

## Chuck Wooten

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**From:** Chan, Paul K  
**Sent:** Tuesday, March 03, 2015 12:52 PM  
**To:** jacksoncomgr@jacksonnc.org  
**Cc:** Lockhart, Natalie N; Houser, Anthony A; Moore, Lee A; Stutts, David S; Bob Mabry (bob.mabry@duke-energy.com); Hall, Greg  
**Subject:** Bridge Lighting Conduit (Project B-4159)  
**Attachments:** B-3864 ECS Plansheet.pdf; U-5008 ECS Plansheets.pdf

Mr. Wooten,

I am writing to seek Jackson County's input for the embedded electrical conduit system (ECS) for bridge lighting in Project B-4159. The project has a 300-ft long bridge over Tuckasegee River on Old Cullowhee Rd.

According to NCDOT standard design practices for bridge lighting ECS, one 1.5" conduit will be embedded either inside the parapet or under the sidewalk, and each bridge light will be served through a 12" x 12" x 6" junction box installed either in the parapet wall or in the sidewalk. Please see attached example ECS project plans for B-3864 in Johnston County.

Duke Energy ECS Specs for bridge lighting called for two 3" conduits, one 2" conduit, and a 36" x 24" x 9" junction box to accommodate these multiple and larger conduits. See example ECS plans for Project U-5008 in Charlotte that was designed to adhere to Duke Energy Specs.

Based on typical agreements between NCDOT and a Municipality or a County, the standard NCDOT ECS for bridge lighting and light pedestals will be included as a lump sum to the structure cost, at no cost to the Municipality/County. This is typically negotiated between the Municipality/County and PEDAs during early phases of the development of the project. The estimated cost for the NCDOT ECS is \$22 per ft. When the ECS must be installed according to Duke Energy Specs, the Municipality/County will have to reimburse NCDOT for the ECS betterment cost. The estimated cost for the Duke Energy ECS is \$60 per ft, so the ECS betterment cost is \$38 per ft. The total betterment cost for the subject ECS is estimated to be \$22,800.

The Municipality/County could avoid using the Duke Energy specs if they are willing to purchase the poles and fixtures outright and assume maintenance of the lighting system installed on the bridge. In many cases, the smaller Municipalities/Counties do not have the forces available to assume maintenance and rely on a local electrical contractor to perform maintenance as needed. Where the Municipality/County is wholly rely on Duke Energy to provide, install and perform maintenance of the bridge lighting systems, the Duke Energy specs must be used. This is per Duke Energy and based on our past bridge lighting projects experiences with Duke.

Please let us know of County's thoughts in this matter as soon as possible as the Let day for this project is June, 2015.

Thanks,

Paul

Paul K. Chan, PE  
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