



## **MEDIUM SPEED WEGHINGH MOTION**



**PROPOSED BY:-**  
**Network Toll Solution**

# OVERVIEW

Network Toll Solution is please to submit this proposal for the supply installation and commissioning of Medium Speed Weigh In Motion (BENDING PLATE based) to support your organization in achieving his ultimate business goals through effective weighing and traffic controlling through this proposed installation of medium speed weigh in motion weigh bridges



# OBJECTIVE

In today's competitive Tolling segment especially monitoring and weighing the truck weight across tolls through medium speed weigh in motion weigh bridges through quality performance of WIM is a prime factor. Quality output from WIM depends upon the consistent and sustainable performance of each and every WIM's. For consistent and sustainable performance of WIM's one should have profound knowledge and mammoth experience in this manufacturing of weigh in motion weigh bridge with bending plate technology in order to maintain sustainable and uniterable performance of WIM. Procurement of WIM from NTS is a key factor. Manufacture of WIM requires certain expertise and specialized skills. Every Tolling industry may not have installed specialized equipped WIM.



# OBJECTIVE CONTINUES.....

At NTS we have the expertise and Mammoth experience in this in motion technology for decades together further to it we are the Indian Based firm manufacturing the WIM BENDING plate technology MAKE IN INDIA..." BEING LOCAL BE VOCAL" our professional work force spread wide across the country supports and caters the committed Toll management clients in maintaining the variants of WIM's as total technology of WIM Available with us in order to help our clients in getting the best throughout from the WIM. At NTS we have been setting benchmarks in delivering efficient and timely customer service across the country.



# TECHNICAL SPECIFICATION MEDIUM SPEED WEIGH IN MOTION



## SCOPE

The scope of supply covers Design, Engineering, Manufacturing, Supply, and erection, commissioning of Bending plate based Weigh in motion weigh bridges in India

## STANDARDS

The components of the Weigh Bridges will be designed, manufactured, assembled and tested as per relevant BIS standards

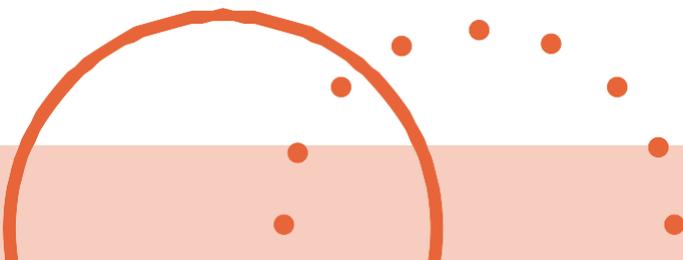
## GENERAL INFORMATION

<b>3. General Information</b>	
TYPE	: Bending plate based MSWIM
WEIGHING CAPACITY	: 30 / 40 / 50 TON / PER AXLE
EACH PAD CAPACITY	: 15 / 20 / 25 TON
AMBIENT TEMPERATURE	: 50 DEGREE CELCIUS
HUMIDITY	: 95%
NORMAL LANE	3.0 METER 3000MM (Customizable)
WIDE LANE	3.5 METER 3500 MM (Customizable)

# SPECIFICATION OF WEIGH BRIDGE

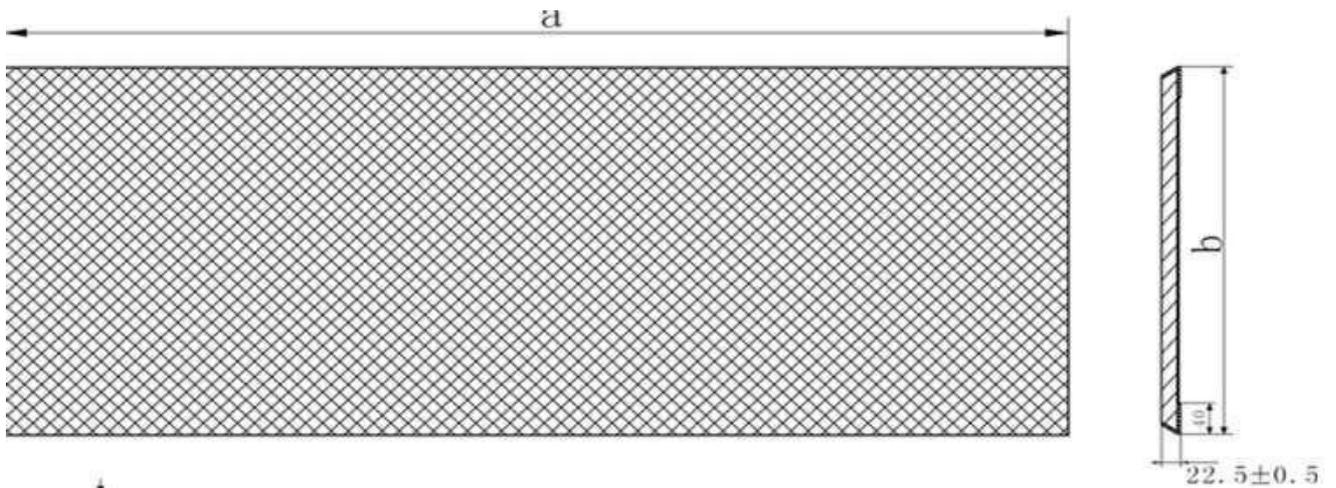
## 4. Specification of the Weigh Bridge

<b>(a) Type of Weigh Bridge</b>	<b>: Bending Plate based MSWIM</b>
<b>(b) Weighing Capacity</b>	<b>: 50 T Axle</b>
<b>(c) Load cell</b>	<b>: Straun Guage (Bending plate) 15/20/25 ton per pad</b>
<b>(d) Type of Weighing</b>	<b>: Individual axle based</b>
<b>(e) Weighing speed</b>	<b>: 1 to 65 kmph</b>
<b>(f) Direction of Weighment</b>	<b>: Bi Direction</b>
<b>(g) axle Load</b>	<b>: 50 ton T (Maximum)</b>
<b>(h) Calibration</b>	<b>: Automatic</b>
<b>(i) Increment</b>	<b>: Selectable 5/10/ 20 /50 /100 Kg</b>
<b>(j) Accuracy</b>	<b>: (+) / (-) 0.1 % FSR @ Static</b> <b>: (+) / (-) 1 % FSR @ 5 Kmph (Dynamic Mode)</b> <b>: (+) / (-) 3 % FSR @ 30 Kmph (Dynamic Mode)</b> <b>: (+) / (-) 7% FSR @ 50 Kmph (Dynamic Mode)</b>
<b>(k) Power Supply</b>	<b>: 230 V, + /- 10 %, single phase 50 Hz</b>



# PRIMARY TECHNICAL FEATURES

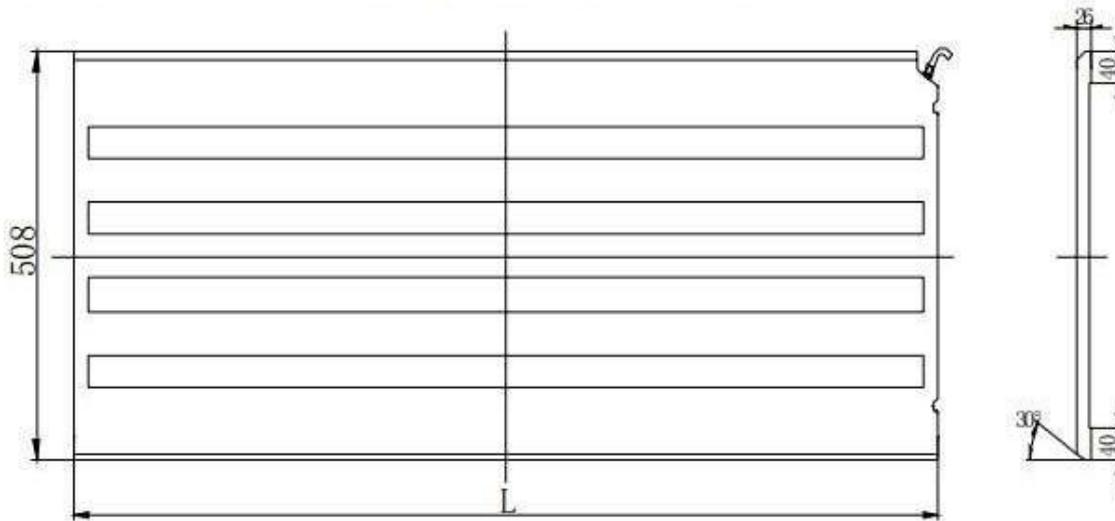
1. For reliability and long-term stability, the bending plate is used with better structure than other load pad scale.
2. With strain gauges working in  $-40^{\circ}\text{C}\sim 120^{\circ}\text{C}$ , and sulfured rubber sealed, bending plate can work in various temperature environments.
3. Our advanced manufacturing technique ensures that bending plate static precision can be less than 0.5%.
4. Compared with the traditional weighing pad, the bending plate has longer demission in the driving direction, which ensures a much higher accuracy in dynamic weighing.
5. No load cell is used, which greatly reduces both the structure complexity and the failure rate.
6. The bending plate is with so low profile as to reduce both easier installation and less damage to the road surface.



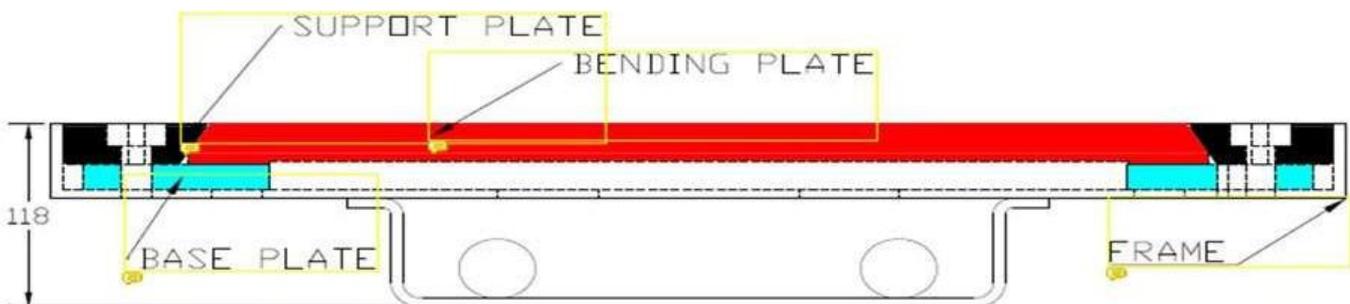
**Bending plate sensor material:**

High strength alloy steel through special heat treatment

The core electronic part is sealed by three layers of polyurethane and RTV silica gel, the whole body is sealed by high temperature vulcanized rubber, waterproof, grease proof and dust proof, anti-rust and wear resistance.



## BENDING PLATE / WEIGHING SENSOR ASSEMBLY



# WIM SPECIFICATION

## SPECIFICATION

<b>MSWIM structure dimension</b>	<b>: 1500mm X 510mm x 25mm</b>
<b>Capacity</b>	<b>: 30T / 40T / 50T Per Axle</b>
<b>Accuracy in static</b>	<b>: ± 0.1% verified Gross weight</b>
	<b>: ± 1% at speed up to 5 kph</b>
<b>In motion accuracy</b>	<b>:±3% at speed upto 25 km:</b>
	<b>±7% at speed upto 50km</b>
<b>Rated Axle load</b>	<b>: ≥ 50T</b>
<b>Safe overload</b>	<b>: 150%</b>
<b>Ultimate overload</b>	<b>: 300%</b>
<b>Maximum passing speed</b>	<b>: 65 Km/H</b>
<b>Static Accuracy OIML Class 5</b>	<b>: 0.05%</b>
<b>Dynamic Accuracy</b>	<b>: =/-7</b>
<b>Operating Speed</b>	<b>: 1 to 65 Kmph</b>
<b>Operating temperature</b>	<b>: - 29 deg to 165 deg F (-34 deg to 74 deg C)</b>
<b>Power Source</b>	<b>: 240 V AC and 12 V AC</b>
<b>Relative Moisture</b>	<b>: 95% RH</b>
<b>Controlling device protection class</b>	<b>: IP65</b>
<b>Weighing load cell / Strian guage protection class</b>	<b>: IP67</b>

## APPLICATIONS

1. Vehicle overload detection under high speed velocity
2. Vehicle high speed velocity detection
3. Dynamic vehicle weighing of weight-toll system in highway
4. Vehicle weighing at port or bridge.

## WIM JUNCTION BOX WITH STAND



## IR CURTAIN / VEHICLE SEPARATOR





# IR SPECIFICATION

ITEM	SPECIFICATION
Model	S2452 (CATEYE)
Optical axis number (beam)	52
Optical axis space	24mm
Detection height	1248mm
Min detection object	40mm
Detection range	3-18 m
Supply voltage	Light curtain : 24V DC±20%; heating glass : 15 ~ 30V DC
Supply current	Light screen : = 300mA ; heating glass : = 6A
Switch outputs	Transistor PNP/NPN , detection outputs and alarm outputs , 150mA max. (30V DC)
Indicator outputs	Working status light (red), heating glass and power light (red), receiving beam strength light (red and yellow each)
Response time	= 8ms (common parallel scanning)
Dimension	1362mm × 48mm × 46mm
Working environment	Temperature : -40? ~ 85? , max humidity : 95%
Housing material	Aluminum housing with black anodized finish; armored glass windows
Protection rate	IEC IP67

# WEIGHT PROCESSOR / WIM CONTROLLER



# WEIGHT PROCESSOR / WIM CONTROLLER

The W.I.M processor is the heart of the weighing equipment. The signals from the weigh platform are connected to the W.I.M processor. A high speed processor is used to process the data and to respond to the instructions from the main computer. The output of the W.I.M processor is connected to the computer. The weighing software from the computer will interact with W.I.M processor and the complete data of the vehicles is recognized. The following data of the vehicles is generated

- A. The total weight of the vehicle (GVW)
- B. Each individual axle weight
- C. Number of axles of the vehicle
- D. Date and time of the vehicle passed on the weigh in motion scale
- E. Speed of the Vehicle

The Digitizer will have microcontroller based circuitry with solid state integrated circuits to effect fast and reliable operation.. The Digitizer is constructed to the highest international standards, embodies the latest techniques and utilizes the best components to ensure highest possible reliability and integrity, even when used in harsh industrial environment. .The system can operate over a wide temperature range without affecting the accuracy and reliability the multiprocessor technology of the system allows independent processing of weight

Power Supply to the Digitizer will be 230V, (+) / (-) 10 %, 50 Hz, Single phase AC. A Voltage stabilizer / Line Conditioner will also be provided. The other features, facilities are detailed below

# WIM PROCESSOR CONTINUES.....

- (1). Modular construction
- (2) . Analog digital converter with filter
- (3) RFI /EMI signal protection to provide high level of signal integrity even in harsh Industrial environment.
- (4) Automatic zero maintenance.
- (5) Diagnostic facility
- (6) Auto calibration
- (7) Built in surge arrester for protection electronic circuits
- (8) RS 232 / TCIP interfaces
- (9) Option for operation of Weighing System with the help of Digitizer without the help of PC (in case of failure of PC)
- (10) Pass Word Protection
- (11).Auto / manual mode of operation of the system.
- (12). All the control logic in the system will be achieved through semi conductor devices and will be free of relay logic.

# WIM INSTALLATION

## WIM AREA MARKING



## AREA EXCAVATION



# WIM INSTALLATION

## SAND FILLING



## PCC



# WIM INSTALLATION

## FIRM FIXTURE OF OUTER FRAME



## ZERO LEVEL MAINTENANCE OF OUTER FRAME



# WIM INSTALLATION

## RCC MAINTANING ZERO LEVEL

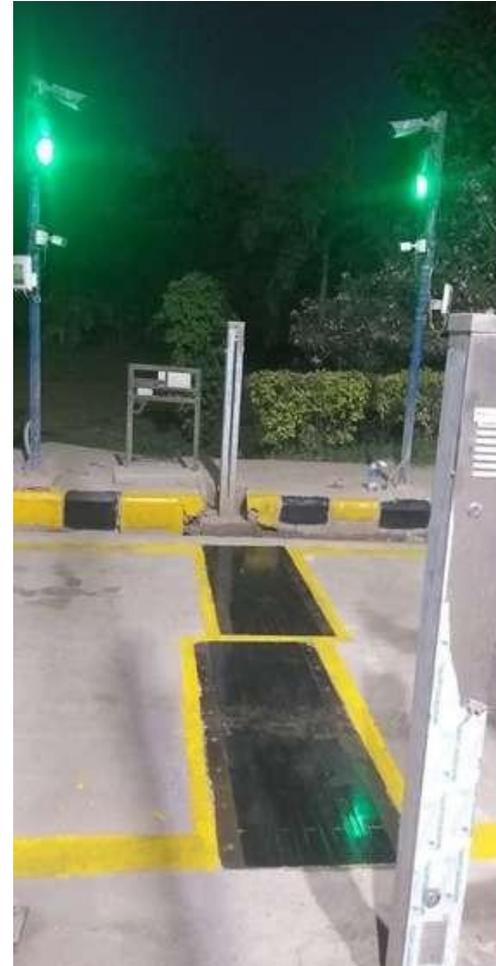


## INSTALLATION OF BENDING PLATES & IR FOUNDATION

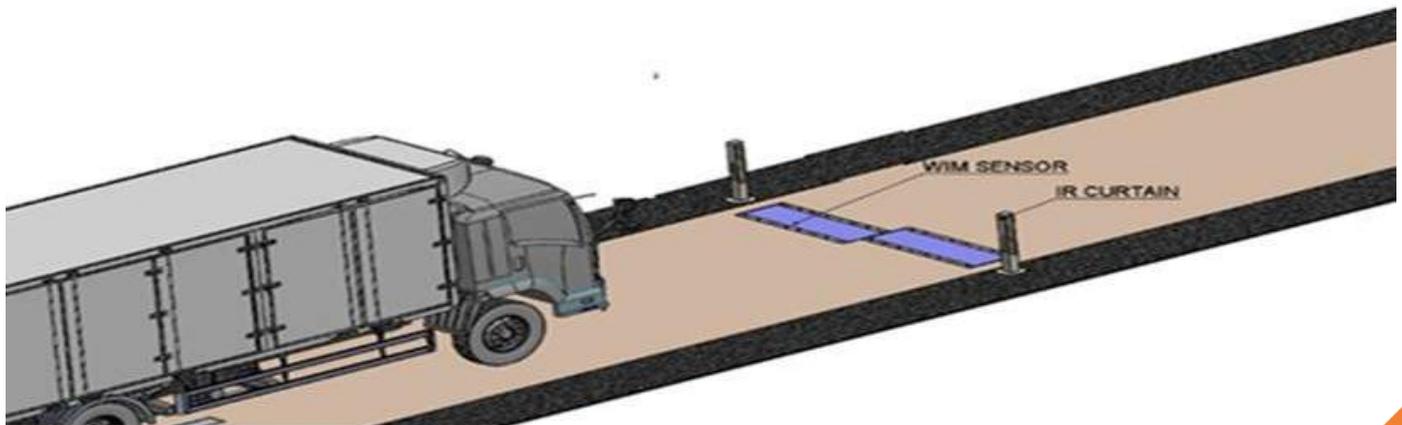
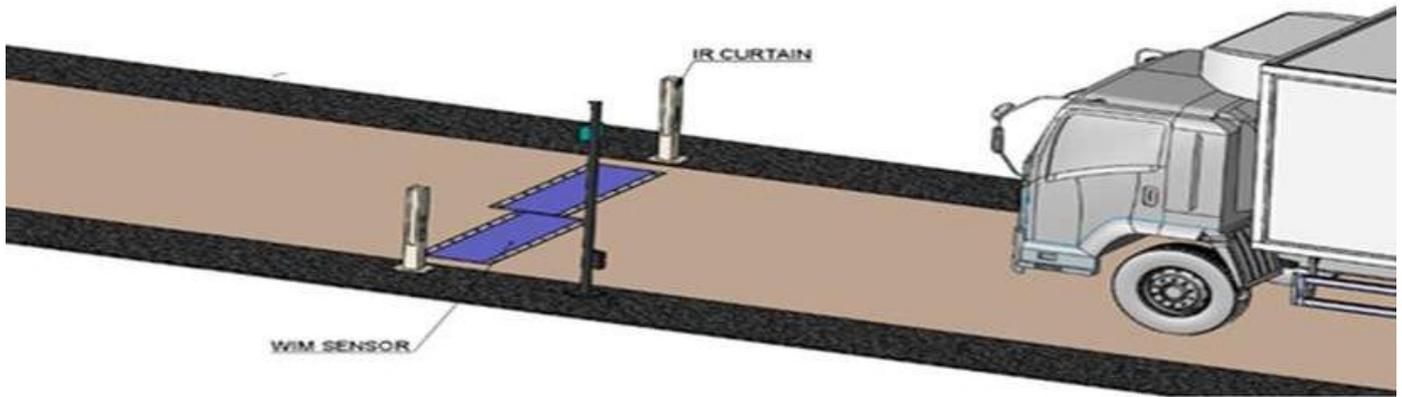
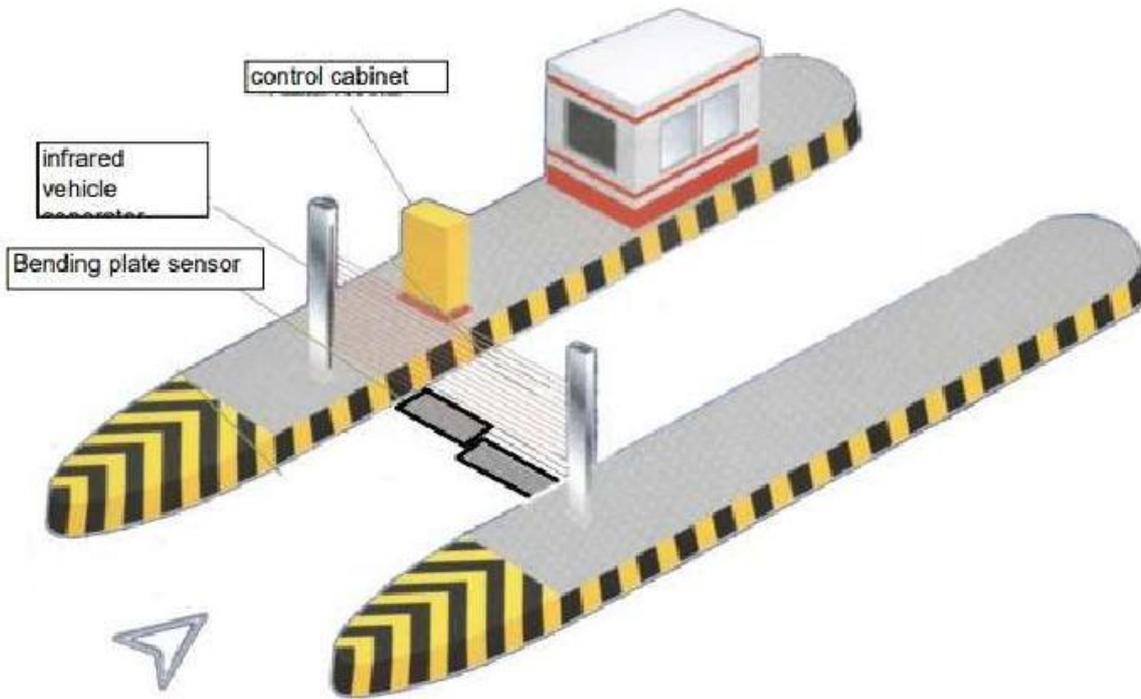


# WIM INSTALLATION

## AFTER INSTALLATION



# WIM OVERALL ARRANGEMENT

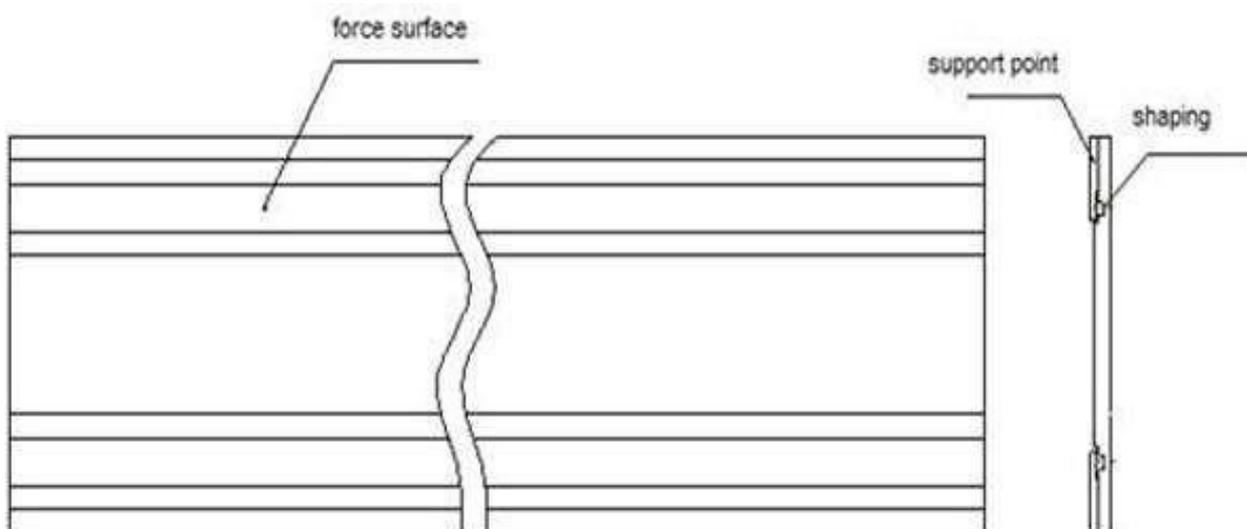


# BENDING PLATE / WEIGHING SENSOR



This bending plate is made of special steel. The bending plate has two upstanding beams to construct a strong boundary condition. When the vehicle drives through the effective areas of the bending plate, strain gauges installed will react to the shape change of the bending plate, which then can output an electronic signal for instruments to calculate the weight of the vehicle and to display it

## STRUCTURE DESIGN



## CONCLUSION:

I hope you'll find our offer more competitive. we would be ecstatic to have you as a customer we look forward to meeting you every business need. Let us know if we have left any question unanswered. we know our product is perfect much for your needs. If there is any more information we can provide please let us know

Note: The purchase order to be raised in favor of M/s Network Toll Solution.

# THANK YOU

WE LOOK FORWARD TO WORKING WITH YOU

I REMAIN

THANKS & BEST



**Network Toll Solution**

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