

APPENDIX A
Description of Materials, Supplies, Equipment and Bid Price

Contractor _____

SCHEDULE OF ITEMS

Pay Item	Description	Quantity	Unit Price
890.01	Special Work Order #1 - Retrofit LED For High Mast Tower Lighting	350 Ea	_____
			Total Price _____

Description

The Retrofit LED High Mast Tower Lighting shall meet the material specification section of this appendix.

Delivery The Contractor shall deliver the materials to the MaineDOT Sign Shop at 127 Capitol Street in Augusta, State House Station 86. The Contractor shall notify MaineDOT, Stephen Landry, 207-557-0347 a minimum of one week prior to delivery for delivery coordination. Alternative contacts are: Robert Rooney, 287-2846. The Contractor shall deliver the materials only during the following times: Monday through Friday, 7:00 AM through 3:30 PM except for deliveries may not be made on holidays, or government closure days. The Department will not off-load the materials at the delivery site.

Contract Administrator The contract administrator for this contract will be:

Name: Stephen Landry
Title: Assistant State Traffic Engineer
Address: Maine Department of Transportation
16 State House Station Road , Augusta, ME 04333-0016
Phone: 207-557-0347

Invoices and Payments The Contractor shall submit an itemized bill to the Department for materials following delivery for approval and payment. Invoices shall include the following minimum information:

Contractor name, address & Contract Number
Invoice Date & Number
Dates of Delivery

The Department will pay based upon prices bid and the invoices provided and accepted.

No such payment will be made if, in the judgment of the Department, the Materials are not in accordance with the provisions of the Contract.

The Acceptance by the Contractor of the final payment, as evidenced by cashing of the final payment check, constitutes a release to the Department from all claims and liability under the Contract. Upon Final Acceptance, the Contractor is released from further obligation, except for warranty obligations provided for in this Contract.

Payments to the Contractor shall be full compensation for furnishing all labor, equipment, materials, services, and incidentals used to supply the materials under the Contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of any kind arising from the nature or prosecution of the Work.

No payments due the Contractor will be adjusted for inflation. No interest shall be due and payable on any payment due the Contractor.

Dispute Resolution If, in the performance of this Agreement, there arises a dispute between the Contractor and MaineDOT that cannot be resolved by the parties to the Contract, the parties may agree to submit the dispute to non-binding Alternate Dispute Resolution. All disputes shall be governed by Maine law, and all actions shall be filed in the Kennebec Superior Court, in Augusta Maine.

Conformity with Standards Unless otherwise provided in the contract, all materials shall conform to the following standards, as applicable.

- A. MDOT
- B. AASHTO
- C. ASTM
- D. AREMA
- E. Standard conditions and special conditions contained in any permit
- F. Manual on Uniform Traffic Control Devices (MUTCD)
- G. American with Disabilities Act (ADA)

Material Quality Materials and manufactured products shall be new unless otherwise specified, free from defect, and in conformity with the contract. If there is no applicable standard set forth in this Contract for a particular item, then the item shall be in accordance with industry standards prevailing at the time of bid. The Department has the authority to inspect all Materials and every detail of the Work. The Contractor shall provide the Department with safe access to all portions of the Work in Conformity with all applicable OSHA requirements. The Contractor shall furnish the Department with all information and assistance required to make a detailed inspection.

When material is fabricated or treated with another material or where any combination of materials is assembled to form a finished product, any or all of which are covered by specifications, the Department may reject the finished product if any of the components do not comply with the specifications. The Department may reject materials not con-forming to the Specifications at any time.

Material Description

The vendor shall supply and deliver 390+/- watt Light Emitting Diode (LED) fixtures to retrofit or replace existing 90 foot tower lights. The light fixtures shall be LED's with the capability to run for 5 hours at full power and to reduce to fifty percent power after 5 hours of operation until turned off by timer or photocell. The LED shall have a minimum of 100,000 hours and have a ten year warranty on the fixture and led modules.

Light color temperature shall be 5000-5500 k. Each fixture/retrofit shall have a minimum of at least 3 separate light sources. Lenses or refractors shall be guaranteed not to yellow for a period of 20 years. Fixtures/retrofits shall be IES full cutoff. Lm 80 test data shall be supplied in the bid package. Dimming may be waived if the overall wattage per fixture/retrofit is 295 watts or less.

The LED fixtures/retrofit High mast lighting must be equipped with a 480 volt Smart Driver. The Smart Driver shall provide current regulation for individual light clusters. Current accuracy over the LED operating temperature range must be +/- 3%. It shall have over temperature protection, shut down at critical temperature and resume operation temperature. Under voltage lockout for power off or brownout.

Dimmed LED fixtures/retrofit shall have the capability to select 3 wattages on the PCB Board and the ability to switch in the field. LED fixtures/retrofit junction Temperatures must be below 60 degrees Celsius. The LED Retrofit shall be capable of normal operations from -40 degrees Celsius to 85 degrees Celsius. Power supply/driver shall operate at a minimum of 87%, power supply shall operate between -20 degrees Celsius and 50 degrees Celsius. Constant voltage is required. Minimum light efficiency of 75 Lm/W shall be met.

Minimum light levels shall be at least .6 ft. candle or 6.45 lux measured at 100 feet from the base of the pole in any direction, the lighting must be uniform with no more than a 3 to 1 ratio The lux/ foot candle level shall be tested by supplying 3 fixtures to Maine Dot within 2 weeks of contract award, should the fixture not meet the lux foot candle output the contract will be terminated and the next lowest bid vendor will be selected. The originally selected bidder will not be entitled to additional compensation due to termination. This process shall continue until the lighting level is met.

The line side of each fixture/ retrofit must have surge suppression that meets or exceeds ANSI/IEEE C62.41-2002 Category C-

Led/ retrofits fixtures shall have a lamp lumen depreciation of no more than (LLD) 15% over 52,000 hours, 12 years

Led retrofits clusters shall be center hung by 3 foot 3/8 inch threaded rod and supplied with a 4 foot 3/16 inch stainless steel safety cable. Led light clusters shall be arranged to fit in a 15 inch round by 13 inch deep housing and shall contain at least 4 separate power supplies and light assemblies. All screws shall be stainless steel, and power connection leads shall be a minimum of 2 feet. Each and all led assemblies in the cluster shall be dimmable by dip switch selection Any external splices or

connections on the assembly shall be made with mechanical crimp connections and be arranged as to not retain water

Method of Measurement. This item shall paid for by each individual unit.

Method of Payment. Payment for this item shall be full compensation for furnishing, delivery and off loading of the LED fixtures to State House Station 86 on Capitol St, Augusta, ME 04330.

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
890.01	Special Work Order #1 - Retrofit LED for High Mast Tower Lighting	EA