

**The following list provides an example of some of the General Notes that the lighting designer may want to include in the lighting plans.**

The General Notes should provide the Contractor with explicit guidance during construction. They should never conflict with the Specifications and they should not repeat the Specifications. However, District and Residency staff may require a General Note to emphasize an issue normally found in the Specifications. Many times, a General Note will provide the Contractor and VDOT Inspector with a reminder of certain issues that must be addressed or that are specific to a project. The following notes apply to many roadway lighting plan sets.

- Notes “2”, “4”, and “44” provide guidance to the Contractor in the purchase of materials.
- Note “13” is an example of an issue that the District Traffic Engineer wanted emphasized in the General Notes.
- Notes “3” and “29” provides specific direction to the Contractor.
- Note “30” restates the Specifications, but adds the requirement to supply a report of the Contractor’s activities.

*Each note should be reviewed with the TE/L&D Manager.*

1. For underbridge lighting details, see Sheet Nos. 79 through 93.
2. All underbridge luminaires supplied for this roadway shall be of an IES type IV, short, non-cutoff, 150W H.P.S. furnished with built-in ballast as located on the plans.
3. All underbridge luminaires shall have a silicon bead applied between the top surface of the luminaire housing and the bridge pier cap providing a watertight seal to this gap.
4. The luminaire supplied for sign lighting shall be of an IES Type-IV, Medium, non-cutoff, H.P.S. with an average of 16,000 lumens for a 150-watt bulb.
5. All ground-mount lighting standards shall be furnished with manufacturer’s transformer bases. Only those lighting standards requiring a “breakaway” transformer base are designated with the symbol:

BW – BREAK AWAY

6. Lighting standards mounted on bridge parapets are designated with the symbol:

PM – PARAPET MOUNT

7. All lighting standards shall be installed using aluminum poles.

8. The Contractor shall field verify existing anchor bolts and patterns on structures prior to ordering and installing lighting poles.
9. All new concrete foundations LF-1 shall be placed so that the lighting standards shall be a minimum of 3 ft behind GR-2 type guardrail, 7 ft behind GR-8 type guardrail, and 2 ft behind GR-2A type guardrail.
10. The contractor is responsible for determining proper pole length needed at each location in order to attain proper luminaire mounting height specified at each location in relation to the roadway. The pole type has been determined from survey information. Actual pole length shall be determined from field measurement. See Sheet 2C for mounting height detail.
11. All lighting standards shall be provided with identification tags bearing the circuit, phase, and control center number in addition to all other identification requirements as specified in Section 700 of the specifications.
12. All luminaires, including the underbridge luminaires, shall be fused in the transformer base, handhole, fusebox, or nearest junction box.
13. Only approved splice kits shall be allowed at splice points in the electrical power system for this project.
14. Conduits shown on these plans are diagrammatic and actual conduit runs shall conform to the field conditions.
15. Certain utilities within the vicinity of this Project area are shown on the plans. The utilities shown are not guaranteed to be complete or accurately located. The Contractor is responsible for locating all existing utilities and lighting systems before proceeding with the work.
16. At locations where proposed conduit shall cross existing conduit, the Contractor shall hand-dig the trench and shall take adequate care not to damage the existing conduit or the contents thereof. These conditions shall apply at all such conduit crossings except those locations where proposed conduit will cross conduit designated to be abandoned.
17. All Pipe Sleeve shall be installed in accordance with VDOT Standard ECI-2.
18. Conduits shall be installed with large radius offsets (5' minimum radius) to bypass drainage inlets, manholes, and other obstructions.
19. Conduits shall be installed a minimum of 2 ft. behind guardrail posts.
20. Conduits shall be installed a minimum of 5 ft. clear of shoulder edge when no guardrail is installed.

21. All underground conduits shall be sloped to drain to junction boxes or manholes. If this cannot be accomplished, they shall be provided with drainage tees at the low points of conduit runs.
22. The contractor is required to install new conductor cable in existing conduit at various locations on the project. The Contractor shall mandrill test all such existing conduits to verify that the conduit is capable of receiving new conductor cables. The Contractor shall notify the Engineer upon the discovery of blocked or damaged conduit.
23. The Contractor shall provide expansion couplings at all expansion joints on structures or as designated by the Engineer.
24. Cables and conductors in all junction boxes, manholes, and all equipment enclosures shall be provided with individual nonferrous metal or nylon tags (samples of tags and markings shall be submitted to the Engineer for approval). Tags for power conductors shall be identified as "Power" with phase, circuit, and service panel number.
25. All wiring shall terminate in control panels with insulated lugs and be properly labeled, conforming to wiring diagrams furnished by the Contractor.
26. All conductors shall be color-coded as required in the specifications. Certified conductor test reports shall be approved by the Engineer prior to installation.
27. The Contractor shall furnish and install an equipment grounding conductor in all non-metallic conduit in accordance with Section 700 of the Specifications. The minimum equipment grounding conductor size shall be the same size as the largest conductor indicated on the plans for each conduit run.
28. Where conductors are to be installed in an existing conduit, the equipment-grounding conductor is called out on the plans and is to be measured and paid for under the pay item conductor cable.
29. The location of the light pole foundation ground rod shall be marked on the top surface of the foundation by a recessed arrow and the initial "G" formed in the concrete. The ground rod shall typically be placed to the left of the lighting pole foundation as observed from the pole handhole.
30. Ground rods shall not have a resistance to ground of more than 25 ohms in accordance with the requirements of Section 700 of the Specifications. The Contractor shall provide the Engineer with a report of electrical resistance measured between the ground rod and ground.

31. Ground rods shall be connected to the ground wire utilizing an exothermic weld. All cost of this item shall be included in the bid price for other items. No separate measurement will be made.
32. Conductors in junction boxes, manholes, and all equipment enclosures shall be neatly arranged and laced with approved cable ties.
33. Where conductor cables terminate in junction boxes or lighting standards, they shall be tested and capped with 3 ft. of slack per conductor.
34. Locations of existing junction boxes and manholes shown on the plans are approximate.
35. All junction boxes and manholes shall be provided with a means for drainage.
36. Areas around cabinets, junction boxes, and manholes on slopes shall be graded as approved by the engineer.
37. The Contractor shall be responsible to return all disturbed areas and fencing to their original state at the completion of all work. Disturbed areas shall be seeded in accordance with Section 603 of the Specifications and all cost for this item shall be included in the price bid for other bid items. No separate measurement will be made.
38. The Contractor shall coordinate electrical service with the Engineer and the local power company.
39. The Contractor shall remove all conductor cables that are situated in conduit designated to be abandoned.
40. The Contractor shall field verify power circuits prior to abandoning electrical conductors shown on the plans. The Contractor shall notify the Engineer immediately if demolition or new construction will impact service to overhead structures or other powered components not designated on the plans to lose electrical service.
41. The Contractor shall maintain the integrity of the existing roadway lighting systems until such time that the new roadway lighting system is made active.
42. Light pole foundations designated to be removed shall be removed to a depth of at least 2 ft. below finished grade.
43. Separate contracts will be ongoing within the limits of the project. The Contractor shall not hinder the work being performed by other contractors and shall cooperate and coordinate the work of this project with the other contractors.

44. The luminaires supplied for this project shall produce an average illuminance of approximately 0.6 to 0.8 foot-candles, with no point on the roadway surface below 0.2 foot-candle and a minimum to average uniformity ratio of 3:1 or better when calculated using 250W H.P.S. Type II, medium, semi-cut-off luminaires with 27,500 lumen bulbs and a light-loss factor of 0.65, mounted as shown on the plans.