



SOUTH CAROLINA
DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
P O BOX 191
COLUMBIA S C 29202

November 26, 1990

MEMORANDUM TO DESIGN GROUP LEADERS & CONSULTANT COORDINATOR:

Subject: Geotechnical Design and Review Policy

The Bridge Design Office has recently established a geotechnical design unit in order to gain expertise and consistency in the design of structure foundations. The Bridge Geotechnical Engineer will have general responsibility for the review of foundation designs, pile driving equipment approvals, and the collection of geotechnical data for the Bridge Design Office. He may also monitor drilling of bore holes, soils testing, pile load testing and pile installation at his discretion.

In order to define the responsibilities of this unit and its relationship to the in-house design groups and the Consultant Coordinator, the following policy is established for "in-house" designs and consultant designs.

IN-HOUSE DESIGNS

BORINGS: The design group will present 4 sets of preliminary plans to the Bridge Geotechnical Engineer as early in the plan preparation process as practical in order that borings may be requested. It will be the Bridge Geotechnical Engineer's responsibility to review the preliminary plans relative to geotechnical matters and to submit a formal request for subsurface exploration and soils testing to the Research and Materials Engineer. Boring logs and soils data, when received from the Research and Materials Engineer, shall be reviewed by the Bridge Geotechnical Engineer for completeness then passed to the design group for inclusion in the plans. The design group will be responsible for the plotting and checking of the borings.

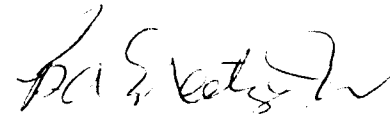
DESIGN: After the borings have been plotted the design group should consult with the Bridge Geotechnical Engineer as to the appropriate foundation type to be considered in design. The design group will make a static analysis of the proposed foundation. In addition, a driveability analysis using the wave equation should be made for pile foundations. These analyses need not receive an independent check within the design group. The completed analyses and plan and profile with the plotted borings will be submitted to the Bridge Geotechnical Engineer. Upon completion of an independent check of the foundation design the Bridge Geotechnical Engineer will submit his recommendation to the design group. The design group will incorporate the recommendations into the plans.

CONSTRUCTION SUPPORT: Pile driving equipment submitted by the Contractor shall be logged and reviewed by the Bridge Geotechnical Engineer who will forward it to the responsible design group. The design group will make a wave equation analysis of the pile driving equipment and submit the results to the Bridge Geotechnical Engineer. The Bridge Geotechnical Engineer will check the analysis and make a recommendation to the Bridge Construction Engineer along with any necessary driving information.

CONSULTANT DESIGNS

The Bridge Geotechnical Engineer will have an advisory role in the review and monitoring of consultant projects. The Bridge Geotechnical Engineer will review the scope of service with regard to geotechnical service for consultant agreements. Preliminary and final geotechnical reports, boring layouts, pile load test specifications, preliminary and final plans showing foundations, and construction specifications should also be submitted to the Bridge Geotechnical Engineer for his review. The level of review required will be subject to the Bridge Geotechnical Engineer's discretion. After review, comments and recommendations will be made to the Consultant Coordinator.

The Consultant Coordinator, with the advice and recommendations of the Bridge Geotechnical Engineer, will be responsible for formulating the Department's position on geotechnical matters relative to individual projects and transmitting the same to the design consultant and other concerned parties. Meetings with the design consultants, geotechnical subconsultants and/or FHWA which specifically address foundation and geotechnical aspects of a project should include the Bridge Geotechnical Engineer. During construction, the Bridge Geotechnical Engineer will review the design consultant's driveability analysis of the Contractor's pile driving equipment.



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Bridge Design Engineer

cc:
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