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## Special Provision, Section 634 : Highway Lighting (Light Fixtures with LED Luminaires for Multi-Use Path), September 8, 2011

Maine Department of Transportation

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SPECIAL PROVISION  
SECTION 634  
HIGHWAY LIGHTING  
(Light Fixtures with LED Luminaires for Multi-Use Path)

Description. The Design-Builder shall furnish and install all materials and equipment required for a complete, functioning and accepted lighting system for the Multi-Use Path with light fixtures with light emitting diode (LED) luminaires, as shown on the plans and as directed.

General. Light fixtures with LED luminaires to be installed for lighting of the multi-use path on this project shall be as manufactured by:

Holophane  
Kim  
Rab

All materials and installation requirements for light fixtures with LED luminaire shall comply with Section 634 of the Standard Specifications, except as modified in this Special Provision.

Lighting System Criteria. The lighting systems furnished and installed shall provide an average maintained illuminance of 0.6 to 1.4 fc, a maximum to minimum illuminance ratio of 10:1 or less, and an average to minimum illuminance uniformity ratio of 3:1 or less. Total light loss factor (LLF) to be used in analysis of LED fixtures shall be 50,000 hour L70 lumen depreciation of .86 at 25 degree C and .9 dirt depreciation for no less than .77 total light loss factor.

Multi-Use Path Light Fixtures. Light fixtures for the Multi-Use Path may be either fixtures mounted on low-height poles on the parapet, fixtures integral with the railing system, or a combination of these mounting types. Maximum mounting height shall be 12 feet.

Luminaires. Luminaires for Multi-Use Path lighting shall be LED fixtures as manufactured by the companies listed above or approved equal that will provide levels and distribution of illumination equal to these criteria. Luminaires shall be full cut-off and shall have be maximum of 70 watts for each unit. Luminaires shall be made of metal; no fiberglass or plastic will be allowed. Luminaires shall be rated to provide a minimum operating life of 50,000 L70 operating hours and shall have a Lumen Depreciation Value of not less than 0.86 at an Ambient Operating Temperature of 25 degrees C. Luminaires shall be UL listed for 40 degree C ambient. LEDs shall be contained in a sealed IP rated optical compartment to minimize dirt depreciation. If the use of other LED fixtures is proposed, the Design-Builder shall provide photometric contour mapping and lighting statistical analysis documenting that the alternative LED fixtures will provide comparable levels and distribution of illumination and will meet the requirements. Non-LED luminaires will not be allowed for the Multi-Use Path.