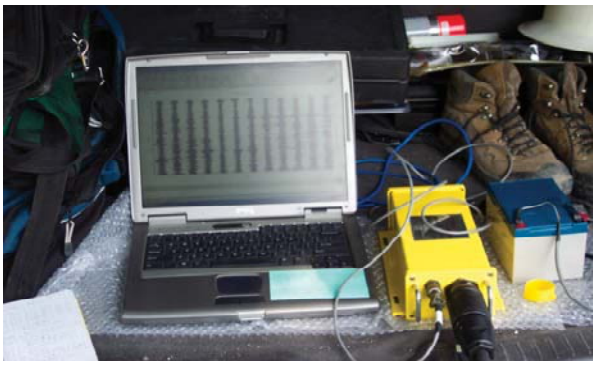
# GeoConcepts Engineering, Inc.

## ReMi (Refraction Microtremor) Survey Line Item to Aid in Determination of Seismic Site Class per the International Building Code (IBC) for Design Phase Projects



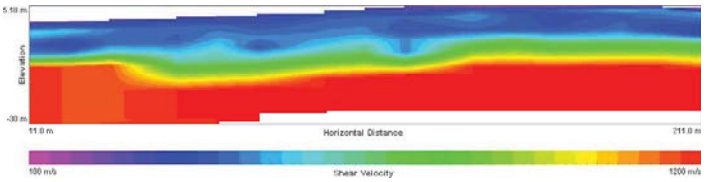
**GeoConcepts Engineering, Inc.** has recently purchased a 12-channel ReMi (Refraction Microtremor) recording system and accessories from Optim™ software and data solutions. **The use of the ReMi system has frequently provided a less conservative seismic site classification than those obtained from SPT N-value based tables provided in the IBC. The result is a significant reduction in construction costs associated with structural seismic stability**.

The ReMi system enhances GeoConcepts' design phase services capabilities by determining the seismic site classification per the International Building Code (IBC) for our subject sites. In many cases, the use of traditional soil test borings to determine the seismic site classification results in an excessively conservative classification, which in turn leads to higher than necessary structural costs.

The ReMi method can model shear wave velocities (Vs) of the subsurface profile in one dimension (depth sounding) from the dispersion of surface wave (Rayleigh Wave) velocities to a depth of 100 feet below existing ground surface. This method focuses on obtaining an average Vs for the "site" or Vs100. The average Vs100 is then compared to industry accepted tables in the IBC to aid in assigning a seismic site class of A through F. Intrusive testing is not required and damage to existing pavements or structures will not result from ReMi testing. ReMi can be used on virtually any surface including grass, soil, rock, asphalt or concrete (up to 6" in thickness).

The 1-dimensional ReMi survey results will include a shear wave velocity model for each linear transect which plots velocity vs. depth to 100 feet below existing ground surface and a value for Vs100 which is the average shear wave velocity to 100 feet below ground surface. The number of required ReMi transects at a particular site will vary and will be based on a number of factors including size/distribution of the proposed building area(s) and structures, proposed land use, subsurface conditions, or other factors to be determined on a case by case basis.

ReMi can also be used to obtain 2-dimensional profiles of modeled shear wave velocity by lining up 1-dimensional measurements to aid in evaluating subsurface conditions for applications including evaluating the presence/extent of high plasticity/expansive soils, mapping the bedrock surface (top of rock), evaluating liquefaction potential, dynamic deep compaction (DDC) evaluation, locating buried mines/shafts, karst conduits, etc.




**Example of a 2-dimensional ReMi Profile (with topography) Displaying Modeled Shear Wave Velocities**

Fees may vary based on site location, conditions, and proposed construction. Generally, a summary report with the recommended seismic site classification can be provided in about 3 to 5 days from the completion of the field work.

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**If you have additional questions or would like more information on this service, contact Mr. Drew Thomas or Ms. Ashley Hogan:**
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