

## OBJECTIVE

The objective of this project was to develop a repeatable, reliable time stable, lightweight test unit to measure the riding quality of pcc pavement at normal highway speed the day after construction.

## ACCELEROMETER CONCEPT

The IJK Ride Indicator is essentially a mechanical accelerometer with electrical contacts for data collection. It has proven the accelerometer concept for evaluating riding quality. A desirable goal is to eliminate mechanical parts and reduce maintenance.

There have been tremendous advances in the electronics of both data reduction (microprocessors) and accelerometers. The accelerometers are more precise, more durable and much smaller making them more versatile.

All previous road meter units were to operate at a constant speed while obtaining riding quality data. In theory, if the output from a commercially available accelerometer is properly processed, the resulting value would be independent of testing speed. A microprocessor would double integrate the analog signal to change the output from vertical acceleration to vertical displacement (Figure 2). This resultant displacement would then be summed (both positive and negative) and divided by the distance traveled by the test vehicle.