

Seismic Information Request

PROJECT INFORMATION			
Project ID:			
County:		RPG¹:	Route:
Description:			
Latitude (4 decimals):	.	Longitude (4 decimals):	.
SEISMIC REQUEST			
<p>The SCDOT <u>Geotechnical Design Manual</u> (GDM) and <u>Seismic Design Specifications for Highway Bridges</u> (Seismic Specs), latest editions, provide detailed seismic design requirements for transportation structures. The Office of Engineering Support Geotechnical Design Section (OES/GDS) will be generating seismic design information from, SCENARIO_PC, the seismic analysis software. The OES/GDS will provide the completed 3-Point curve based on the information provided on this form in general accordance with the procedures contained in the GDM. The 3-Point curve will be for 5% critical damping and will be based on either the B-C Boundary (Geologically Realistic) or Hard Rock Outcrop for specific project locations within South Carolina. The Site Geologic Condition shall be determined using the guidance contained in the GDM, which is summarized in the following statements. The Geologically Realistic option is for sites in the Coastal Plain with a sediment thickness greater than 330 feet to sediment having a $V_s \geq 2,500$ feet per second (ft/s) (NEHRP B-C Boundary). Geologically Realistic conditions can also be encountered outside of the Coastal Plain where the sediment thickness is 330 feet or less above the basement rock and the $V_s \geq 8,200$ ft/s. The Hard Rock Outcrop option is for an outcrop of hard rock ($V_s \geq 11,500$ ft/s). The GDM contains a map to assist in determining the Site Geologic Condition. South Carolina is divided in 2 zones, Zone I – Physiographic Units Outside of the Coastal Plain and Zone II – Physiographic Units of the Coastal Plain. The provided 3-Point curve shall include both the FEE and the SEE events since all bridge embankments are required to be designed for both the FEE and SEE. For ERSs located within the roadway embankment only the SEE will be used; however, if in the opinion of the design team a 2-level design should be performed. The OC and Bridge Seismic Level of Design shall be determined as defined in the Seismic Specs and shall be provided by the design team. The Consultant shall use Geologically Realistic Site Conditions and provide the V_s profile to the B-C Boundary (Coastal Plain) or to the depth where V_s is less than 11,500 ft/s (Piedmont), provided the depth criteria previously indicated are met. However, if V_s greater than or equal to 11,500 ft/s ($V_s \geq 11,500$ ft/s) is encountered at the ground surface or within 100 feet of the existing ground surface then the Hard Rock Outcrop geologic condition shall be used. All V_s profiles are to be provided digitally in an Excel[®] format to SCDOT and shall at a minimum provide the depth, V_s and unit weight at each depth. In addition, the spreadsheet shall also indicate the test location designator. M_w and R shall be determined by the OES/GDS using the procedures outlined in the GDM since this data is now obtained from SCENARIO_PC. To facilitate developing V_s Profiles to the appropriate depths, SCDOT has placed on the Geotechnical Webpage of the SCDOT Website a map indicating the location of representative V_s profiles along with the information for each location. If additional information is needed, contact the appropriate OES/GDS. This is the condition that is anticipated being encountered on most project sites.</p>			
SITE GEOLOGIC CONDITION			
Geologically Realistic V_s Profile to the B-C Boundary Provided <input type="checkbox"/> V_s Profile to $V_s \leq 8,200$ ft/s Provided <input type="checkbox"/>		Hard Rock Basement Outcrop V_s Profile to $V_s \geq 11,500$ ft/s Provided <input type="checkbox"/>	
REQUESTOR INFORMATION			
Requestor Name:			
Company Name:			
Phone Number:	() -		
Email Address			
Request Date:			

¹RPG – Regional Production Group

- 1 – Beaufort, Berkeley, Charleston, Colleton, Dorchester, Hampton, Jasper
 - 2 – Chesterfield, Clarendon, Darlington, Dillon, Florence, Georgetown, Horry, Kershaw, Lee, Marion, Marlboro, Sumter, Williamsburg
 - 3 – Aiken, Allendale, Bamberg, Barnwell, Calhoun, Chester, Fairfield, Lancaster, Lexington, Newberry, Orangeburg, Richland, Union, York
 - 4 – Abbeville, Anderson, Cherokee, Edgefield, Greenville, Greenwood, Laurens, McCormick, Oconee, Pickens, Saluda, Spartanburg
- Design-Build – D/B**