

## **TEO LIGHTING COMMITTEE MEETING MINUTES**

### **August 9th, 2017**

#### **Twin Davit Detail**

It was brought to the committee's attention that the radius chart on the Twin Davit Detail plan sheet does not apply to twin davit poles provided by Millerbernd. The proposal to the committee was to remove the chart from the plan sheet and add it in the SL Provisions to the appropriate poles. The committee agreed to the recommendation.

#### **Handhole**

Ben Osemenan reported there is a handhole by JDT Concepts on the MnDOT Approved Products List (APL). He would like to see a second manufacturer's product on the APL as well. John Pedersen mentioned that contractors do not like the extension ring on the approved handhole. This ring is a sacrificial component designed to be replaced with another extension ring in the event the top of the handhole gets damaged.

#### **Available Fault Current Calculations**

Jim Deans brought up the fact that available fault current stickers are still not being displayed on lighting service cabinets as required by the NEC. This sticker informs people working on the cabinet of the available fault current. There was additional discussion about requiring the contractor to place a label stating the specific level of PPE required to service each individual service cabinet when its energized. The sticker shall include Hazard Risk Category, Incident Energy in cal/cm<sup>2</sup> at 18", Arc Flash Boundary ex. 42", and include what PPE is required. The Form (handout labeled 28-SL) needs to be completed with the system, meter address, transformer size in KVA, length of conductors and then saved in TAMS. The required label should also be placed on the dead front door of the cabinet. Service cabinet specifications require orange and white stickers "Warning Arc Flash Hazard" be on the outside of the door and the dead front of the door.

#### **LED High Mast**

Sue Zarling plans to send a tower specification out for review and continue the process of finding a suitable LED high mast fixture for the APL. Since the meeting, revised draft specifications for both symmetrical and asymmetrical high mast luminaires have been distributed to manufacturers.

#### **Light Foundation Design P**

Alex has begun working on the process to submit the Design P Foundation to become a Standard Plate. Some changes will be required before Light Foundation Design P can become a Standard Plate. There will also be changes to the rest of the signal and lighting foundations in the near future. These changes are necessary to meet AASHTO's standard reinforcement requirements and design procedures for foundations.

### **Neutral Connection in Light Poles**

The issue of losing THE neutral connection when light poles are knocked down or loose connections of neutral conductors under wire splice conductor blocks may be contributing to LED luminaires over-voltage failures. To potentially help reduce over-voltage failures it was proposed to the committee to require split bolts be used on neutral conductor splice terminations instead of wire splice connector blocks. General consensus by the committee is to require split bolts be used on neutral splice terminations in light poles. Specification language will be added in the SL Provisions to require only split bolts be used on neutral splice terminations in light poles.

### **Ground Rods in Pre-Cast Light Foundations**

Contractors are not always using the required (15 feet) ground rod for pre-cast light foundations. Some contractors are cutting the rods in half or ordering 10 foot rods instead. This may be because of the difficulty of driving in a 15 foot long ground rod. The general consensus by the committee is to reduce the required 15 foot rod length to 10 feet for pre-cast light foundations only. Cast-in-place light foundations, barrier pole foundations and equipment pads will continue to require 15 foot ground rods. Specification language will be added in the SL Provisions allowing the use of 10 foot ground rods in pre-cast light foundations.

### **Rodent Intrusion Barrier**

PVC rodent intrusion barrier made by Halek Solutions was introduced to the committee. It was recently approved for use in signal transformer bases at the last TEO Signal Committee meeting. The rodent intrusion barrier provides another option to stainless steel woven wire mesh cloth. There was a general consensus by the committee to approve the use of this barrier in double nut connection roadway light poles with a 10 3/4" base plate opening. It will be placed on MnDOT's APL with a general product specification. Specification language will be added in the SL Provisions allowing the use on construction projects of an approved rodent intrusion barrier found on MnDOT's APL.

### **Round Robin**

Jim Deans reported that 47 lights were broken by a semi-trailer driving through the Lowry Hill Tunnel. 84 total lights have been broken in the Lowry Hill Tunnel.

Jerry Kotzenmacher said he had replaced 60 outdoor 150 watt HPS lamps with 100 watt LED screw in bulbs and saw a significant savings in energy costs. He asked if the same could be done to existing HPS luminaires on MnDOT's roadways. Committee members were not aware of a product of this type that would meet the current light levels produced by existing HPS roadway fixtures.

Clint McCullough reported the UF cable used in light poles may have a soy coating that might be attracting rodents to chew on. CO Lighting and Signals will do further research.

Adam Wellner inquired about the placement of junction boxes on bridges. The bridge office prefers junction boxes be placed on the backside of a bridge concrete barrier railing because they have concerns with plow/vehicle hits and corrosion. Adam had a project where there was no sidewalk (making access difficult). When junction boxes are located on the outside of the concrete rail, maintenance must work over water or traffic, and in some cases, may need to use a bridge snooper to access the junction boxes. Adam recommended the junction boxes be installed on the inside face of the bridge barrier railing for easier access. CO Signals and Lighting Unit will contact CO Bridge to further discuss this issue.

Alex also brought up the drainage problem in conduits located in the bridge. With no allowance for drainage in these conduits, the water pools and causes conduit to corrode, and bridge concrete barriers and deck to spall. John Hoivik recently sent pictures to CO Lighting & Signals showing examples of this problem on a bridge in District 1. Requirements for installing conduit in bridges will need to be reviewed to correct this problem. CO Signals and Lighting Unit will contact CO Bridge to further discuss this issue.