State of Illinois
Department of Transportation

CONSTRUCTION INSPECTOR'S CHECKLIST FOR ROADWAY LIGHTING (Not intended for use in District 1)

While it is not required, this checklist has been prepared to provide the field inspector a summary of easy-to read step-by-step requirements relative to the proper construction of roadway lighting and promote the proper installation of roadway lighting. The following questions/instructions are based on information found in the Standard Specifications, Supplemental Specifications, Special Provisions, Plans, Highway Standards, and of the Construction Manual. This document references the April 1, 2016 Standard Specifications for Road and Bridge Construction, unless noted otherwise.

1. Shop Drawings and Luminaire Testing

a. Verify all appropriate shop drawings, certifications, and luminaire test reports have been sent to the Central Bureau of Design and Environment Electrical and Mechanical Unit for review (Art. 801.05 & 801.06 and 821.03).

b. Check whether luminaire testing is required for this project (Art. 1067.01(h)). Luminaire test reports must be approved before luminaires are shipped to the jobsite. Luminaire testing must be done as early as possible after shop drawings are approved in order to avoid construction delays (as this can be a lengthy process).

2. Service Disconnect

a. Is the operating handle of the fused disconnect lockable in both the "on" and "off" positions (Art. 1086.01(a)(3))? (The enclosure may need to be field drilled or a different switch may need to be supplied.)

Unacceptable
When provisions are not provided by the manufacturer, a hole must be drilled and a padlock shall be provided.

Acceptable
Enclosures shall be provided with provisions to lock the external handle in both the open and closed position.

b. Are all neutral conductors and equipment grounding conductors connected as shown in Figure 1 below (Art. 801.04 and Hwy. Stds. 825001 through 826006)?

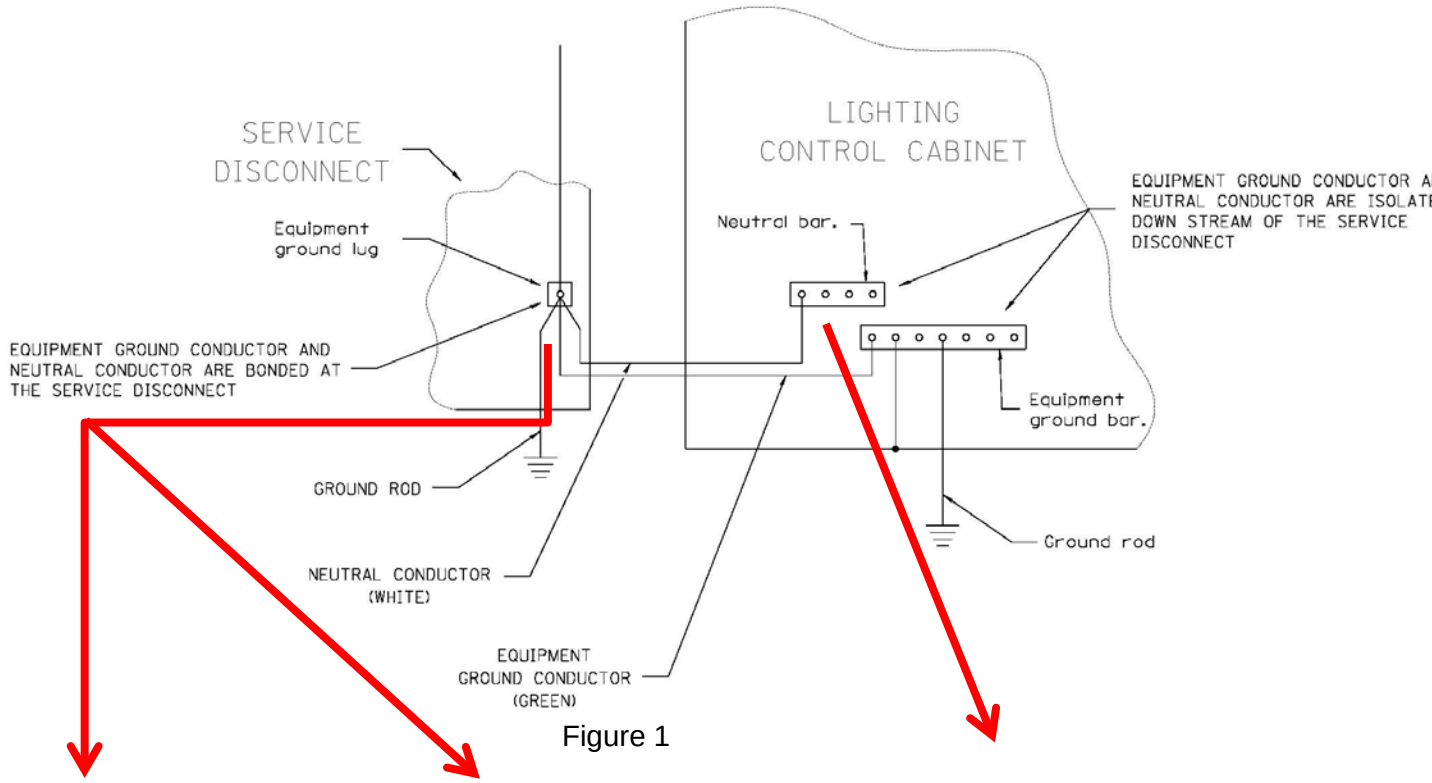
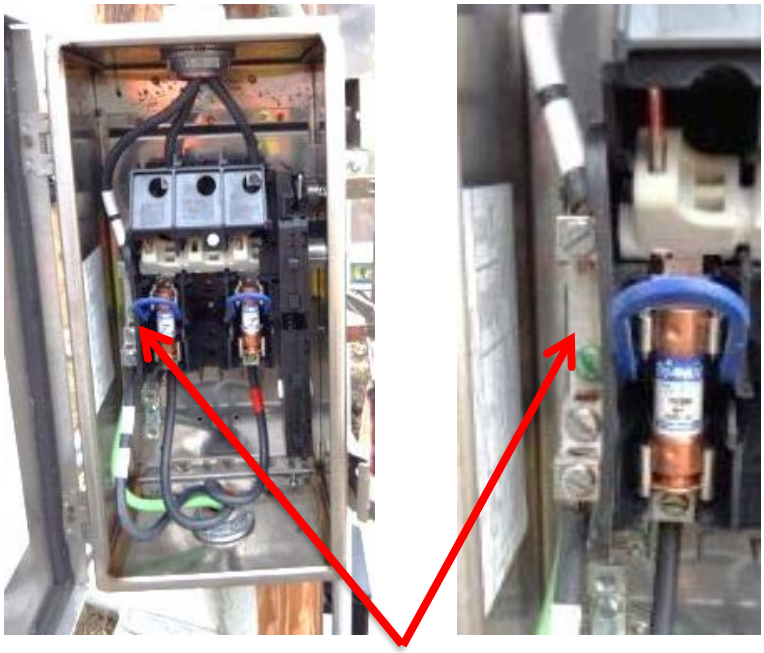
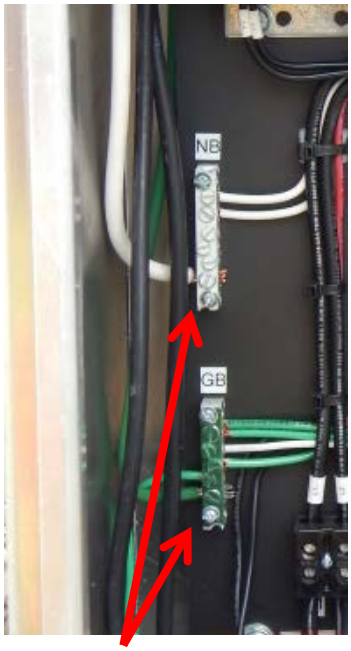


Figure 1



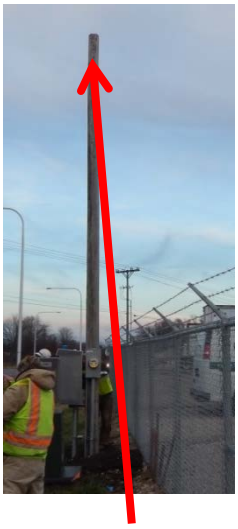


<u>Acceptable</u>
Neutral and ground are bonded at the service disconnect and originate at the same point (on same lug).

<u>Acceptable</u>
Neutral and ground busses are isolated in the lighting controller.

c. For aerial service; have downguys and anchors been installed on service poles to offset wire tension (Art. 804.04, 830.03(c), 1086.01(a)(1) and Hwy. Stds. 825001 through 826006)?

d. For underground service; have standard 12ft service poles been used and set 6ft deep? If longer poles have been used, have they been cut off 6ft above the ground line with the cut surface treated to prevent decay (Art. 804.04, 1086.01(a) and Hwy. Stds. 825001 through 826006)?



Unacceptable

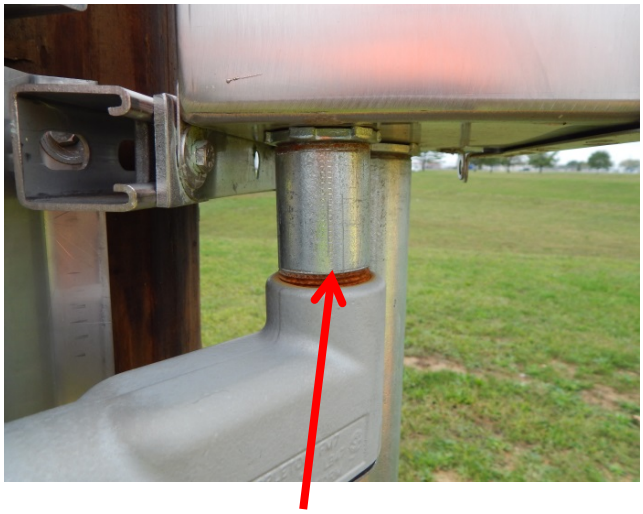
Acceptable
Pole should be cut off 6 ft above ground and the surface should be treated to prevent decay.

e. With the exception of risers for the bare copper ground, is galvanized steel “U-Guard” provided for all unprotected PVC conduit risers (Art. 804.04)?

Unacceptable
PVC conduit risers are susceptible to damage from mowing operations.

Acceptable
Galvanized steel “U-Guard” can provide some physical protection from these operations.

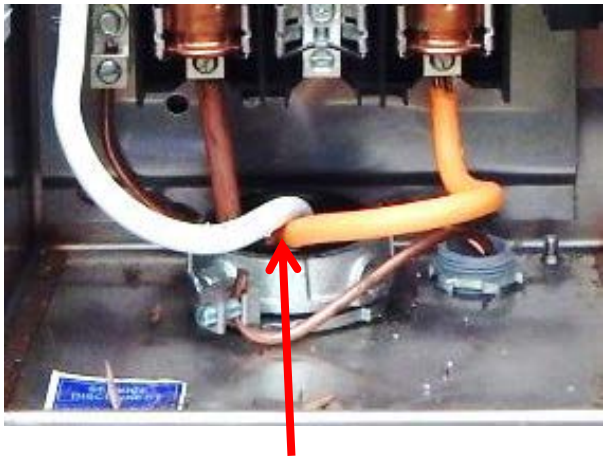
f. Have threads on rigid galvanized conductor (RGC) rusted? Rusted threads should be cleaned and coated with cold galvanizing compound according to Art. 810.05.



Unacceptable
Rusted Threads will continue to decay if not corrected.

Acceptable
RGC with rusted threads should be cleaned and treated with galvanizing compound or replaced.

g. Is duct seal installed in all conduit entries in the enclosure to keep out rodents and insects?



Unacceptable
All conduit entries should be sealed from rodent entry.

Acceptable
Pliable waterproof material such as duct seal should be applied to all conduit entries.

3. Lighting Controller

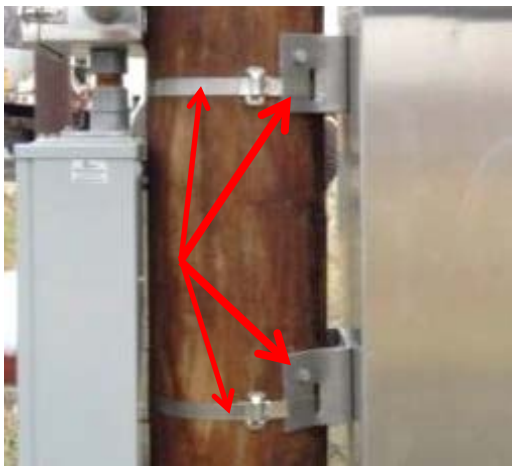
a. Is a concrete work pad installed in front of the lighting controller (Art. 825.03 and 1068.01(b))?

Unacceptable
A concrete work pad must be provided in front of the lighting controller.

Acceptable

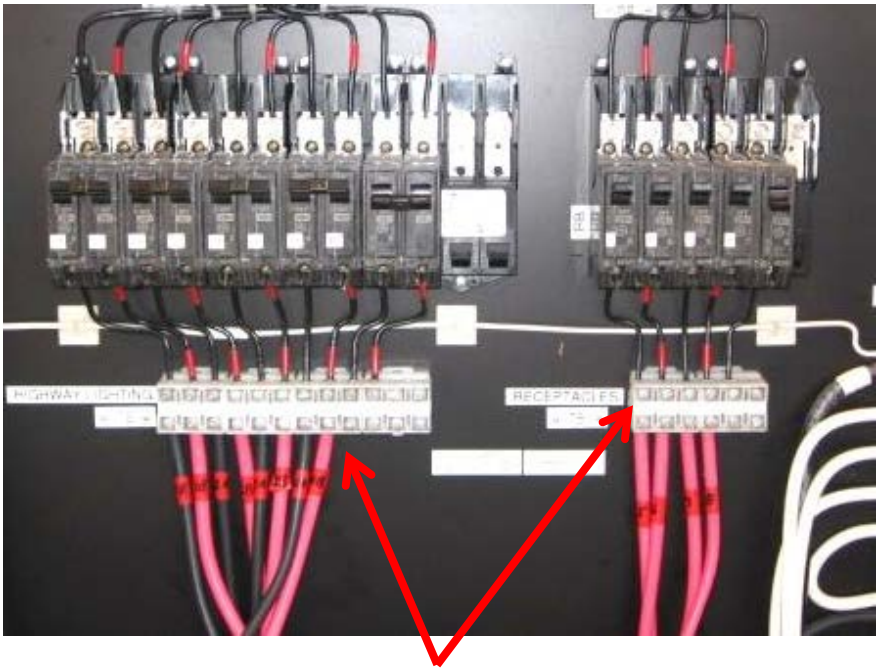
b. Is an aluminum bracket used to attach the controller to the pole and SS banding inserted through the brackets (Art. 825.03 and Hwy. Stds. 825001 through 825006)?

Unacceptable
Pole mounted lighting controllers should have a stainless steel band attached through the controller cabinet mounting bracket to secure the cabinet to the pole.



Acceptable
Lag bolts and stainless steel band through the mounting bracket provides a more secure connection to the pole.

c. Are terminal blocks provided for all branch circuit breakers and branch circuit conductors within the lighting controller (Art. 1068.01(f) and Hwy. Stds. 825001 through 826006)?

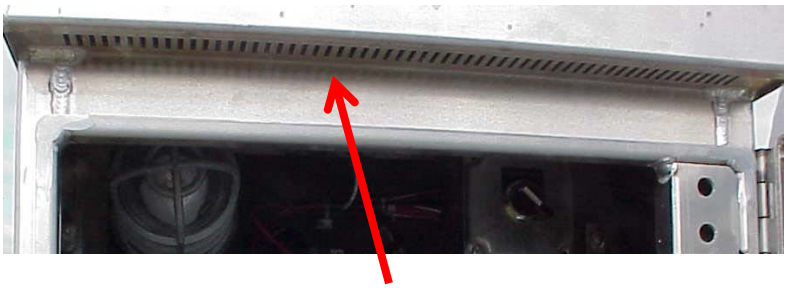


Acceptable
Terminal blocks should be provided so the branch circuit conductors do not terminate on the bottom of the branch breakers.

d. Are 2 spare branch circuit breakers provided in all lighting controllers with the exception of small pole mounted controllers (Art. 1068.01(e)(3) and Hwy. Stds. 825006 through 826006)?

e. Is the cabinet equipped with a linkage arm to hold the door open and does the door open and close easily (Art. 1068.01(b))?

f. Does the lighting controller have an air vent in the top of the cabinet (Art. 1068.01(b) and Hwy. Stds. 825001 through 826006)? (Air vents are required for all lighting controllers with the exception of small pole mounted controllers.)



Acceptable
Under eave vents as shown or “T” vents on top of smaller cabinets allow airflow through the cabinet.

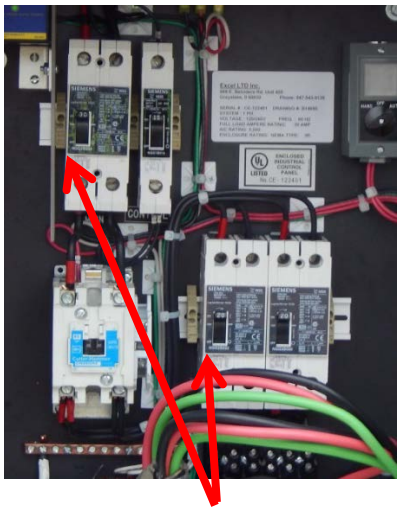
g. Does the lighting controller have a stainless steel engraved nameplate on the door reading “LIGHTING CONTROLLER” or “LIGHTING” (Art. 1068.01(d) and Hwy. Stds. 825001 through 826006)?

Acceptable

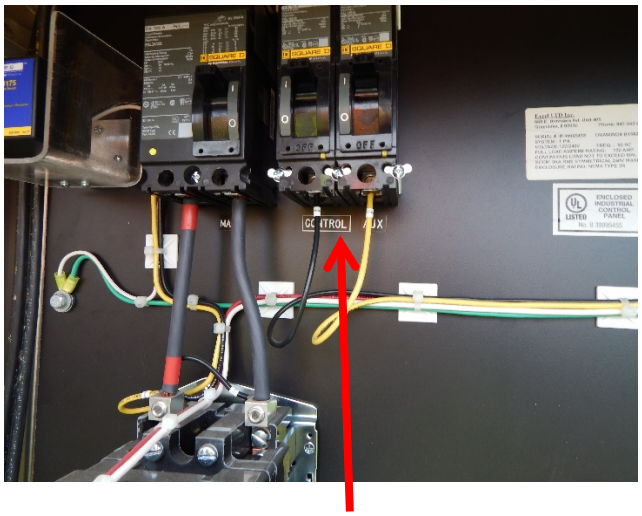
h. Is the surge arrester within the lighting controller mounted as far from other components as possible (Art. 1068.01(e)(8))?

i. Are copies of the as-built lighting plans and circuit diagrams updated with any field changes stored in a weather proof pouch attached to the inside of the lighting controller door (Art. 1068.01(b) and Hwy. Stds. 825001 through 826006)?

j. Are the circuit breakers of the bolt-on type (Art. 1068.01(e)(3))? (DIN rail mounted components are not acceptable.)



Unacceptable
DIN rail mounted components (slide onto a rail) are not acceptable.

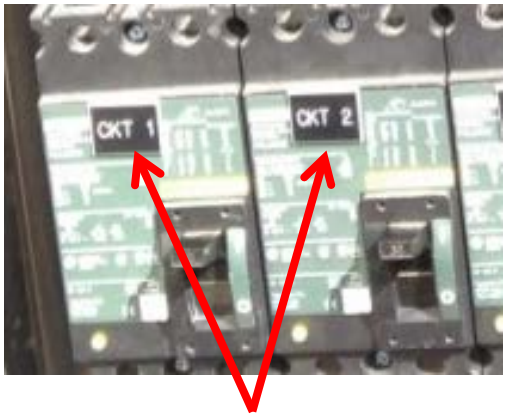


Acceptable
Components shall be bolt on type.

k. Are all branch circuit designations and all internal components within the lighting controller labeled with engraved two color plastic name plates (Art. 1068.01(f))?

Unacceptable

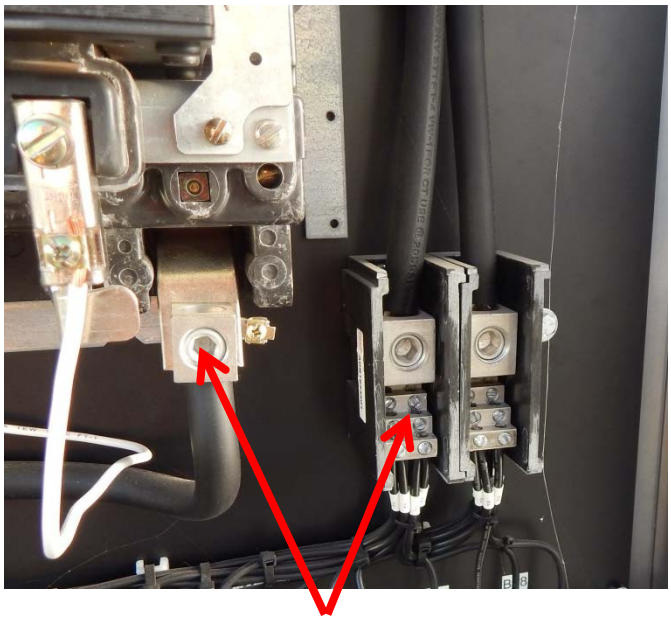
Sticker labels are not acceptable on branch breakers or other components.



Acceptable

Two color name plates must be used.

l. Are all exposed electrically live parts and contacts within the lighting controller protected with insulated covers (Art. 801.03)?



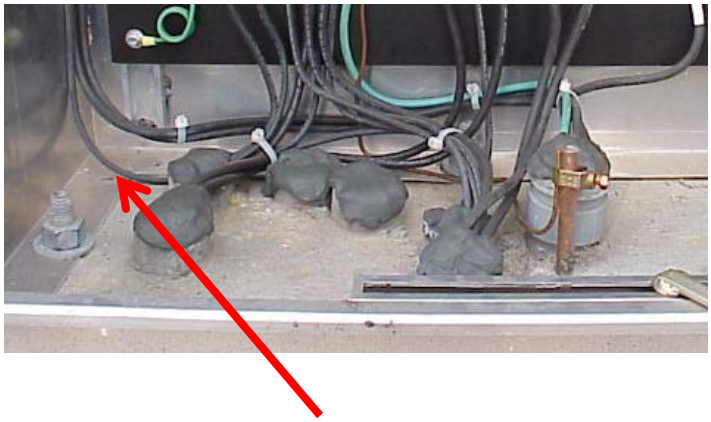
Unacceptable

Acceptable

Barriers should be provided for live contacts within the control cabinet.

m. Are cables routed along the bottom of the controller cabinet to avoid sharp edges that could damage the insulation?

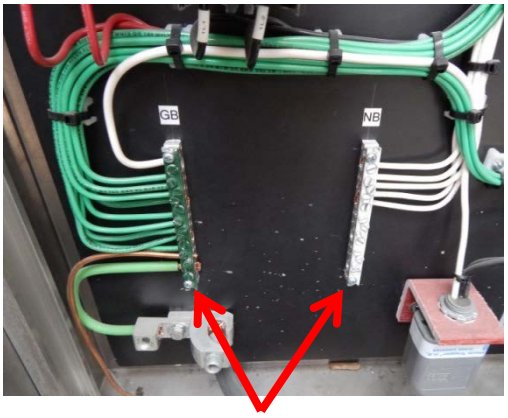
Unacceptable
Sharp metallic corners and threads can damage wire insulation. It is imperative that all wires at the base of the controller are trained to avoid any contact.



Acceptable

n. Are the neutral and ground busses isolated from each other (Art. 1068.01, Hwy. Stds. 825001 through 826006 and figure 1 above)? (They should be bonded together at the service disconnect only (see item b. under Service Disconnect for more detail).)

Unacceptable

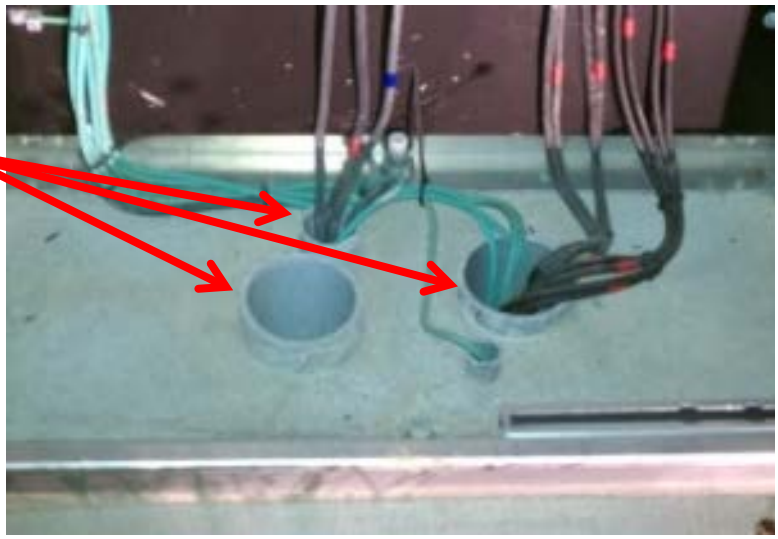


Acceptable

o. Are all other holes and openings into the lighting controller sealed against rodents? (Stainless steel bolts and washers or other approved means should be used to permanently fill small holes.)

p. Is duct seal or other approved material installed in all conduit entries into the lighting controller to seal out rodents and insects (Art. 825.03)?

Unacceptable Unsealed holes in the control cabinet can cause maintenance problems with moisture, insects or rodents in the cabinet. Make sure that all holes are sealed and a pliable waterproof material is installed in all wire way entrances.



Acceptable

4. Wire, Cables, and Raceways

a. Does the conductor have distinctive and permanent markings showing the manufacturer's name or trade mark, insulation type, size and voltage rating (Art. 1066.02)?

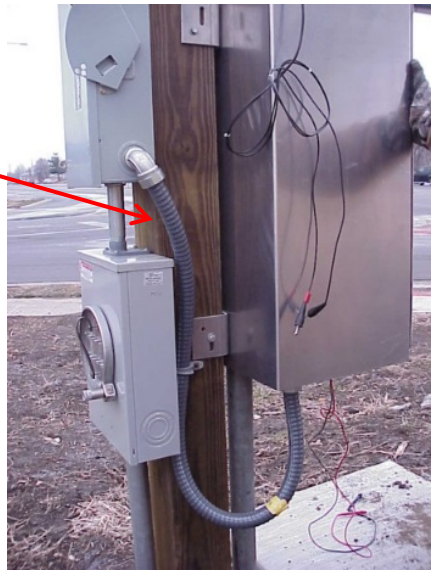
b. Are the number of conductors and size for each conduit run consistent with the contract documents and are all conductors color coded (Art. 1066.02)?

c. Is there a minimum amount of slack wire at each terminus and pull point (Art. 816.04, 817.03 and 817.04)? (Conductors shall not be spliced in order to provide adequate slack.)

d. Has the conductor or unit duct been handled properly (i.e. not been dragged along the pavement or earth to avoid damage to the insulation or bent too sharply) (Art. 816.03 and 817.03)?

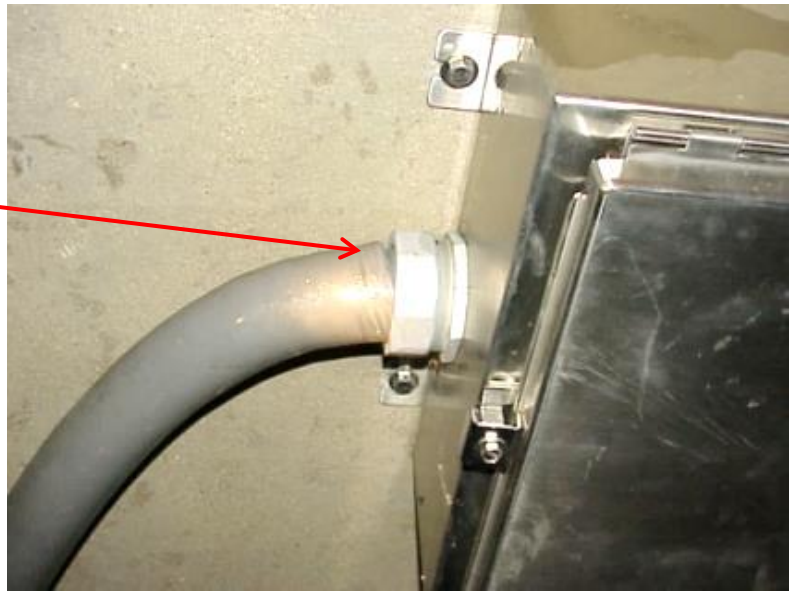
e. Is flexible conduit installed in lieu of bending conduit (Art. 811.03(c)(1))?

Unacceptable
Flexible conduit shall only be used to isolate structure to structure movement or to isolate vibration.



f. Is all flexible conduit properly terminated (Art. 811.03(c)(1))?

Unacceptable
Retainer nut on flex conduit shall be fully tightened at each stainless steel junction box and length of flex conduit shall be limited to 6ft to prevent flex from pulling out of fitting.



g. Are all cable splices made within light pole hand holes or in above ground junction boxes (Art. 817.03)? (Underground cable splices are not permitted.)

h. Are all cable splices performed with approved pressure or compression connectors (Art. 1066.06(c))? (Compression connector are shown below, pressure connectors consist of wire nuts and are acceptable for smaller conductor sizes.)

Unacceptable
Split bolt is a mechanical connector and not a compression connector.

Acceptable
A compression connector is the approved splice.

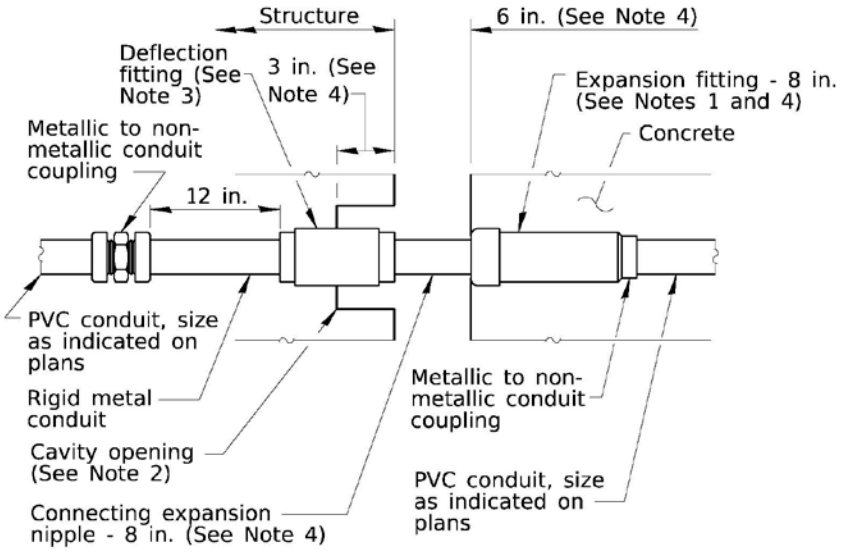
i. Are all cable splices sealed against moisture (Art. 1066.06)? For taped splices this is a three-step process, first rubber tape, then electrical tape, and then sealant.

Acceptable
The splice must be sealed with both types of tape wrapped into the crotch between the wires to prevent moisture in the splice.

Acceptable
The splice shall be properly coated with clear sealant and bonding compound to seal against moisture ingress.

j. Are all conduits that are designated as “future use,” properly capped, plugged or sealed with a pull string installed (Art. 810.04)?

k. Are expansion fittings installed properly where the conduit crosses expansion joints in the structure (Art. 812.03 and Hwy. Stds. 812001)?



CONDUIT EXPANSION / DEFLECTION COUPLING DETAIL *

(All metallic parts shall be stainless steel.)

* Notes:

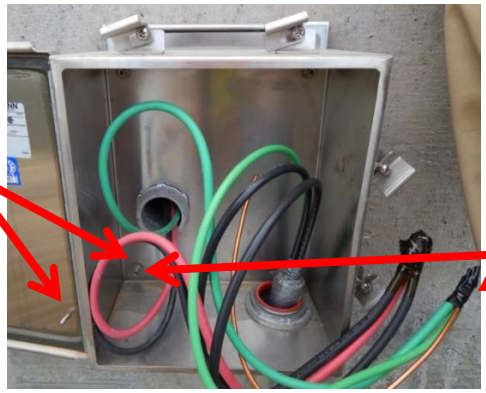
1. The barrel of the fitting shall be fully embedded in the concrete on one side of the expansion joint.
2. A cavity opening shall be 3 in. larger in diameter than the deflection sleeve length.
3. The deflection fitting shall be centered in the opening and embedded in the concrete only up to the deflection fitting center.
4. Dimensions shown will vary to meet the requirements of the specific project.

Acceptable

Coupling must be properly installed to achieve acceptable performance.

l. Are all junction boxes properly grounded (Art. 801.04 and 1088.04).

<u>Unacceptable</u>
A bonding jumper must be installed between the junction box ground lug and the junction box door ground lug.



<u>Unacceptable</u>
The equipment grounding conductor (green wire) and bare ground shall be bonded to the ground lug inside the junction box.

<u>Unacceptable</u>

m. Are there any burrs or jagged edges on the end of any conduit, junction boxes or foundations that could cause damage to conductors or cables being pulled through the conduit (Art. 810.05 and 813.03)?

n. Has open trench installation of conduit been checked for straight line, grade level and depths? Is warning tape installed in trenches at the proper depth above the highest conduit? (Make sure trenches left open overnight are properly barricaded (Art. 810.04).)

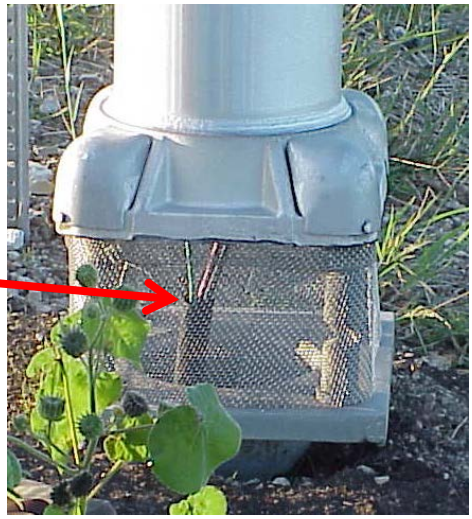
o. Has backfill settled in trenches for roadway lighting (Art. 810.04)? (Additional backfill and seeding may be required after settling.)

<u>Unacceptable</u>

5. Light Poles

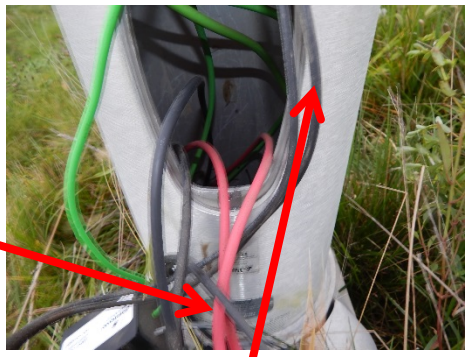
a. Does the polyethylene duct of the unit duct extend 8” up from the bottom of the pole base into the light pole (Hwy. Std. 821101)?

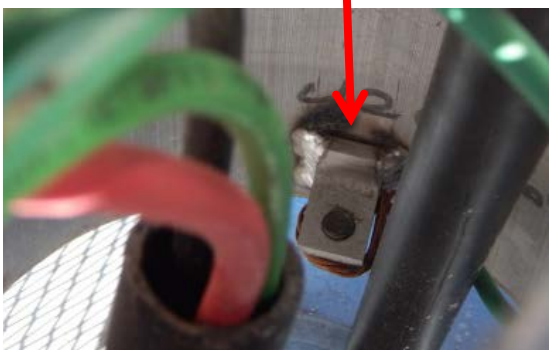
Unacceptable
The polyethylene duct of unit duct must extend 8” up into the light pole to keep water out of the duct.

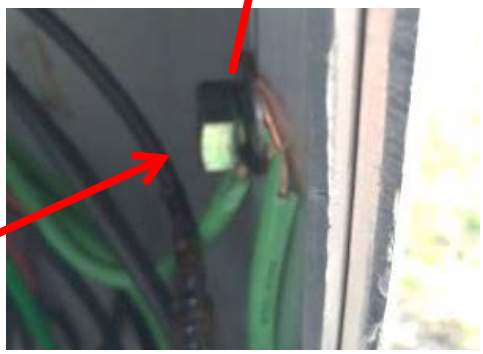


b. Are the grounding electrode conductor (bare copper wire) and equipment grounding conductor (green wires) attached to the ground lug within the light pole handhole (Art. 801.04, Art. 806.03 and Hwy. Std. 821101)?

Unacceptable
Ground lugs inside the handhole on the back wall of the pole shaft down near the light pole base are not to be used.



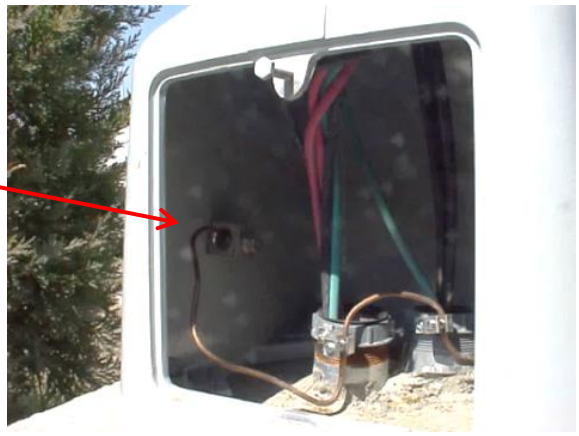




Acceptable
Use the ground lug just inside the light pole handhole.

c. Is the grounding electrode conductor (bare wire) properly connected from the ground rod (Art. 806.03 and Hwy. Stds. 821101)?

<u>Acceptable</u>
Grounding electrode conductor must be installed between the ground lug in the light pole base, the ground rod, and any metallic conduit while keeping length to a minimum.

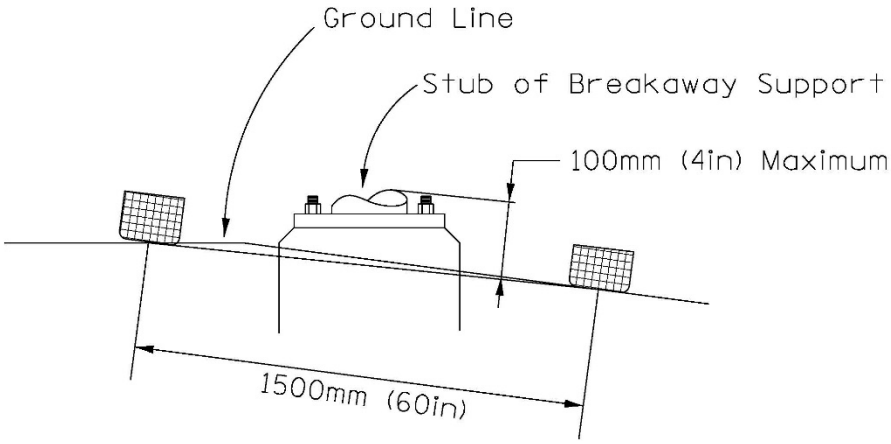


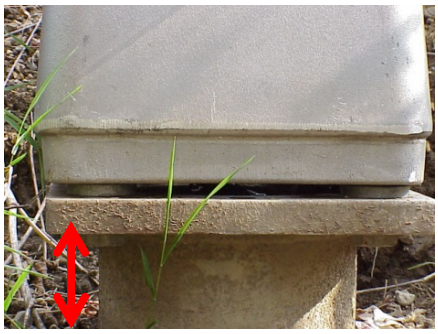
d. Do any proposed locations for light pole foundations fall within the flowline of a ditch (Art. 801.09)? Proposed light pole locations shall be adjusted appropriately prior to installing the light pole foundation.

<u>Unacceptable</u>
Light poles installed too close to the flow line of a ditch will flood and have sitting water in the base of the light pole.

e. Are identification numbers installed on all light poles (Art. 830.03 and Art. 1069.06 and Hwy. Stds. 830001 through 830021)?

f. Do all foundations and breakaway devices meet the 4” AASHTO rule as shown in the diagram below (Art. 836.03 and Hwy. Stds. 836001)?





Unacceptable
Violates the 4” rule, installed too far above grade.

Unacceptable
Does not meet 4” rule across a 60 inch chord.

Unacceptable
Additional dirt around the light pole shall not violate safety requirements set forth in Chapter 38 of the BDE Manual for grade change and vehicle stability on slopes.

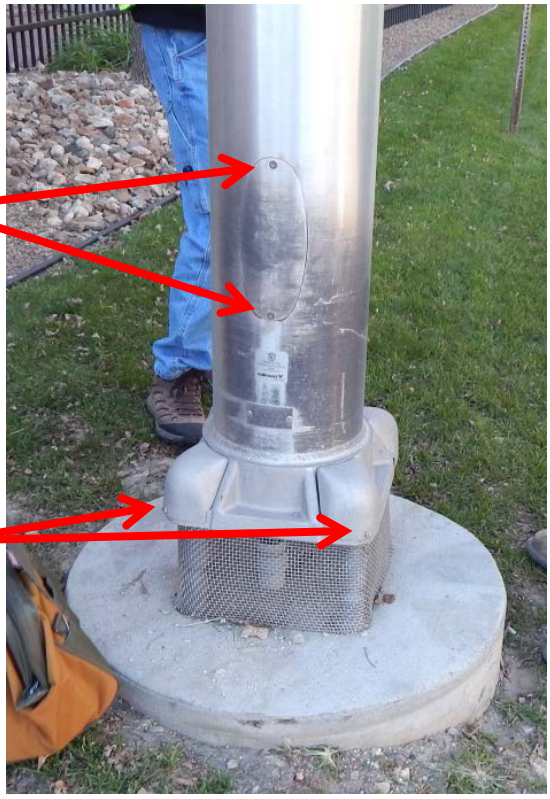
<u>Unacceptable</u>
Light poles shall be installed to finished grade to keep dirt from being deposited against the pole and breakaway devices.

<u>Acceptable</u>

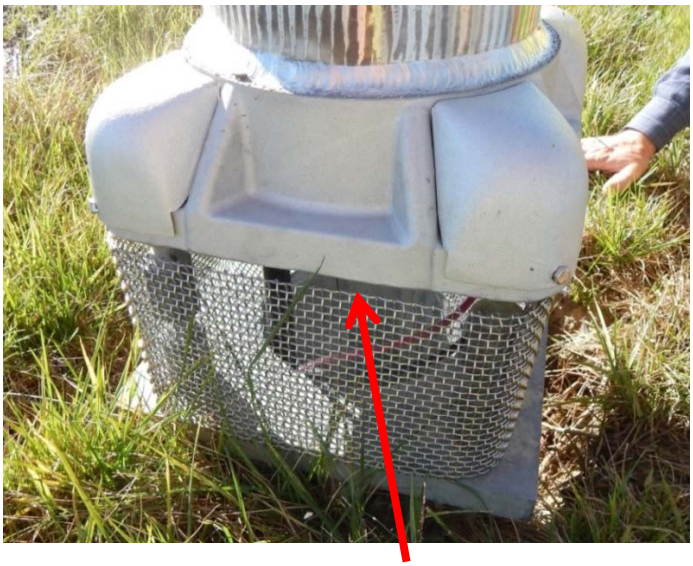
g. Is anti-seize compound applied to all screws that attach the hand hole covers and nut covers to the light pole (Art. 1069.01(e) and (i))?

Apply anti seize compound to the screws attaching the hand hole covers.

Apply anti-seize compound to screws attaching nut covers.

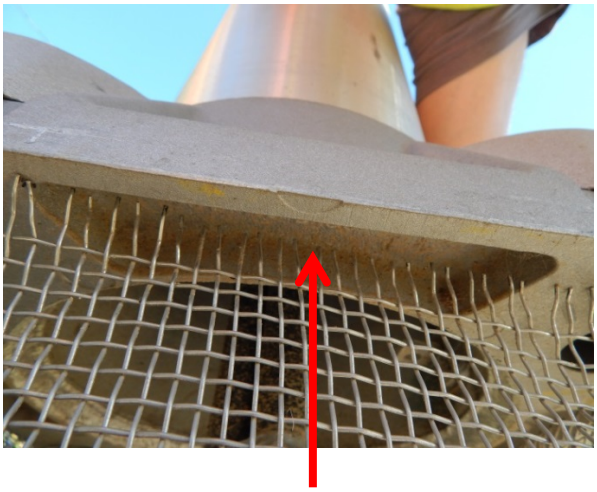


h. Is stainless steel screen installed on all light pole foundations completely sealing all openings from rodents (Art. 838.03, Hwy. Stds. 830001 through 830021 and Hwy. Std. 838001)?

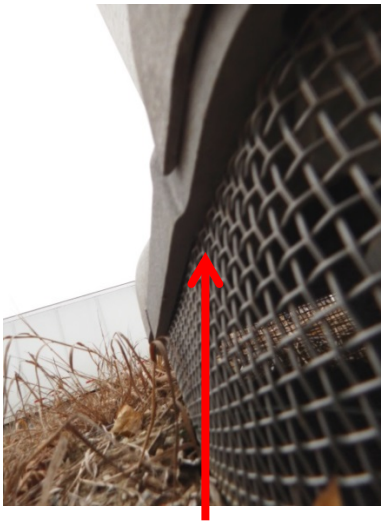


Unacceptable

Gaps between the pole base and the stainless steel screen allow rodents access to the pole wiring and become a maintenance problem.



Unacceptable
If not completely sealed, voids in the pole base can provide access to rodent entry even with the screen installed tight against the base of the pole.



Acceptable
Voids must be completely sealed. Screen should be cut so it projects up into the voids and creates a tight seal.

Acceptable
Some contractors have installed aluminum plates on the bottom of aluminum poles to cover voids in the base casting.

i. Is stainless steel screen AWG No.16 being used (Art. 1070.04(a)(2)c)?

Unacceptable
18 wire mesh is more susceptible to damage from a mower hit than the No. 16 mesh and is not allowed.

Acceptable
No. 16 wire mesh is heavier and holds up better than the smaller gage wire.

j. Are washers on the top of the pole base large enough to cover the slotted hole and prevent rodent entry (Art. 838.03 and Hwy. Std. 838001)?

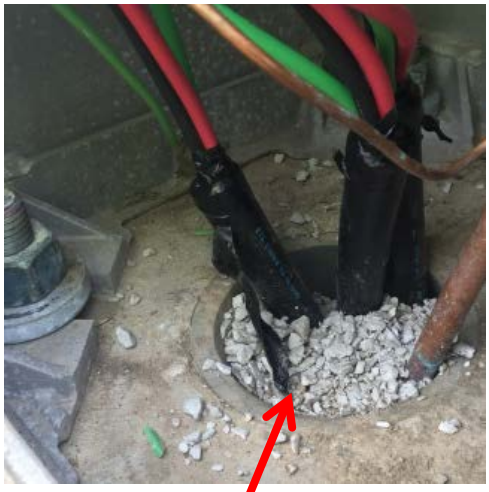
Unacceptable
Rodents can get into very small openings. Washers need to be large enough to cover the entire slot.

Acceptable
The slot is completely covered.

k. Is fine aggregate installed in the wireway window of metal foundations or in the duct openings of concrete light pole foundations (Art. 836.03 and Hwy. Stds. 821101 and 836001)?

Unacceptable

Concrete and metal light pole foundations must be filled with fine aggregate to prevent rodents from entering through the foundation.



Acceptable

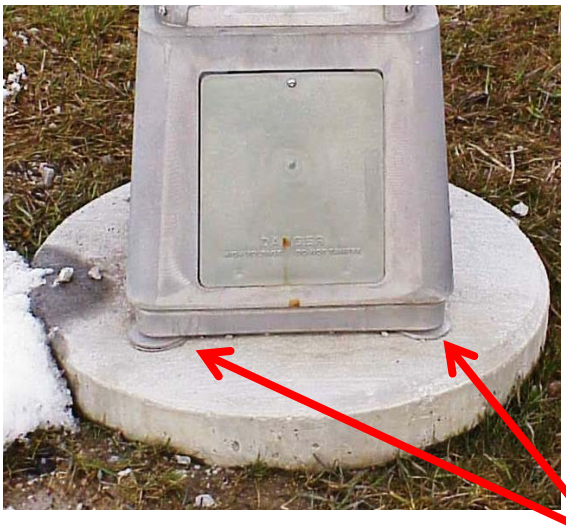
l. Are light pole hand holes oriented such that workers accessing them are facing oncoming traffic (Art. 830.03 and Hwy. Stds. 830001 through 830021)? Poles installed on median barrier walls or parapet walls shall have hand holes perpendicular to the wall and shall all face the same direction for ease of maintenance or they shall be oriented as directed by the Engineer.

m. Is a nut installed on the underside of each stud bolt of all metal light pole foundations (Art. 838.03(b) and Hwy. Stds. 830001 through 830021 and 838001)?

Unacceptable
A hex nut should be installed on the bottom side of the foundation plate as shown in Hwy. Stds. 838001.

Acceptable
A nut keeps the stud bolt from backing out of the foundation plate due to pole vibration.

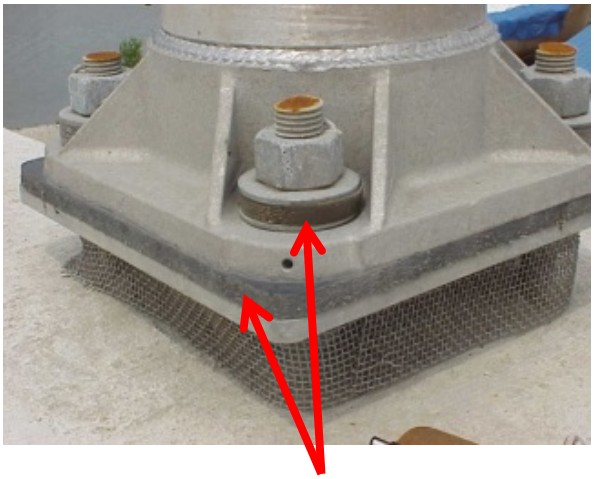
n. Are shims being avoided on breakaway devices (Art. 830.03, 836.03(b) and 838.03)?



Unacceptable
Shims shall not be used in lieu of a level foundation.
Shims reduce the strength of the transformer base.

o. Are pole mounting pads and isolation pads installed according to manufacturer's specifications for all bridge mounted light poles (Art. 1069.07 and Hwy. Stds. 830001 through 830021)? Over torquing of the nuts on the light pole base can damage isolation washers.

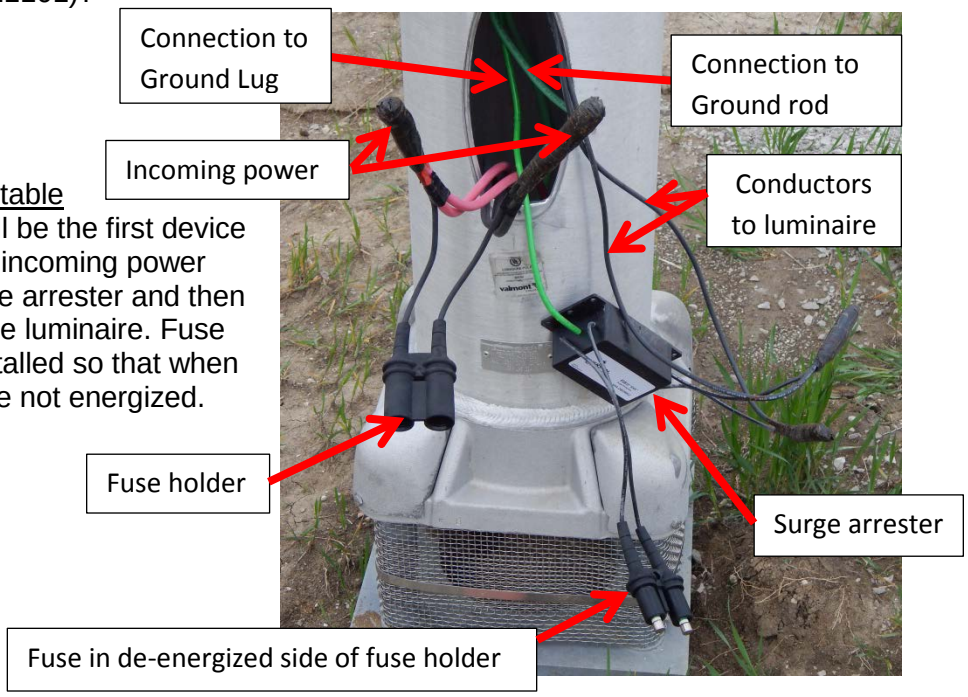
Unacceptable
Undersized steel washers and over torqued nuts begin to push out (bulge) the isolation pads and washers and provide no benefit.



Acceptable
Example of properly torqued nuts per the manufacturer's recommendations on a bridge mounted light pole.

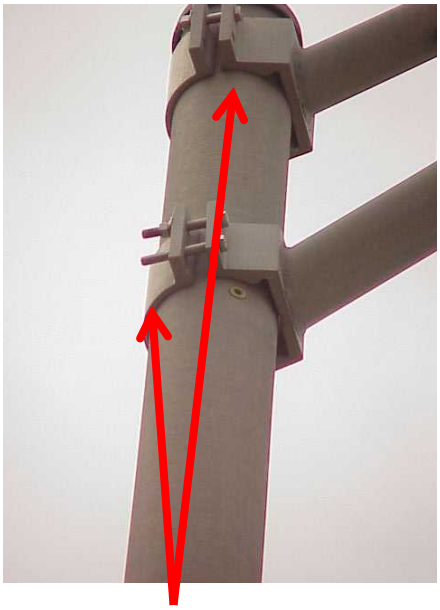
p. Are the fuse holders and surge arrester properly connected within the light pole hand hole (Hwy. Std. 821101)?

Acceptable
The fuse holder shall be the first device connected to the incoming power followed by the surge arrester and then the conductor to the luminaire. Fuse holders shall be installed so that when opened, fuses are not energized.

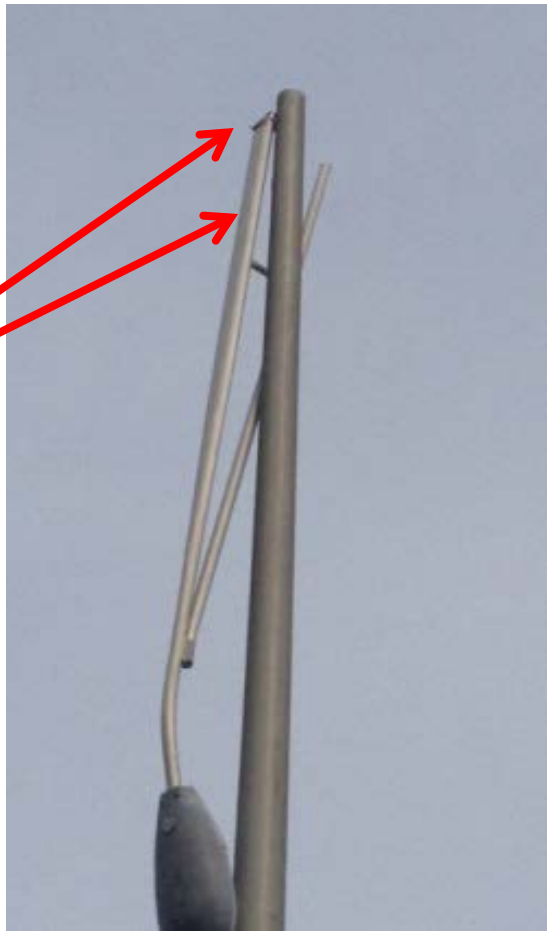


q. Do all mast arms have clamp style bases (Art. 1069.02(a)(1) and Hwy. Stds. 830001 through 830021)?

Unacceptable (weaker attachment)



Acceptable (Clamp Style)



Unacceptable
The clamp style bases are less prone to failure than a simplex connection as shown.

6. Luminaire

a. Has each luminaire been leveled with a level (Art. 821.03)?

Acceptable
The specification states that luminaires shall be level. This ensures that the light is directed to the roadway and the correct light reaches the pavement. Each luminaire should be provided with a target level but the contractor should use a hand level during installation to confirm.

b. Is there a stainless steel ¼-20NC set screw securing the luminaire to the tenon of the pole arm in high vibration areas such as a pole mounted on a bridge (Art. 821.04)?

7. Final inspection

a. Has a lighting information package been sent to the Electrical and Mechanical Unit in Springfield for review (see appendix A for details)?

b. Have all comments provided by the Electrical and Mechanical Unit been addressed (see appendix A for details)?

c. Has the nighttime light reading points been painted on the pavement? Locations for the reading points are provided by the Electrical and Mechanical Unit upon request.

Appendix A

Lighting Information Package

A lighting information package needs to be provided to the Central Bureau of Design and Environment Electrical and Mechanical Unit . The following information should be included in the package:

1. Documentation for any material changes that occurred during construction which are not reflected in the approved shop drawings (Art. 801.05).

2. All certifications, warranties, and test reports that were not submitted with the shop drawings (Art. 801.06 and 1067.01).

3. Updated record drawings (i.e. as-built plans) with any deviations from the contract plans and specification that were made during construction marked in red (Art. 801.16).

4. All electrical test reports (Art. 801.13).

    a. All test results must be in compliance with Art. 801.13 and shall be taken in the presence of the Resident Engineer or his/her representative. All forms shall be signed by the Contractor and by the Resident Engineer.

    b. Any branch circuits with insulation resistance readings not in compliance shall be corrected and re-tested.

    c. Existing circuits must be tested prior to the beginning of work and the final readings must be the same or better than those taken before work began in accordance with Art. 801.13. If readings are not taken prior to the beginning of work then the readings on existing circuits must meet the requirements of new conductors in accordance with Art. 801.13.

5. Nighttime illuminance readings at each point as specified in the light reading points sketches. Light reading point sketches are specific to each job and will be provided by the Central Bureau of Design and Environment Electrical and Mechanical Unit upon request.

6. If the “Construction Inspectors Checklist for Roadway Lighting” is used, a copy can be sent with accompanying photos to show compliance with each checklist item.

The Central Bureau of Design and Environment Electrical and Mechanical Unit will review the information package and provide comments to the Resident Engineer.

Appendix B

Final Inspection Process

The final inspection will be conducted by the District. The Central Bureau of Design and Environment Electrical and Mechanical Unit will assist with the final inspection at the request of the District.

When the Central Bureau of Design and Environment Electrical and Mechanical Unit is to be present at the final inspection the following shall be provided to the Electrical and Mechanical Unit prior to the final inspection:

1. The “Lighting Information Package” as specified in Appendix A

2. Points shall be marked on the pavement matching the light reading point sketches that were provide by the Electrical and Mechanical Unit for the “Lighting Information Package”.

3. A list of participants expected to be present at the final inspection.

4. Any questions or concerns that the District or the Resident Engineer would like to direct to the Electrical and Mechanical Unit.

5. A suggested time and date for the final inspection.

The final inspection shall be performed in accordance with the project plans and specifications and to the requirements and specifications set forth by the District. When non-compliant work is found during the final inspection the District will issue a punch list of electrical items that need to be corrected.

The Central Bureau of Design and Environment Electrical and Mechanical Unit, if involved in the final inspection, will send a draft inspection memo with punch list items to the Resident Engineer and the District for comment. Once District comments are received and incorporated (by the Electrical and Mechanical Unit) a hard copy of the final roadway lighting inspection report (showing punch list items) will be sent to the District and the Central Bureau of Construction. A copy will also be sent by email to the Resident Engineer.

Once the punch list item corrections are made to the satisfaction of the District a notification of lighting acceptance should be sent to the Central Bureau of Design and Environment Electrical and Mechanical Unit with the acceptance date as recorded in the Resident Engineer’s field notes.

Appendix C

Electrical and Lighting Forms

The following forms are for Art. 801.13 testing;

1. Electrical Voltage Test
2. Electrical Cable Insulation Resistance Test
3. Electrical Loading Test
4. Electrical Continuity Test
5. Electrical Resistance of Grounding Electrodes Test
6. Lighting Photometric Test

Electrical Voltage Test

Project

County	Contract	Date

Controller		Multimeter Make & Model No.	Calibration Date

VOLTAGE MEASUREMENTS
(VOLTS)

	A to B	A to C	B to C	A to N	B to N	C to N
No Load at Service Disconnect						
Contractor						
Owner						
Full Load at Service Disconnect						
Contractor						
Owner						
No Load at Lighting Controller						
Contractor						
Owner						
Full Load at Lighting Controller						
Contractor						
Owner						

Voltage Measurements – Line to Line
(Volts)

Last Pole on Circuit	Contractor (phasing) reading	Owner (phasing) reading	Last Pole on Circuit	Contractor (phasing) reading	Owner (phasing) reading
A or 1	(to)	(to)	F or 6	(to)	(to)
B or 2	(to)	(to)	G or 7	(to)	(to)
C or 3	(to)	(to)	H or 8	(to)	(to)
D or 4	(to)	(to)	I or 9	(to)	(to)
E or 5	(to)	(to)	J or 10	(to)	(to)

Representatives Present

Resident Engineer	Contractor Representative	Owner Representative
Signature	Signature	Signature

Electrical Cable Insulation Resistance Test

Project

County	Contract	Date of Inspection

Controller		Megger Make & Model No.	Calibration Date

Resistance Measurements (Megohms)

*Scale – ( ) ***specify** Scale – 250V **/** 100V

Contractor					Owner				
Circuit	Phase A	Phase B	Phase C	Neutral	Circuit	Phase A	Phase B	Phase C	Neutral
A or 1					A or 1				
B or 2					**B or 2**				
C or 3					**C or 3**				
D or 4					**D or 4**				
E or 5					**E or 5**				
F or 6					**F or 6**				
G or 7					**G or 7**				
H or 8					**H or 8**				
I or 9					**I or 9**				
J or 10					**J or 10**				

Representatives Present

Resident Engineer	Contractor Representative	Owner Representative
Signature	**Signature**	**Signature**

Electrical Loading Test

Project

County	Contract	Date

Controller		Multimeter Make & Model No.	Calibration Date

CONTROLLER LOAD MEASUREMENTS (AMPERES)

Service Cable Measurements				
	Phase A	Phase B	Phase C	Neutral
Contractor				
Owner				

Branch Circuit Cable Measurements								
Circuit Number	Contractor				Owner			
	A	B	C	Neutral	A	B	C	Neutral
A or 1								
B or 2								
C or 3								
D or 4								
E or 5								
F or 6								
G or 7								
H or 8								
I or 9								
J or 10								

Representatives Present

Resident Engineer	Contractor Representative	Owner Representative
Signature	Signature	Signature

Electrical Continuity Test

Route, Common Name	**Limits**
Section	**Controller Number**
Contract	**Ohmmeter Model**
County	**Date**

Resistance Measurements (Ohms)

Contractor Measurements				**Owner Measurements**			
Circuit	**Forward**	**Reverse**	**Average**	**Circuit**	**Forward**	**Reverse**	**Average**
A – B				**A – B**			
C – D				**C – D**			
E – F				**E – F**			
G – H				**G – H**			
I – J				**I – J**			
K – L				**K – L**			
M – N				**M – N**			
O – P				**O – P**			
Q – R				**Q – R**			
S – T				**S – T**			
U – V				**U – V**			
W – X				W – X			
Y – Z				**Y – Z**			

Representatives Present

Resident Engineer	**Contractor Representative**	**Owner Representative**
Signature	**Signature**	**Signature**

Electrical Resistance of Grounding Electrodes Test

Route, Common Name	**Limits**
Section	**Controller Number**
Contract	**Ohmmeter Model**
County	**Date**

Resistance Measurements (Ohms)

Controller Electrode Measurements				
	Controller A	**Controller B**	**Controller C**	**Controller D**
Contractor				
Owner				

Branch Circuit Electrode Measurements								
Circuit Number	**Contractor**				**Owner**			
	Pole__	**Pole__**	**Pole__**	**Pole__**	**Pole__**	**Pole__**	**Pole__**	**Pole__**
A or 1								
B or 2								
C or 3								
D or 4								
E or 5								
F or 6								
G or 7								
H or 8								
I or 9								
J or 10								

Representatives Present

Resident Engineer	**Contractor Representative**	**Owner Representative**
Signature	**Signature**	**Signature**

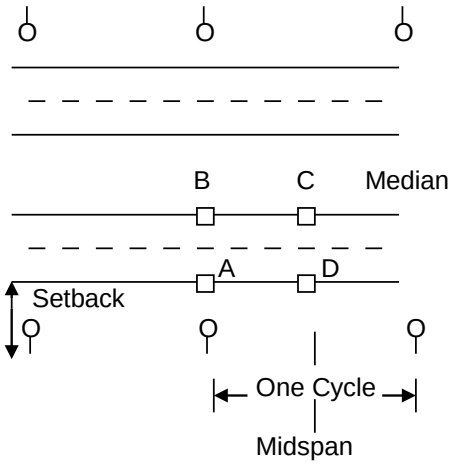
Photometric Test

7/5/07

Route, Common Name	Limits
Section	Controller Number
Contract	Photometer Model
County	Date

Photometer Measurements (Footcandles)

Cycle	Contractor Measurements						Owner Measurements					
Pole # - Pole #	A	B	C	D			A	B	C	D		



Representatives Present

Resident Engineer	Contractor Representative	Owner Representative
Signature	Signature	Signature