Technical Specifications for Slow Speed Weigh-In- Motion (SSWIM)

The slow Speed Weigh-In-Motion (SSWIM)/ Static Axle Load Scale should be a combination in-motion and static scale design for weighing at low speeds. One scale platform should be used per lane. The scales should incorporate the following features:

- The platform should be supported by shear beam load cells/ bars all pads should be identical for easy scale maintenance.

- The load cells/ bars should be of a totally sealed design to prevent intrusion by water, salt, dirt and other debris. The scale should be sealed along the frame contact using a flexible sealant. The scale vault should incorporate sufficient drainage to prevent water buildup under the scale platform. For this reason, a drain conduit should be installed during the pouring of the concrete vault.

- All connections within the load cells/ bar from the transducers should be sealed and potted forming a completely water resistant system. The signal cable from each load cell/ bar should be a single length of shielded cable, which should be sealed to the water-resistant military connectors on the load cells/ bars.

- The weigh-pad frames should be cast into a concrete vault.

- The scales should be fastened to the load cells/ bars with high strength bolts. The load cells/ bars should be fastened to the bearing pads with high strength bolts. All access holes on the scale surface should be sealed with expansion plugs allowing for easy disassembly.

- The scale platform must be anchored to the load cells/ bars, and must be flush with the road surface so it is not damaged by road maintenance such as sweeping and snow removal.

- The signal cable should be routed away from the scale vault through a rigid conduit. This conduit should be heat traced in cold climate to prevent ice accumulation in the scale pit.

- The scales and scale frames should be protected from lightning using ground rods.

- The load cells/ bars should be connected to the interface electronics for system operation.

- The SSWIM scale should accommodate a capacity of at least 30 tons per axle.

Loop Type Presence Detector.

The SSWIM scale shall include Loop Type Presence Detector Positioned to detect the presence of a vehicle and to detect the speed, no of axles and axle spacing of vehicle.

Interface Electronics

The SSWIM scale load bars should interface to the interface electronics through dedicated load cell interface card. The measured weights of load cells/ bars should be summed electronically to obtain the axle weights. The interface card should measure the scale signal at speeds of over 100 times per second for both dynamic and static weighing. The interface card should be easy to replace in the field.

Variable message board (VMS)

It is a LED based display unit. Can display up to 2 lines with 14 characters in each line.

Computer.

The Computer should run a software application to display the scale weight, perform weigh sessions, and print weigh tickets for enforcement or weight verification. The computer running the application should be no less than a Pentium 166 Mhz, 32 MB RAM, 2 GB HD, 3.5" 1.44 MB floppy drive, 3 interface slots (one used to interface to the SSWIM scale), with a full 104-key, AT style keyboard.

Monitor.

The weight information from the scale should be displayed on the computer monitor. The weights may be displayed "immediately mode", showing the current instantaneous weight on the scale. The weights may also be displayed as part of a static or dynamic weighing session, where the weights of each axle are displayed, recorded and printed.

Receipt Printer

There should be two different printers which be used in conjunction with the SSWIM / static scale system. One printer should be for printing the receipts and should be a SP312 Serial printer of equivalent, which allows

for multiple ticket copies to be printed at one time. The other printer should be for printing reports

EPSON TM-T88 Portable Printer with Self-Cutting

Type of paper	: Thermal universal
Paper Width	: 80 mm
Character Per Line	: 56 or 42
Speed of Printing	: 28 or 16 lines per second
Printing	: Unidirectional
Paper Cutter	: Automatic
Reliability	: 15,000,000 printed lines, 1,500,000 cuts of paper
Dimension	: 150 x 190 x 150 mm
Weight	: 1 kg.
Operating Temperate. Range	: 0 to 45 Celsius degrees

Having the internal paper roll and self-cutting lets the printer have an optimum operation. It is highly trustful and often used in hard application.