1) All grounding system connections shall be exothermically welded. This includes all cables, ground electrode and arrays. Do not exothermically bond grounding electrode to grounding electrode. Method of Measurement and Basis of Payment as per Section 620 of the Standard Specifications.

2) The contractor shall be responsible for contacting all utility companies prior to any underground work. The utility company will locate and identify their facilities.

3) Contractor shall determine the service required date for the power company transformer installation at the pre-construction conference.

4) The power company reserves the right to install the riser, switch gear and weatherhead on power company poles at the expense of the contractor. Contact the power company for cost or for authorization for an alternate procedure.

5) Any damaged portions of galvanized steel poles and bracket arms shall be painted in accordance with Section 562 of the Standard Specifications.

6) Poles and bracket arms shall be designed in accordance with the design criteria, as indicated in the plans and using the applicable equations found in the AASHTO 'Standard Specifications For Structural Supports For Highway Signs, Luminaires And Traffic Signals'. The calculations shall be based on the actual projected area of the luminaire or 3.0 square feet whichever is greater.

7) The luminaire manufacturer shall place a permanent tag on the luminaire housing on which is imprinted the following information : Wattage, ballast type, lamp shown on design plans, lamp setting (position of luminaire), IES light distributation with this lamp in the position specified, input voltage and power factor. Luminaire photometric submittals required.

8) Before final acceptance, contractor shall provide 2 sets of full size as built plans to the maintaining agency.

9) Conduit routing shall be pole to pole, maintaining pole setback distance from edge of pavement. Any cable routing in locations where guardrail is proposed shall be 2' in front of the standard guardrail position.

10) Pole positions and conduit routing may be adjusted, as approved by the Engineer, to prevent conflicts with utility and drainage structures not indicated, and prevent guardrail post conflict with underground lighting circuits.

11) Where guardrail is constructed, the poles shall be placed a minimum of 4' behind the face of the guardrail.

12) Pole foundation installations shall be backfilled to the top of the foundation, compacted to a firm, stable condition approximately equal to that of the adjacent soil. The fill shall conform to existing grade and be fully sodded.

13) All splices shall be made in pullboxes or the pole base. No splices shall be made inside the conduit. The wires at pullboxes shall have sufficient length to completely remove connectors to the outside of pullboxes to make connectors accessible for changing fuses and trouble shooting the system.

14) Neutral wires to have white insulation. Do not use white or green insulated wires for ungrounded conductors.

15) Unless otherwise specified, all cable shall be single conductor, 98 percent conductivity stranded copper, with THW or THWN insulation.

16) All exposed or surfaced mounted conduit shall be rigid or intermediate metal. These exposed runs of conduit shall be provided with either expansion joints or flexible metal conduit sections adequate to take care of vibrations and thermal expansions. All metal conduit shall be grounded. Steel conduit shall be hot dipped galvanized.

17) All conduit that will remain empty as spares shall be mandrel tested, cleaned inside and both ends capped. Leave the corrosion resistant pull/drag wire and place duct makers, or pullboxes to mark the location of the ends of the conduits.

18) Pull boxes shall be located at ends of conduit crossing roadways, and as necessary for the completion of the project.

19) These plans represent minimum acceptable criteria. The inspection per these drawings represent the minimum base of acceptance.

20) All material, unless otherwise specified, shall be Underwriters Laboratory approved.

21) Pull boxes shall meet the requirements of Section 635 of the 'Standard Specifications For Road And Bridge Construction' and Section 635 of the 'Minimum Specifications For Traffic Control Signals And Devices'.

22) A pull box shall be installed at each pole location. Pull boxes should be located 2' max from pole unless otherwise directed by the project engineer. Metal pull box covers shall be grounded. See General Requirements Section 635-4 of the Standard Specifications for Road and Bridge Construction.

23) At all pull boxes and pole bases, ends of conduit shall be sealed in accordance with Section 630 of the Standard Specifications for Road and Bridge Construction.

24) Luminaire shall be supplied with a regulator type ballast mounted on a hinged door or panel. The unit shall swing open to provide access to the ballast assembly by release of captive screws. The electrical connector shall be a quick disconnect plug. The unit shall be easily removed from the luminaire after release of the captive screws and disconnect plug.

25) All mounting heights are ± 2'-6" unless otherwise noted in plans.

26) A handhole is required in all poles. Handhole should be located opposite approaching traffic with cover fastened with Stainless Steel Screws. The handhole opening shall be at least 20 square inches.

27) The luminaire and arm on JOINT USE POLES shall be grounded.

28) Concrete slabs around poles and pull boxes shall be paid for under the contract unit price for Class I Concrete (Miscellaneous); the cost of reinforcing steel fabric shall be included in the price for Class I Concrete (Miscellaneous).

BREAKAWAY FEATURE

All conventional mounting height poles shall be mounted on a frangible metal base or system of breakaway couplings. If couplings are used, one coupling shall be provided for each anchor bolt connection. The only continuous connection of the pole to the foundation at each anchor bolt shall be provided by the couplings. The area between the top of the pole foundation and the base of the pole including the couplings shall be enclosed with a non-structural aluminum skirt.

If a frangible metal base is used, it shall be one piece and be designed to breakaway without the aid of any slipping or sliding surfaces.

The design of the breakaway feature shall be in accordance with the breakaway performance requirements of the AASHTO 'Standard Specifications For Structural Supports For Highway Signs, Luminaires and Traffic Signals'. The contractor (supplier) shall submit copies of test reports as evidence the breakaway feature meets the above specifications and calculations to verify the design will meet the AASHTO wind loading specified in the contract plans. No poles are to be installed prior to approval of submittal data.

Any substantial remains of a breakaway support, when it is broken away, should not project more than 4" as discussed in Section 7 of the above AASHTO specifications, and, Chapter 4, Section 4.2 of the AASHTO 'Roadside Design Guide'.

Poles behind bridge rail or barrier wall mounted, shall be non-frangible.

SURGE PROTECTOR SPECIFICATIONS

1. The unit shall withstand a surge current up to 20,000 Amps, and repetitive surges of 200 Amps for a minimum of 10,000 occurences.
2. The unit shall respond in less than 50 nanoseconds and within this time have a peak clamping voltage better than 1,100 Vrms.
3. The maximum allowable voltage that can pass continuously through the hot leg of the protector must be less than 550 Vrms.
4. The current drain shall be less than 100 microamps.
5. The unit shall be insulated 600 V to ground and shall be weatherproof.
6. The unit shall not allow holdover current or conduction to ground after the surge ends.
7. Protection shall be achieved for both the 480 V and neutral conductors with the surges being passed to ground and NOT to neutral.
8. There shall be no discharge lag in the protection of the 480 V conductor over the neutral conductor.
9. Underwriters Laboratory approval not required.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING GENERAL NOTES

	Names	Dates
Designed By		
Drawn By		
Checked By		

Approved By
Clark A. Scott
State Traffic Standards Engineer

Revision	Sheet No.	Index No.
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