

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

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Northwest Corridor Project
PI No. 714130

OFFICE Materials and Research
Forest Park, GA.
DATE January 22, 2010

FROM *Z.S. for*
Georgene M. Geary, P. E., State Materials and Research Engineer

TO Darryl Van Meter, P. E., Innovative Program Delivery Engineer
Attn: John Hancock, Program Development Design Group Manager

SUBJECT Bridge Foundation Investigation Review
I-75 Reversible Lanes over Windy Hill Road – Bridge 13

As requested, we have reviewed the Bridge Foundation Investigation report, dated December 3, 2009, prepared by Willmer Engineering Inc. for the aforementioned site. We recommend as follows:

- 1. Subsurface Features:** According to the boring logs, fill was encountered. We recommend correcting accordingly.
- 2. PWR and Auger Refusal Elevations:** The top of PWR elevations are not correct according to the boring logs. We recommend correcting as follows:

Boring No.	Top of PWR
B-81	915
B-82	924
B-91	962

- 3. Maximum Pile Design Loads:** We recommend a load transfer of 80% end bearing and 20% friction.
- 4. Foundation Recommendations:** We recommend a pile footing instead of a drill shaft at Bent 5 with pilot holes to elevation 899. A spread footing can be an alternate with a bearing of 5 ksf on dense soil. Also, a spread footing can be used as an alternate at Bent 11 with a bearing of 6 ksf on dense soil.

5. **Elevations:** We recommend deleting the elevation for the drill shaft and using a spread footing. We recommend the bottom of footing and minimum tip be changed as follows:

Elevations				
<u>BENTS</u>	<u>BOTTOM OF SHAFT</u>	<u>BOTTOM OF FTG</u>	<u>MINIMUM TIP</u>	<u>ESTIMATED TIP</u>
1			925	
5		912 or below (Alt.)	862	
7			893	
8			866	
9			884	881
10			923	
11		955 or below (Alt.)		
12			955	
13				
16			936	
17			926	
20 - Right			949	

Also, the “±” symbol from all the minimum and estimated tip elevations should be removed.

6. **Points:** Points are needed at Bent 2, 8, 10, 12, 13, 15, 16, 17, 18, 23 & 24.
7. **Pilot Holes:** Pilot holes are only needed at Bent 5 to elevation 899. Delete Bent 16 pilot holes from the report.
8. **Temporary Shoring:** We recommend changing “will be” to “may be”.
9. **MSE Walls:** According to the elevation plan sheet, walls are proposed for the end bents. The MSE walls should be referenced on the elevation plan sheet and indicated on the boring logs. Also, soil parameters for the MSE walls should be provided unless they are included in a separate report.
10. **Drilled Shafts:** We recommend using a spread footing instead of a drill shaft at this location. Therefore, we recommend this drilled shaft section be removed from the report. Also, the Special Provision 524 will need to be taken out.

This report should be revised and resubmitted to this office for further review.

If additional information is needed, please contact Nancy Smith of the Geotechnical Engineering Bureau at 404-363-7546.

GMG: NFS

Copy: Paul Liles, P. E., State Bridge and Structural Design Engineer