



Florida Department of Transportation

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SECRETARY

October 26, 2016

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: **620**
Proposed Specification: **6200302 Grounding and Lightning Protection. REVISED**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification. Additional revision, based on FHWA comment, is **highlighted**.

The changes are proposed by Chester Henson of the State Roadway Design Office to clarify the language relating to grounding resistance.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to dan.hurtado@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Dan Hurtado, P.E.
State Specifications Engineer

DH/dt

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

GROUNDING AND LIGHTNING PROTECTION.**(REV ~~7-1428-168-30-1610-26-16~~)**

SUBARTICLE 620-3.2 is deleted and the following substituted:

620-3.2 ~~Minimum~~ Grounding Resistance:**620-3.2.1 ~~Multiple~~ ~~Minimum Ground Rod Assemblies~~ Resistance Required:**

Obtain a resistance to ground of not more than 5 ohms ~~or less~~ for the following ~~elements~~ grounding applications. Install multiple ground rod assemblies totaling a maximum length of up to 80 feet, as required to achieve minimum grounding resistance.

1. Power service for traffic control devices
2. Signal and ITS cabinets
3. ITS Poles/Structures with electronic equipment
4. DMS and DMS structures

Install a minimum of one primary ground rod assembly. If a grounding and lightning protection system using a single ground rod assembly does not achieve the required resistance to ground, extend the length of the ground rod assembly an additional 20 feet or install an additional ground rod assembly 40 feet away and connect it to the main ground rod assembly to create a ground rod array. Continue installing ground rod assemblies connected in an array until the required resistance is obtained or until the maximum required total length of ground rod is installed.

Grounding systems formed from horizontally constructed conductive radials are permitted if site conditions prohibit the use of vertically driven rods as permitted by the NEC Article ~~250.53(G)~~. A grounding system consisting of the maximum total length of ground rod required is acceptable in cases where soil conditions prevent the grounding system from achieving the required resistance to ground. Submit the site resistance measurement to the Engineer.

620-3.2.2 ~~Single Ground Rod Assemblies~~ Minimum Resistance Not Required:

Install a single ground rod assembly for these ~~elements~~ following applications. No resistance to ground measurements are required.

1. Conventional lighting
2. External lighting for signs
3. Signal cable & span wire
4. Aerial interconnect messenger wire
5. Pedestals for pedestrian signals
6. Pull boxes with metal covers when 120 volts (or greater) AC power is present
7. Splice vaults with wire grounding units.

GROUNDING AND LIGHTNING PROTECTION.**(REV 10-26-16)**

SUBARTICLE 620-3.2 is deleted and the following substituted:

620-3.2 Grounding Resistance:

620-3.2.1 Minimum Resistance Required: Obtain a resistance to ground of not more than 5 ohms for the following grounding applications. Install multiple ground rod assemblies totaling a maximum length of up to 80 feet, as required to achieve minimum grounding resistance.

1. Power service for traffic control devices
2. Signal and ITS cabinets
3. ITS Poles/Structures with electronic equipment
4. DMS and DMS structures

Install a minimum of one primary ground rod assembly. If a grounding and lightning protection system using a single ground rod assembly does not achieve the required resistance to ground, extend the length of the ground rod assembly an additional 20 feet or install an additional ground rod assembly 40 feet away and connect it to the main ground rod assembly to create a ground rod array. Continue installing ground rod assemblies connected in an array until the required resistance is obtained or until the maximum required total length of ground rod is installed.

Grounding systems formed from horizontally constructed conductive radials are permitted if site conditions prohibit the use of vertically driven rods as permitted by the NEC Article 250.53(G). A grounding system consisting of the maximum total length of ground rod required is acceptable in cases where soil conditions prevent the grounding system from achieving the required resistance to ground. Submit the site resistance measurement to the Engineer.

620-3.2.2 Minimum Resistance Not Required: Install a single ground rod assembly for the following applications. No resistance to ground measurements are required.

1. Conventional lighting
2. External lighting for signs
3. Signal cable & span wire
4. Aerial interconnect messenger wire
5. Pedestals for pedestrian signals
6. Pull boxes with metal covers when 120 volts (or greater) AC power is

present

7. Splice vaults with wire grounding units.