



SCOTE
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Ghost Lines Discussion

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Ghost Lines

We want pavement markings to be visible, retroreflective, clean, legible, durable and have an extending useful life, until



http://www.3m.com/wps/wcm/connect/7e201cfc-5ad1-4d9a-b8a3-7392f0efcb0a/1129083-Pavement-Markings_410x200.jpg?MOD=AJPERES&CACHEID=ROOTWORKSPACE-7e201cfc-5ad1-4d9a-b8a3-7392f0efcb0a-l8u5sL-



Ghost Lines

We want to remove them; cover them up or make a change



https://www.google.com/search?q=ghost+pavement+markings&biw=1440&bih=741&source=lnms&tbm=isch&sa=X&ved=0ahLUKewiboOY3_onNAHXNZj4KHc_FDREQ_AUIBigB&safe=active&ssui=on#safe=active&tbm=isch&q=ghost+lines+pavement+markings&imgsrc=BHHjyThAJDARM%3A



Ghost Lines

Added Capacity came with a few extra lines



Ghost Lines

This is on its second year after a road diet was completed. Converted a four-lane undivided into a 3 lane with center turn lane and bike lanes.



Will the ghost lines out live the pavement markings?



Ghost Lines

Here is an example of a ghost line on a pavement joint. In some cases, the pavement joints



Ghost Lines



Ruts were lines were removed, lines on old pavement joints, in a very active work zone. This issue was not specifically addressed in this Design Build Contract.

Solutions

Use More Tape

- + Easier to remove
- + Can change patterns without the ghost lines
- Costly compared to other marking materials.
- Poor application subjects the tape to coming up

Masking with Tape, Paint, etc.

- + Easy to apply, flexible
- Frequently ineffective because the contrast or durability.

Thin Overlay

- + Provides
- + Fills ruts
- + Provides smooth surface
- High cost especially for temporary conditions



Solutions

Improved Planning – Make permanent pattern changes during resurfacing

- + Cost are negligible
- + Does not require trying to mask or ignore old markings
- Requires waiting for the next resurfacing

Utilize High Performing Markings – Attempting to make the confusion less by having high performing markings in place to help drown out the ghost.

- + These markings typically cost more
- Ghost lines are still present

Black Polymer Surface Coating – Attempting Conceal the old markings and provide Contrast

- + Effective on covering all existing lines
- + Provides a “clean slate” for markings
- Does not fill ruts
- Cost is an issue, but significantly less than overlay



The “Problems” with Work Zone Pattern Changes

1) “Ghost Lines”- Poor Removal



2) “Confusion Patterns”-Scarring from Line Removal



3) “Deep Rutting”- Aggressive Removal



Work Zone “Pattern Masking” and/or “Performance” Pavement Markings



- Utilize Black Polymer Surface Coating to “Conceal” the old markings and provide “Contrast” for the “Performance Markings
- Installed across full width of roadway
- Goes down at 16 mils with added frictional elements.
- Cures in 10 min or less.
- 12 month duration
- Estimated Cost around \$0.12-\$0.15 per square foot

1st Project Demonstration-Wilmington

Before



After



Work Zone Performance” Pavement Markings



- Performance Markings include Epoxy, Polyurea and Single Component Polymer Paints, Thermoplastic and Tape.
- All Lines are 6” widths
- Have initial, 6 month and 1 year retroreflectivity requirements
- Retroreflectivity of markings will be scanned by Mobile Scan companies
- All materials have required 12 month durations.
- Estimated Cost around \$0.25-\$0.50 per linear foot

Pilot Projects

- I-3802B Rowan County: I-85 widening from Exit 63 (Lane Street) to Exit 68 (US 29/601)- 5 miles
- I-5504 Buncombe County: I-26 from (MM 32) to NC 191 (Exit 33)- 1.5 miles



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Questions

