



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

November 21, 2014

MEMORANDUM TO: Gary R. Lovering, PE.
Roadway Design Project Engineer

Paul Atkinson, PE
Hydraulic Project Engineer

FROM:

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MAM

John L. Pilipchuk, LG, PE
State Geotechnical Engineer

DocuSigned by:

John L. Pilipchuk

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STATE REFERENCE: R-5021
STATE PROJECT: 41582.1.1
COUNTY: Brunswick
DESCRIPTION: NC 211 from SR 500 (Midway Road) to NC 87
SUBJECT: Geotechnical Report

The Geotechnical Engineering Unit has reviewed and presents the following report prepared by Catlin Engineers and Scientists for the above referenced project.

X Preliminary Geotechnical Recommendations (2) pages

N/A Roadway Inventory () pages

N/A Roadway Recommendations () pages

Please call J. Lee Stone, PG (252) 355-9054 or Thein Tun Zan, PE at (919) 662-4710 if there are any questions concerning this memorandum.

Attachment

CC: Jamey Batts, P.E., Geotechnical Engineering Unit
Jackson Provost, P.E., Division Construction Engineer

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GEOTECHNICAL ENGINEERING UNIT
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<https://connect.ncdot.gov/resources/Geological/Pages/default.aspx>

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November 21, 2014

Memorandum To: John Pilipchuk, LG, PE
State Geotechnical Engineer

From: Steven V. Hudson, LG
CATLIN Project Geologist

State Project: 41582.1.1 (R-5021)
F.A. Number: STP-0211(21)
County: Brunswick

Description: NC 211 from SR 500 (Midway Road) to NC 87

Subject: Preliminary Geotechnical Recommendations for Right-of-Way and Hydraulic Design

CATLIN Engineers and Scientists has reviewed the roadway plans dated March 20, 2015 and provides the following recommendations for right-of-way (ROW) and hydraulic design.

Slopes

Recommend that all slopes be constructed at a ratio of 3:1 (H:V) or flatter.

Special Ditches

Due to seasonal high ground water and poor drainage conditions, a special ditch is recommended at the following locations:

| <u>LINE</u> | <u>STATION +/-</u> | <u>LOCATION</u> |
|--------------------|---------------------------|------------------------|
| -L- | 47+00 to 64+00 | Left Side |
| -L- | 47+00 to 57+21 | Right Side |
| -L- | 86+50 to 100+74 | Left and Right Side |
| -L- | 144+80 to 152+60 | Left and Right Side |
| -L- | 221+00 to 225+50 | Left and Right Side |
| -L- | 227+45 to 237+95 | Left Side |
| -L- | 226+45 to 242+20 | Right Side |

| <u>LINE</u> | <u>STATION +/-</u> | <u>LOCATION</u> |
|-------------|--------------------|---------------------|
| -L- | 401+00 to 419+69 | Left and Right Side |
| -Y- | 12+30 to 30+37 | Left and Right Side |
| -Y3- | 13+01 to 15+50 | Left and Right Side |
| -Y4- | 11+20 to 12+00 | Left Side |
| -Y22- | 14+00 to 23+20 | Left or Right Side |


The bottom of the ditch should be at least 5.0 feet below subgrade at the edge of the proposed pavement.

Underdrains may be used in lieu of special ditches in areas where ROW is a concern.

If you should have any questions or need additional information, please feel free to contact us at (910) 452-5861.


Sincerely,



DocuSigned by:

 62EFD88181E445F...
 11/24/2014

Steven V. Hudson, LG
 CATLIN Project Manager



DocuSigned by:

 7D9CE6DDE1D8462...
 11/24/2014

Jacob C. Wessell, PE
 CATLIN Project Engineer

Cc: J. Lee Stone, LG, Project Geological Engineer
 Cheryl A. Youngblood, LG, Senior Project Geological Engineer
 Thein, T. Zan, PE, Geotechnical Engineer