



## ADDENDUM #1

**To:** All Companies Interested in Submitting a Bid  
**From:** Rebecca Johnson, CPPB, Purchasing Agent  
**Bid:** LED Traffic Signal Modules – Bid #0709-023; Dated: August 21, 2009  
**Subject:** Addendum #1 (1 page)  
**Date:** August 27, 2009

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The following question and/or clarifications were asked by a bidder relative to the above-listed Request for Bid. This memo is sent for clarification to all companies to whom the bid was sent.

**Question:** Could you please send us the specifications for both the signal housing and LED modules?

**Answer:** See the Scope of Work on page 2 of the Request for Bid regarding the LED specification.

Pedestrian housing specifications are as follows:

A. General

1. The signal heads shall be complete with all fittings and brackets for a complete installation. Each signal shall consist of a main body assembly, optical units, necessary screws, wing nuts, eyebolts, etc., and shall be delivered completely assembled. All hardware including hinge pins, wing nuts, eye bolts or latch bolts shall be made of a solid non-corrosive metallic material to prevent seizure or corrosion by the elements. Each signal shall be smooth both inside and outside and shall contain no sharp fins or projections of any kind. The doors and visors shall be flat black. All metal parts shall be painted with one coat of primer and two coats of a high grade Federal Black enamel. All parts of the vehicle signals shall be in compliance with the latest ITE Report on Adjustable Face Vehicle Traffic Control Signal Heads.
2. The electrical and optical system of the signal head shall be designed to operate on 115 volt, single phase, 60-Hertz alternating current.
3. All exterior surfaces shall be black.
4. Main Body Assembly of the signal unit shall consist of one or more polycarbonate sections have integral cast serrations so when assembled with the proper brackets they may be adjusted in increments and locked securely to prevent moving. The sections shall be designed so that when assembled they interlock with one another. All joints between sections shall be waterproof. The sections shall be held firmly together by locknuts or other means approved by the Engineer. Any open end on an assembled signal face housing shall be plugged with an ornament cap and gasket.

B. Doors and Optical Units

1. The doors shall be made of polycarbonate. Each door shall be of the hinged type and shall be held closed by a wing nut or other approved means. The hinge pins shall be designed so that the doors

may be easily removed and reinstalled without the use of special tools. Each door shall have a polycarbonate visor designed to shield each lens. The inside of each visor shall be flat black.

2. The optical system shall be so designed as to prevent any objectionable reflection of sunrays even at times of the day when the sun may shine directly into the lens. When the door of the optical unit is closed, all joints in the assembly between the interior and exterior of the reflector shall be closed against suitable gaskets in order that the units may be dust tight. Between the door and the lens, there shall be a neoprene gasket securely fastened around the outer surface of the lens. The gasket shall be engaged by the rim of the reflector holder when the door is closed, to render the union between the reflector holder and the door assembly dust tight.
3. The reflector shall be parabolic in design and made of specular Alzak aluminum.
4. The reflector holder shall be of non-ferrous or rust proofed metal and designed to separately support the reflector and socket in proper relation to the lens. The reflector holder shall be hinged to the left-hand side of the signal body when viewed from the front. On the right-hand side, the reflector holder shall be held in place by a spring catch or other quickly releasable means.
5. Both the hinge device and the spring catch or equivalent shall be of a flexible nature which will permit the reflector holder to be pushed inwardly for at least one-sixteenth of an inch and to align itself correctly with the lens when the door of the optical unit is closed and pressed against the rim of the reflector holder. By such means, the joint between the reflector holder and the lens shall be rendered dust-tight. It shall not be necessary to remove any screws or nuts in order to swing the reflector holder out of the body section to obtain access to the light socket.
6. The socket shall be arranged with a lamp grip so it will be impossible for the lamp to be loosened by vibration.
7. The wire entrance fitting shall be made of malleable iron or other approved material equipped with a standard 1-1/2" pipe fitting for attachment to the signal head. It shall be provided with weatherproofing means so that when it is attached to the top of the signal a weatherproof assembly results. Positive locking means shall be provided so that the signal cannot loosen from the fitting. The fitting shall be provided with an insulation bushing at the point where wires enter. The fitting shall be provided with self-locking features to prevent the signal head from turning out of directional adjustment in a strong wind. It shall be painted in color to match that of the signal.

C. Vehicle Signals. In addition to meeting the requirements of Section A., Vehicle Signals shall meet the following requirements:

1. All signal vehicle indications shall be Light Emitting Diode (LED) Vehicle Signal Modules.
2. All lenses shall be prismatic and long range. The lenses shall be 12 inches in diameter. All lenses shall be made of vandal resistant polycarbonate or acrylic plastic free from bubbles and flaws. The lenses shall meet the light transmittivity and chromaticity standards established by the ITE Standard for Adjustable Face Vehicle Traffic Control Signal Heads.
3. The lamp socket shall have a 3" light center length. Each socket shall be provided with one black lead from the socket and one white lead from the shell. Lead shall be of 18 gauge, stranded wire per MIL-W-76A Specifications.
4. Visors shall be of the tunnel type not less than eight inches in length and shall be designed in a manner such that the visor may be easily installed or removed from the signal head.
5. A terminal block shall be mounted in the back of the second section of the signal head. The terminal blocks shall be secured at both ends.

6. Signals shall be shipped completely assembled with tunnel visors attached to the signal door.

D. Mounting Assemblies

1. Mounting assemblies shall consist of 1-1/2 inch standard pipe and fittings. All members shall be so fabricated such that they provide plumb, symmetrical arrangement, and securely fabricated assemblies. Construction shall be such that all conductors are concealed within assemblies. Cable guides shall be used to support and protect conductors entering assembly through poles. All threads shall be coated with rust preventive paint during assembly.
2. Support brackets, trunnions, and fittings shall be made of cast aluminum, steel, or cast iron. Bracket parts except for stainless steel parts shall be given one prime coat of metal primer and two coats of high quality black exterior enamel.
3. Mounting assemblies shall be watertight and all open segments of the fittings shall be plugged with an ornamental plug and a gasket.
4. Mast arm mounting brackets shall be furnished with a completely adjustable stainless steel cable around arm, malleable clamp casting, vertical support tube, top and bottom signal head support with set screws, bolts, hole with rubber grommet in mast arm, and all incidentals necessary for complete installation. Bracket shall be Astro-brac or approved equal.
5. Brackets for mounting the signal head on a pedestal shall provide support for both the top and bottom of the signal head.

E. Each signal shall be packed or crated separate and complete by itself. The outside of each package or crate shall clearly show the manufacturer, type, catalog number, Purchaser purchase order number and project. Mounting attachments may be shipped separate from the signals, but the boxes or crates shall be marked clearly with the same information as the signals. Mounting attachments of different types shall not be mixed in one box or crate.

F. Pedestrian Signals: In addition to meeting the requirements of Section A., Pedestrian Signals shall meet the following requirements:

1. Pedestrian signals shall consist of a single unit, nominal 16" x 18", with housing and mounting attachments. The left half shall display a "HAND" symbol and a "WALKING PERSON" symbol. The right half shall display clearance interval countdown numerals. The signals shall operate with light emitting diode (LED) lamps that meet or exceed ITE PTCSI-2 LED Pedestrian Signal Specifications.
2. The lenses shall be made of vandal resistant polycarbonate or acrylic plastic. Unless otherwise specified on the Plan Documents, the symbols on these lenses shall be at least 9 inches high and shall be designed to produce a maximum legibility both day and night. The "HAND" symbol shall be Lunar White and the "WALKING PERSON" symbol and numerals shall be Portland Orange. The background or field around both messages shall be black.

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All addenda that you receive shall become a part of the contract documents and shall be acknowledged and dated on the bottom of the Signature Page (page 5). The deadline for bids is Tuesday, September 1, 2009 at 2:30 p.m. CDT.