Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

May 9, 2016

MEMORANDUM TO: J. Stuart Bourne, P.E.
State Traffic Management Engineer

ATTENTION: David Bissette, P.E.
Central WZTC Engineer

FROM: DS KK John L. Pilipchuk, L.G., P.E. DocuSigned by: John L. Pilipchuk 52C44B94B8BE444...
State Geotechnical Engineer

STATE PROJECT: 50125.1.FS1 (I-5710)
F. A. PROJECT: NHPP-0540(030)
COUNTY: Wake
DESCRIPTION: West Bound Ramps Along I-540 at SR 1839 (Leesville Road), NC 50 (Creedmoor Road), SR 1005 (Six Forks Road), and SR 2000 (Falls of the Neuse Road)

SUBJECT: Temporary Shoring Recommendations

The Geotechnical Engineering Unit (GEU) has received the following proposed temporary shoring locations for the referenced project:

Shoring Location No.	Begin Station & Offset	End Station & Offset	Estimated Average Height	Estimated Maximum Height	Shoring Location Type
No. 1	-RB4- 8+50± 16' LT	-RB4- 14+00± 20' LT	6.735'	10.0'	Roadway

The GEU recommends the following notes on plans for the proposed shoring locations:

<u>Shoring Location No. 1</u>

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -RB4- 8+50±, 16 FT LEFT, TO STATION -RB4- 14+00±, 20 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = N/A

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -RB4- 8+50±, 16 FT LEFT, TO STATION -RB4- 14+00±, 20 FT LEFT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -RB4- 8+50±, 16 FT LEFT, TO STATION -RB4- 14+00±, 20 FT LEFT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -RB4- 8+50±, 16 FT LEFT, TO STATION -RB4- 14+00±, 20 FT LEFT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

The GEU recommends including the Temporary Shoring provision, Standard Shoring provision and Temporary Soil Nail Walls provision in the contract for the referenced project. Standard shoring details have been transmitted under a separate cover. Please contact Jinyoung Park, P.E. or Jamey Batts, P.E. at (919) 662-4710 if there are any questions concerning this memorandum.

NORTH CAROLINA PROFESSIONAL SEAL 032171 ENGINEER JINYOUNG PARK

DocuSigned by:
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5/9/2016

Jinyoung Park, P.E.
Senior Geotechnical Engineer

JLP/JRB/JYP

Attachments: Standard Shoring Provision
Temporary Soil Nail Walls Provision