A set of profiles were created to be used in the assessment of different model types for determining dynamic amplification.

The profile length was such that it could fully cover the longest vehicle path, including approach. Since the longest test-case bridge was 280 feet long with a 320 foot long approach, requiring a minimum profile length of 600 feet. The test-case profiles were therefore created with a total length of 650 feet.

One profile was obtained from measurements of an existing roadway over a bridge (I76). All other profiles were generated according to ISO 8608 standards. This standard essentially sums sinusoidal functions with amplitudes set according to PSD parameters. These parameters defined by the standard include a waviness value and the amplitude of the PSD function at a spatial wavelength equal to 10 meters.

The profiles were created using the following parameter set:

|  |  |
| --- | --- |
| Waviness | {2, 3, 4} |
| C10 (\*10-6) | {300, 600} |

Full factorial sampling of the above parameter sets yields 6 profiles, however, each profile generation will be completed twice with different phase angles (reseeded random number generator for random uniform distribution). Therefore a total of 13 test case profiles will be examined (1 real profile, 12 artificially generated).