

## **14.0 Lighting, Electrical, Signing, and Striping**

### **14.1 Design Requirements**

#### **14.1.1 Lighting/Electrical**

The Contractor shall prepare electrical designs and plans for all areas on the Project. The electrical designs shall include the electrical and power requirements for the Fixed Fire Suppression System as described in Book 2, Section 19. The Contractor shall coordinate with the electrical utility company, Xcel Energy, to determine electric power requirements for the Project and to develop the Project electrical and lighting design and construction requirements.

The Contractor shall obtain approval of the power service design from the power service provider and coordinate and meet all requirements as specified by the power service provider for the complete and operational power service to all required locations.

The Contractor shall be responsible for the coordination of power source work to be performed by Xcel Energy. The Contractor shall contact the Xcel Energy Builder’s Call Line at 1-800-628-2121 to request, and process to completion, the required coordination to establish the power sources. The Contractor shall perform all work necessary to maintain existing or establish new power sources for any affected electrical device. All cost charges from the power service provider, and all necessary materials, including meter (if required), labor, and coordination required to maintain existing or establish new power sources shall be included in the Work.

The Contractor shall design and construct signing, pavement marking, electrical, and lighting elements in accordance with the requirements of the standards listed in Table 14-1 as appropriate for the jurisdictional ownership, oversight, and approval of the Work.

**Table 14-1: Lighting/Electrical Standards**

	<b>Author</b>	<b>Title</b>
1	CDOT	Special Provisions included in Section 14
2	CDOT	<i>Standard Specifications for Road and Bridge Construction Section 613</i>
3	NEC	<i>210 – Branch Circuits</i>
4	NEC	<i>250 – Grounding and Bonding</i>
5	NEC	<i>695 – Fire Pumps</i>
6	NEC	<i>760 – Fire Alarm Signaling Systems</i>
7	CDOT	<i>Sign Design Manual – December 18, 2012</i>
8	FHWA	<i>Manual on Uniform Traffic Control Devices (Current Edition)</i>
9	AASHTO	<i>A Policy on Geometric Design of Highways and Streets</i>
10	AASHTO	<i>Roadside Design Guide</i>
11	AASHTO	<i>Standard Specifications for Highway Bridges, 17<sup>th</sup> Edition</i>

**Book 2 Section 14: Lighting, Electrical, Signing, and Striping**

**14.1.2 Permanent Signing**

**14.1.2.1 Signing Design**

If required, the Contractor shall prepare signing designs and plans for the Project area. These plans shall include all necessary guide, warning, supplemental, and regulatory signs, and additions, removals, or modifications to existing signs and appurtenances. Plans shall also include a preliminary layout of signs.

Signing design shall comply with the requirements of the most current publications of the Standard Specifications, M & S Standard Plans, Sign Design Manual, and the FHWA Manual for Uniform Traffic Control Devices (MUTCD).

**1.1.1 Permanent Pavement Marking**

**14.1.2.2 Pavement Marking Design**

The Contractor shall prepare pavement marking designs and plans for roads affected by the construction of the Project. These plans shall include all striping required for center lines, edge lines, lane lines, gore areas, lane drops, merging lanes, transition lanes, arrows, legends, symbols, object markings, delineation, and other striping, as well as any modifications required for transitions to existing pavement markings.

Pavement marking design for CDOT facilities shall comply with the requirements of the Standard Specifications, M&S Standard Plans, and the MUTCD. The requirements of the MUTCD shall include both the standard requirements and the guidance recommendations of the manual.

**14.2 Deliverables**

At a minimum, the Contractor shall submit the following to CDOT for Review, Approval, and/or Acceptance:

**Table 14-2: Deliverables by the Contractor**

<b>Deliverable</b>	<b>Review, Acceptance, or Approval</b>	<b>Schedule</b>
Sign layouts for all special signs of any size	Approval	90 days prior to issuance of Released for Construction Documents

All deliverables shall also conform to the requirements of Book 2, Section 3.