# NDT&E Tech Brief

## Define "Typical"

Architectural historians relate that Portland Cement was invented in 1824 by Joseph Aspdin, reinforced concrete was invented in 1849 by Joseph Monier, and the nascent American Concrete Institute published its first standards in 1907. Today, the notation "OC TYP" ("on center typical") has become ubiquitous on architectural and engineering drawings to indicate the spacing of reinforcement bar (rebar) within concrete.



On older structures where the drawings are unavailable, and on new structures where the construction is suspect, test agencies are asked to use non-destructive testing and evaluation (NDT&E) methods to determine the actual "typical" rebar spacing. Detecting two bars and declaring the distance between them to be "typical" would be incomplete and potentially dangerous.

Fortunately, a distinct advantage of NDT&E equipment such as ground penetrating radar (GPR) is its capability of gathering data quickly and accurately over an extended area.
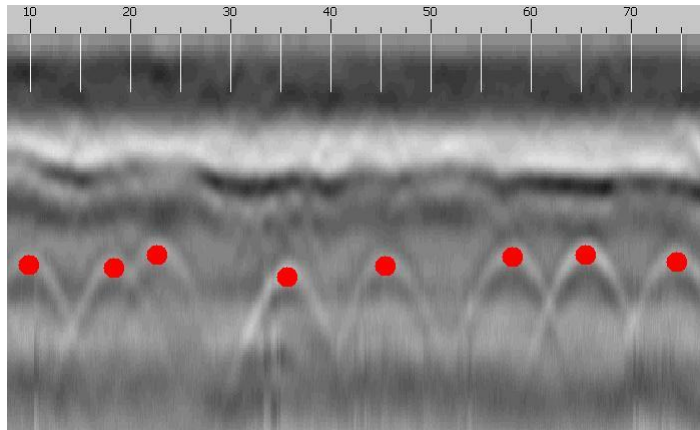
Back in the test agency's office, the locations of rebar are easily read off of the GPR profiles (see example) and input into a spreadsheet. Simple subtraction indicates the distance between each, and spreadsheet functions provide the minimum, maximum, mean (average) and median spacing. This provides important information about the quality of construction, and may lead to a need for further investigation and inquiry.

This is our standard for the "typical" data we provide when a structural engineer asks us for rebar spacing. Whether your project is "typical" or not, feel free to contact me if you have any questions on how NDT&E can help you solve a problem. (For a list of all of the tests that SUPERSTRUCTURES provides, click here.)

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