the cabinet or on the door(s). An "L" bracket is acceptable in lieu of this cannel if the gasket is fitted snugly against the bracket to insure a uniform dust and weather resistant seal around the entire door facing.

8.5. A locking auxiliary police access door shall be provided in the door of the cabinet to provide access to a panel that shall contain a signal shutdown switch, a signal flash switch, a manual-automatic switch and a manual controller phase advance pushbutton switch on a six foot retractable cord. Manual control of the controller unit from the police door panel shall override any external control (external logic, etc.) in effect when the Manual-Automatic switch is in the manual position. Each actuation of the manual advance pushbutton switch shall advance the controller to the next pedestrian or green interval as described in NEMA TS 1-1983 14.3.4.2(5). Manual control shall not override any calls for preemption.

8.6. The police access door shall be gasketed to prevent entry of moisture or dust and the lock shall be provided with one brass key.

8.7. A heavy gauge vinyl plastic pouch shall be riveted to the inside of the cabinet door. The pouch shall be approximately 12 x 17 inches and large enough to accommodate a copy of the cabinet wiring diagram, controller manual, and a documentation for other accessories.

9.0 SPECIAL FUNCTION PANEL

In this bid or on enclosed plan sheets, special function panel will be supplied as described in the following specifications.

9.1. The panel shall be provided that contains all special functions between the cabinet and the controller unit that are listed for the 57 pin connector. The panel shall be located on the left side of the cabinet interior.

9.2. The panel shall be interfaced through a 57- conductor communication cable. The cable shall be hardwired to the back of the special function panel, and shall be connected to the controller through a 57-pin plastic shell twist-lock connector having standard pin assignments defined in Appendix I. The exact socket pin part number will depend on the vendor's available tooling. The cable shall be an AMP 206437-1 connector or exact equivalent with gold plated male pins.

9.3. All pins defined in Appendix I shall be available at terminal strip connections on the special function panel. The terminals shall be 6-32 x 1/4 inch minimum.

9.4. Preempt Requirements

9.4.1 When stated on the plans or purchase order the following Railroad preemption requirements shall be provided. All necessary circuitry in addition to those stated in this specification shall be included and wired within the cabinet. All necessary expansion and adjustment shall be made to the detector card rack to provide space for the additional cards.

9.4.2. A position within the card rack shall be provided for a two or four channel isolator card. These circuits shall be used to isolate the incoming preempt commands from the controller unit logic circuitry. The circuits shall be programmable to operate as a normally open-contact.

9.4.3. All necessary interconnection cables and mounting hardware shall be provided.

10.0 COMMUNICATIONS PANEL

10.1 In this bid or on enclosed plan sheets, a communications interconnect panel will be supplied as described in the following specifications.

10.2 A communications interconnect panel shall be provided that contains all interface circuits and wiring for Closed Loop Communication functions between the master controller, secondary (local) controllers and central monitoring station (computer).

10.3 The panel shall be constructed of 0.125 aluminum plate and shall contain non seams or joints of any kind. All edges and holes shall be smooth and free of burrs. The plane surfaces shall have smooth, uniform natural aluminum finish.

10.4 The panel shall have terminals and connections for a minimum of six (6) communication twisted pairs to be terminated. These terminals shall be 6-32 x 1/4 inch (minimum) binder head screws. Also located on the communications panel shall be one surface mounted Bell Systems RJ11 jack for connecting voice/phone communications. Also connected to the communications panel shall be one five (5) foot (minimum) RJ11 telecommunications (phone cable) cable for communication between controllers.

10.5 Surge suppressers shall be supplied for a minimum of one of the terminal pair connections and one for the voice/phone connection. These surge suppressers shall be EDCO Model SRA-6LC or approved equivalent for the terminal pair and an EDCO SRA-64C-150 or approved equivalent for the voice/phone communication and shall be mounted directly to the surface of the communications panel.

10.6 All unused pairs either terminated on terminal blocks or spared shall be grounded to the communications panel, which shall be securely mounted to the sidewall of the cabinet.

10.7 Termination and labeling of the six (6) pair communications cable will be in the following order.

TERMINAL	CONNECTION
DT4-1	Wire 1 of first pair
DT4-2	Wire 2 of first pair
DT4-3	Wire 1 of second pair
DT4-4	Wire 2 of second pair
DT4-5	Wire 1 of third pair
DT4-6	Wire 2 of third pair
DT4-7	Wire 1 of fourth pair
DT4-8	Wire 2 of fourth pair
DT4-9	Wire 1 of fifth pair
DT4-10	Wire 2 of fifth pair
DT4-11	Wire 1 of sixth pair
DT4-12	Wire 2 of sixth pair

10.8 All necessary communication cables and hardware shall be provided.

11.0 WIRING

11.1 All wiring within the cabinet shall be neat and routed such that opening and closing the door or raising or lowering of the back panel will not twist nor crimp the wiring. All wiring harnesses shall be braided, sheathed in nylon mesh sleeving, or made of PVC or polyethylene insulated jacked multi-wire cable only.

11.2 SIZE

11.2.1 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 of 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.

11.2.2 Conductors for AC Common shall be white. Conductors for equipment grounding shall be green. All other conductors shall be a color different than the foregoing.

11.3 A barrier terminal block with a minimum of three compression fitting terminals designed to accept up to a 4 AWG stranded wire shall be provided for connection of the AC power lines. The block shall be rated at 50 Amps minimum.

11.3.1 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.

11.3.2 Each controller input and output function shall be distinctly identified with no obstructions, at each terminal point in the cabinet, with both number and the function designation. The same identification must be used consistently on all the cabinet wiring diagrams.

11.3.3 Each load switch socket shall be identified by phase number and overlap number as applicable. No cabinet equipment, including the load switches themselves, may obstruct these identifications.

11.3.4 Each flash transfer base and power relay base shall be properly identified with no possible obstructions.

11.3.5 Each harness within the cabinet shall be distinctly identified by function on the connector end.

11.3.6 The flasher socket shall be distinctly identified with no possible obstructions.

11.3.7 All other sockets needed within the cabinet to fulfill the minimum requirements of these specifications, or attachments thereof, shall be distinctly identified.

11.4 All NEMA controller units and conflict monitor connector pin outs, except for NEMA designated "Spares", shall be made available on 6-32 x 1/4 (minimum) binder head screw terminals on the back panel.

11.5 The controller unit harness (A, B and/or C plugs) shall be long enough to reach any point 16 inches above the timer shelf. The conflict monitor harness and any required auxiliary harness shall reach 24 inches from the conflict monitor shelf.

11.6 Copper compression ground buses shall be provided for both the power supply neutral (common) and chassis ground. Each bus bar must provide a minimum of ten (10) unused terminals with 8-32 x 5/16 inch or larger set screws. The AC neutral and chassis ground buses shall be connected together with a minimum 10 AWG wire. The logic ground shall be isolated from the AC neutral and terminated on a logic ground bus designed to accept 20 number 20 AWG stranded wires. The ground shall consist of a compression bus bar connected to the back panel. The bus bar shall be connected to the cabinet by an insulated braided copper ground strap or 10 AWG insulated copper wire. The ground shall be bonded to the cabinet and shall not interfere with the lowering of the back panel.

11.7 A 20 Ampere, a 10 Ampere, and a 50-Ampere thermal type circuit breaker shall be mounted and wired in the cabinet. The 20-Ampere breaker shall protect the base light, trouble light, GFCI receptacle auxiliary receptacle 1 and 2, and fans. The 10 Ampere shall protect

the power circuitry that supplies the Timer, Conflict Monitor, and Card Rack. The 50-Ampere breaker shall protect the signal load circuits, flasher and loop detectors. The breakers shall be Square "D" QUO 120, QUO 110, and 150 Series or equivalent.

11.8 The circuit breakers shall be quipped with solderless connectors and installed on the right side wall (facing the cabinet), on a separate power panel containing cabinet surge suppresser, RFI suppresser and solid state bus relay. The breakers shall be easily accessible. The breakers shall be positioned so that the rating markings are visible.

11.9 A duplex GFCI receptacle shall be mounted and wired in the right side wall of the cabinet. This receptacle shall be wired on the load side of the 20 Amp circuit breaker.

11.10 The load side of the main circuit breaker shall be protected by a lightning surge suppresser model EDCO SHA-1250 or equal.

11.11 The suppresser ground connection shall be connected to the cabinet by means of a short, 10 AWG stranded wire. The ground shall be bonded to the cabinet.

11.12 The suppresser shall be connected to the line filter as recommended by the manufacturer. Number 10 AWG or larger wire shall be used for the connections to the suppresser, line filter and load switch bus.

11.13 A fluorescent light, with switch, shall be installed in the cabinet. This light shall be turned on when the cabinet door opened and turned off when the cabinet door is closed.

11.14 A radio frequency interference (RFI) suppresser shall be provided and installed on the load side of the signal circuit breaker and shall be protected by the surge protector. This filter shall be rated at 50 Amperes and shall provide a minimum attenuation of 50 decibels over the frequency range of 200 Kilohertz to 75 Megahertz.

11.15 Transient suppression devices shall be placed on the coil side of all relays in the cabinet. DC relay coils shall have, as a minimum, a reversed biased diode across the coil. AC relays shall have a RC Network suppresser across their coils.

11.16 Except where soldered, all wires shall be provided with lugs or other approved terminal fittings for attachment to binding post. Insulation parts and wire insulation shall be insulated for a minimum of 600 volts.

11.17 The outgoing traffic control signal circuits shall be of the same polarity as the line side of the power source.

11.18 A switch shall be provided on the inside face of the cabinet door that shall be labeled Test-Normal. When the switch is in the Normal position, call for flashing operation shall remove the power from the controller unit. When the switch is in the Test position, the call to flashing operation shall permit the controller unit to continue to run so that its operation can be observed.

11.19 A switch shall be provided near the Test-Normal switch to cause the controller unit and any auxiliary equipment, to stop timing. It shall be labeled "STOP TIME".

11.20 The cabinet shall be wired so that activation of the conflict monitor will cause the controller unit and any auxiliary equipment, to stop timing.

11.21 Conflict and manual flash shall be wired for all red.

11.22 The cabinet shall be designed and equipped with enough transfer relays (6 being minimum required) for the purchase to change any main street indications (movements 2,6 and 1,5) to amber for the conflict and/or manual flash operation on the face of the back panel or a side panel, using only simple tools.

11.23 Transfer relays shall be the plug-in type manufactured by Midtex (Part No. 136-62T3A1) or AEMCO (Part No. 136-4992), or equivalent. The relays shall have contacts a minimum of 3/8" diameter in size and shall be rated at a minimum of 30 Amps 120/240 VAC, 20 Amps 28 VDC.

11.24 A normally opened solid state relay rated at a minimum of 60 amps, control voltage 120 VAC (Crydom series 1 – A2375 or equal) shall be wired between the RIF filter output and the load switch power bus. The relay shall be controlled by the signal shutdown switch and the flash switch. Each solid state relay shall be covered with a clear plastic cover designed to install onto the relay with out special tools.

11.25 A clear, non breakable, ¼" Lexan insulating cover shall be used to shield all open connections on the power panel and not cover any switch, breaker levers, terminal blocks, bus bars or convenience outlet. The cover shall be secured in place with screw fasteners and be removable by hand or simple hand tools.

11.26 Two auxiliary duplex outlets shall be provided, one on the right interior side and one on the left interior side of the cabinet above the power panel and upper shelf. Power for this outlet shall be protected by the power panel surge protector.

12.0 DOCUMENTATION

12.1 Each cabinet shall be provided with the following documentation:

12.1.1 Three complete, accurate and fully legible cabinet wiring diagrams.

12.1.2 Complete parts list including names of vendors for parts not identified by universal part numbers such as JEDEC, RETMA or EAI.

13.0 TEST AND ACCEPTANCE OF CONTROLLER CABINET ASSEMBLY

13.1 The supplier shall be prepared to provide a certified test report from an independent laboratory indicating that the complete controller cabinet assembly meets the requirements of NEMA Standard Publication TS 1-1983, Part 2. The certification may be required at any point in the acceptance process.

14.0 GUARANTY

14.1 If it is normal trade practice for the manufacturer to furnish a guaranty for the work provided herein, the contractor/supplier shall turn this guaranty over to the purchaser for potential dealing with the guarantor. The extent of such guaranty will not be a factor in selecting the successful bidder.

APPENDIX I

INTERCONNECT/PREEMPT PANEL (57 PIN) CONNECTOR PIN ASSIGNMENTS

PIN	FUNCTION	PIN	FUNCTION
1	OFFSET 1 IN	33	EXTERNAL Alarm Input A (Option)
2	CYCLE 2 IN	34	EXTERNAL Alarm Input B (Option)
3	CYCLE 3 IN	35	CONTROLLER Interlock OUTPUT
4	FLASH IN	36	COMPUTER SELECT 1
5	OFFSET 2 IN	37	COMPUTER SELECT 2
6	OFFSET 3 IN	38	COMPUTER SELECT 3
7	INTERCONNECT FREE	39	SPECIAL FUNCTION 3 OUT
8	SPLIT 2 IN	40	SPECIAL FUNCTION 4 OUT
9	SPLIT 3 IN	41	SPECIAL FUNCTION 5 OUT
18	SPECIAL FUNCTION 2 OUT	42	CABINET INTERLOCK INPUT
19	COMPUTER ON-LINE	43	SPECIAL FUNCTION 1 OUT
12	FORCE 3 PHASE OPERATION	44	SPLIT 3 OUT
13	FORCE 4 PHASE OPERATION	45	SPLIT 2 OUT
14	SEPARATE INTERSECTIONS 2 X 4	46	INTERCONNECT FREE OUT
15	RESERVED	47	OFFSET 3 OUT
16	EXTERNAL RESYNC INPUT	48	OFFSET 2 OUT
17	MASTER SELECT	49	FLASH OUT
18	SYNC INPUT	50	CYCLE 3 OUT
19	PREEMPT 1 IN (R.R.)	51	CYCLE 2 OUT
20	PREEMPT 2 IN	52	OFFSET 1 OUT
21	PREEMPT 3 IN	53	+24 VOLTS DC
22	PREEMPT 4 IN	54	-24 VOLTS DC
23	PREEMPT 5 IN	55	CHASSIS GND
24	PREEMPT INTERLOCK/ACTIVE	56	RESERVED
25	DETECTOR 45P INPUT/ SYSDET 1	57	RESERVED
26	DETECTOR 25S INPUT/ SYSDET 2		
27	DETECTOR 18P INPUT/ SYSDET 3		
28	DETECTOR 16S INPUT/ SYSDET 4		
29	DETECTOR CIR. 2B/1P INPUT/ SYSDET 5		
30	DETECTOR CIR. 2A INPUT/ SYSDET 6		
31	DETECTOR CIR. 1B/2P INPUT/ SYSDET 7		
32	DETECTOR CIR. 1A INPUT/ SYSDET 8		

CORPORATE RESOLUTION

EXCERPT FROM MINUTES OF MEETING OF THE BOARD OF DIRECTORS OF

_____

INCORPORATED.

AT THE MEETING OF DIRECTORS OF _____
INCORPORATED, DULY NOTICED AND HELD ON _____,
A QUORUM BEING THERE PRESENT, ON MOTION DULY MADE AND SECONDED. IT WAS:

RESOLVED. THAT _____, BE AND IS HEREBY APPOINTED, CONSTITUTED AND DESIGNATED AS AGENT AND ATTORNEY-IN-FACT OF THE CORPORATION WITH FULL POWER AND AUTHORITY TO ACT ON BEHALF OF THIS CORPORATION IN ALL NEGOTIATIONS, BIDDING, CONCERNS AND TRANSACTIONS WITH THE PARISH OF JEFFERSON OR ANY OF ITS AGENCIES, DEPARTMENTS, EMPLOYEES OR AGENTS, INCLUDING BUT NOT LIMITED TO, THE EXECUTION OF ALL BIDS, PAPERS, DOCUMENTS, AFFIDAVITS, BONDS, SURETIES, CONTRACTS AND ACTS AND TO RECEIVE AND RECEIPT THEREFOR ALL PURCHASE ORDERS AND NOTICES ISSUED PURSUANT TO THE PROVISIONS OF ANY SUCH BID OR CONTRACT, THIS CORPORATION HEREBY RATIFYING, APPROVING, CONFIRMING, AND ACCEPTING EACH AND EVERY SUCH ACT PERFORMED BY SAID AGENT AND ATTORNEY-IN-FACT.

I HEREBY CERTIFY THE FOREGOING TO BE A TRUE AND CORRECT COPY OF AN EXCERPT OF THE MINUTES OF THE ABOVE DATED MEETING OF THE BOARD OF DIRECTORS OF SAID CORPORATION, AND THE SAME HAS NOT BEEN REVOKED OR RESCINDED.

_____
SECRETARY-TREASURER

_____
DATE