



## Geotechnical Reports as Contract Documents?

By Bart Miller, P.E.

There are various methods for incorporating the recommendations of Geotechnical Reports into structural drawings and specifications, and for engaging the Geotechnical Engineer in the design process. Invariably, Structural Engineers extract pertinent design and construction information from Geotechnical Reports to use as the basis for foundation-related design and detailing directives included in contract documents. Often, Geotechnical Reports are provided to the contractor as a reference document. Structural Engineers may also request or require the Geotechnical Engineer to review structural drawings and specifications to confirm the correct interpretation of geotechnical recommendations. In some areas, Geotechnical Engineers even provide signed and sealed specifications, usually for earthwork, piers, piles, etc., to be included with the contract documents. However, under no circumstances should Structural Engineers specify the Geotechnical Report itself to be a contract document.

### Common Misconceptions

Some argue that specifying Geotechnical Reports as contract documents creates the following perceived benefits:

- Ensures that the Geotechnical Engineer will be held responsible for the accuracy of the geotechnical recommendations;
- Absolves the Structural Engineer of responsibility for any inaccurate soil-related provision that comes directly from the geotechnical report;
- Eliminates the possibility of transferring information incorrectly or incompletely, and reduces the likelihood of misinterpretation by the Structural Engineer;
- Saves the Structural Engineer time in copying information from the Geotechnical Report into his drawings and specifications.

The first two “benefits” wrongly assume that the Geotechnical Engineer is not responsible for his/her work if the report is not a contract document, or that the Structural Engineer will be held directly responsible for precisely following recommendations from a Geotechnical Report. Neither is correct under normal circumstances. The Structural Engineer *does not* assume responsibility for the soil-related aspects of the foundation design by merely transferring Geotechnical Report recommendations into the contract documents. Similarly, specifying the Geotechnical Report as a contract document *does not* assign

additional responsibility to the Geotechnical Engineer for their own engineering work.

The Geotechnical Engineer is responsible for the soil-related recommendations used in the design of the building foundation. If those recommendations are later deemed not to meet the Standard of Care, as defined by what other Geotechnical Engineers would recommend in the same situation with the same data, then the Geotechnical Engineer is held to the same standard for the soil-related design recommendations as Structural Engineers are for the structural design of the foundations.

The second two “benefits,” while true to a degree, are insignificant compared to the very substantial risks the Structural Engineer may assume as a result. Saving a small amount of time during the design phase, or circumventing the responsibility for careful interpretation, does not offset the potential consequences.

### Risks

Geotechnical Reports, along with other consultant reports such as wind tunnel reports, snow and ice studies, etc., should never be specified as contract documents. Consider the following:

- Geotechnical Reports contain opinions and *alternative recommendations* (multiple foundation system options, slab on grade construction methods, etc.) from which a Structural Engineer may choose as the basis of the design depicted in the structural drawings and specifications. This non-specific information creates confusion for the contractor, who expects and requires specific directives.
- Geotechnical Reports are not written with the purpose of being included as a contract document and therefore *are not written in mandatory language*. Non-mandatory language creates ambiguity for the contractor in design and construction requirements.
- Because structural drawings are obliged to provide specific requirements in mandatory language, Geotechnical Reports, and structural drawings *will never completely agree*, which invites a claim by contractors citing contradictory information in the contract documents.
- If the Structural Engineer specifies the Geotechnical Report as a contract document, without the clear intent and written approval of the Geotechnical Engineer, then *the Structural Engineer may assume liability for its accuracy*.

Structural Engineers should reference Geotechnical Reports in structural drawings, commonly in the general notes or design criteria documents, to identify the source of information included in the contract documents pertinent to the foundation design. These reports should be made available to the construction teams as *reference documents*, but not contract documents. Structural Engineers should clearly indicate on the contract documents that the design team is not responsible or liable for the accuracy of the information presented in the Geotechnical Report, as is consistent with established legal precedent and the Standard of Care.

### Interpretation

Structural Engineers are responsible for interpreting various consultant reports and then specifying precise design and construction requirements. Perhaps no consultant report is more prone to misinterpretation leading to construction claims than the Geotechnical Report.

Because the contractor is only bound to information included in the contract documents, Structural Engineers must recognize the importance of reading Geotechnical Reports completely and carefully, and editing structural drawings and specifications to match. Many Structural Engineers start with “typical” details and boiler-plate specifications encompassing information for a variety of soil types and ground conditions that require vigilant editing to be consistent with soil conditions defined in the Geotechnical Report. Without proper editing, not only will the contract documents not reflect the appropriate soil conditions and requirements for the project, but the Structural Engineer may become liable for the content in the structural drawings and specifications that does not meet Geotechnical recommendations.

Structural Engineers should consider requesting or even requiring the Geotechnical Engineer to review and comment on the structural drawings and specifications as they pertain to site preparation, foundation systems, and slabs on grade. In general, early and consistent communication with the Geotechnical Engineer will ensure the proper interpretation of the Geotechnical Report and improve the overall documentation of the foundation design. ■

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