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**NATIONAL HIGHWAYS AUTHORITY OF INDIA  
(MINISTRY OF ROAD TRANSPORT & HIGHWAYS, GOVT. OF INDIA)**

Name of the work: **Road Safety works – Short Term Remedial measures for the Blackspot Locations identified by MoRT&H, rectification of Critical Crash Prone Locations and speed calming measures at pedestrian crossing locations to attain Zero Fatality corridor in NH-83 (old no. NH-209) from Km.123.550 to Km.150.580 of Dindigul – Bangalore Road (Pollachi to Coimbatore Section) in the State of Tamil Nadu**

**NHAI/RO CHN/PIU CBE/ Road Safety works/NH-83/2025-26/006**

**VOLUME - II**

Office of the DGM(T) & Project Director  
Project Implementation Unit - Coimbatore  
National Highways Authority of India  
(Ministry of Road, Transport & Highways)  
D.No.11/1, Kongu Nagar East, Ramanathapuram,  
Coimbatore – 641 045.  
Phone No: 0422-2324734, 2324735  
E mail:[nhaicoimbatore@gmail.com](mailto:nhaicoimbatore@gmail.com), [coimb@nhai.org](mailto:coimb@nhai.org)

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SECTION: IX

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BILL OF QUANTITIES

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The Appendix forms part of Bid. Bidders are required to fill up all the blanks in the form of Bid and Appendix thereto)

FINANCIAL BID FORM

To

Office of the DGM(T) & Project Director  
Project Implementation Unit - Coimbatore  
National Highways Authority of India  
(Ministry of Road, Transport & Highways)  
D. No.11/1, Kongu Nagar East, Ramanathapuram,  
Coimbatore – 641 045.  
Phone No: 0422-2324734, 2324735  
E mail: nhaicoimbatore@gmail.com, coimb@nhai.org

DESCRIPTION OF WORKS: Road Safety works - Short Term Remedial measures for the Blackspot Locations identified by MoRT&H, rectification of Critical Crash Prone Locations and speed calming measures at pedestrian crossing locations to attain Zero Fatality corridor in NH-83 (old no. NH-209) from Km.123.550 to Km.150.580 of Dindigul – Bangalore Road (Pollachi to Coimbatore Section) in the State of Tamil Nadu

Reference letter No. ....

Dear Sir,

Having examined the site of works and Bid Documents, comprising Instructions to Bidders, Scope of works, Conditions of Contract, Technical Specifications, Bill of Quantities and schedules for the execution of the above named works, we, the undersigned offer to execute and complete such works and remedy any defects therein in conformity with the said bid documents for the sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) or such other sum as may be ascertained in accordance with the said Bid documents.

2. We undertake, if our Bid is accepted, to commence the work within fifteen (15) days of receipt of the order to commence, and to complete and deliver the sections and whole of the works comprised in the Contract within the period stated in the bid hereto.
3. If our Bid is accepted, we will furnish Performance Security (ies) in the form of a Bank Guarantee / e-bank guarantee to be jointly and severally bound on us, in accordance with the Conditions of Contract.
4. We agree to abide by this Bid for the period of One Hundred & Twenty (120) days from the last date fixed for Bid Submission and it shall remain binding upon us and may be accepted at any time before the expiry of that period.

5. We confirm our agreement to treat the Bid documents and other records connected with the works as secret and confidential documents and shall not communicate information contained therein to any person other than the person authorized by the Employer or use such information in any manner prejudicial to the safety and integrity of the works.
6. Unless and until an agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding Contract between us, but without prejudice to your right to withdraw such acceptance without assigning any reasons thereof.
7. We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20---

Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_ duly authorized \*\* To sign

Bid for and on behalf of

(In block capital letters)

Address: \_\_\_\_\_

\_\_\_\_\_

Signature of Witness \_\_\_\_\_

Name of witness \_\_\_\_\_

Address of witness \_\_\_\_\_

\_\_\_\_\_

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\*\* Certified copy of Power of Attorney/authorization for signature shall be furnished by the bidder.

## Bill of Quantities

### 9.0 Preamble

9.01 The Bill of quantities shall be read in conjunction with the Instructions to Bidders, Conditions of Contract, Scope of Work and Specifications.

9.02 The quantities given in the Bill of quantities are estimated quantities. The basis of payment will be actual quantities of work indented and carried out and valued at the rates and prices tendered in the priced Bills of quantities, where applicable and otherwise at such rates and prices as the Engineer may fix within the terms of Contract.

9.03 The rates and prices tendered in the priced Bill of Quantities shall include all equipment, plant, tools, spares, labour, supervision, overheads, consumables, materials, erection, maintenance, testing of input material delivered, profit, taxes and duties together with all general risks, liabilities and obligations set out and implied in the Contract and other incidentals to comply with the requirements of technical specifications and scope of work.

9.04 The rates and prices shall be quoted entirely in Indian Currency.

9.05 A rate or price shall be entered as a single rate as Tender Premium above/ below on the amount in General Abstract.

9.06 The whole cost of complying with the provisions of the contract shall be included in the items provided in the priced Bill of Quantities and where no rates are provided the cost shall be deemed to be distributed among the rates and prices entered for the related items of work.

9.07 The Contractor shall keep the entire carriageway neat and clean throughout the contract period. The contractor shall maintain guardrails, railings, crash barriers, road furniture etc. in good condition by cleaning them frequently as advised / required by using suitable detergents/chemicals.

- The staff of the contractor shall wear safety jackets, shoes, helmets etc. while on duty and any violation will attract a fine of Rs.5,000/-for each incident.
- Failure to erect safety signage or trying to carry out the works without proper precautions /safety measures as required will attract a fine of Rs.5,000/-for each incident.

9.08 The Tendered rate for incident Management shall include all equipment, labour, material, consumable, tools, spares and other incidentals to comply with the requirement of the scope of the work and technical specification.

9.09 General directions and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. Reference to the relevant sections of the bidding document shall be made before entering rates or prices against each item in the Bill of Quantities.

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**DESCRIPTION OF WORK:**

Road Safety works – Short Term Remedial measures for the Blackspot Locations identified by MoRT&H, rectification of Critical Crash Prone Locations and speed calming measures at pedestrian crossing locations to attain Zero Fatality corridor in NH-83 (old no. NH-209) from Km.123.550 to Km.150.580 of Dindigul – Bangalore Road (Pollachi to Coimbatore Section) in the State of Tamil Nadu

**ABSTRACT OF COST**

Sl.No.	Description	Amount
1	Grand Total of BOQ	<b>Rs. 2,66,31,504.00/- excluding GST</b> (Rupees Two Crores Sixty Six Lakhs Thirty One Thousand Five Hundred and Four only)
	I/We agree to execute the above works on the tender premium -----% above/below the Grand Total of the Project Cost as given above.	(In words ) -----percent Above /Below

Road Safety works – Short Term Remedial measures for the Blackspot Locations identified by MoRT&H and rectification of Critical Crash Prone Locations to attain Zero Fatality corridor in NH-83 (old no. NH209 from Km.123.550 to Km.150.580) of Dindigul – Bangalore Road (Pollachi to Coimbatore Section) in the State of Tamil Nadu

National Highways Authority of India					
RO Chennai					
PIU - Coimbatore					
<b>Road Safety works - Short Term Remedial measures for the Blackspot Locations identified by MoRT&amp;H, rectification of Critical Crash Prone Locations and speed calming measures at pedestrian crossing locations to attain Zero Fatality corridor in NH-83 (old no. NH-209) from Km.123.550 to Km.150.580 of Dindigul – Bangalore Road (Pollachi to Coimbatore Section) in the State of Tamil Nadu</b>					
Item No.	Description of Items	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
1	Providing and fixing of Reflective Pavement Markers (RRPM), i.e. road studs shall be prismatic retro-reflective type conforming to ASTM D-4280. The Plastic body of RPM/road stud shall be moulded from ASA (Acrylic Styrene Acrylonitrile) or HIPS (HI-Impact Polystyrene) or Acrylonitrile Butadiene Styrene (ABS). The marker height shall not be less than 10mm and shall not exceed 20mm and its width shall not exceed 130mm. The markers shall support a load of 13,635 kg tested in accordance with ASTM ID 4280. The Reflective panels shall consist of number of lenses containing single or dual prismatic cubes capable of providing total Internal reflection of the light entering the lens face. Lenses shall be moulded of methyl methacrylate conforming to ASTM D 788 or equivalent. The optical performance of road studs shall be confirming to clause 804.4 of MoRT&H Specifications.	Nos.	3319	232.00	7,70,008.00

2	<p>Providing and Laying hot applied thermoplastic road marking strip on Concrete Surface of specified shade/ colour of 2.5 mm thick including Type 1 beads (Refer MoRT&amp;H Specification Clause 803.4.2) which are a constituent of the basic thermoplastic compound vide Table 800-9 (MoRT&amp;H Specification) and Type 2 beads are those which are to be sprayed on the surface vide Clause 803.6.4 (MoRT&amp;H Specification). The glass beads shall have a minimum reflectivity index of 1.5. The glass bead shall be @ 250gm/sqm. The thermoplastic road marking material thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC 35. Pavement Marking Performance such as Day/Night visibility, Dry/Wet visibility and skid resistance shall be confirming to clause 15.5 of IRC 35. The finished surface to be level, uniform, and free from streaks and holes complete as per direction of Engineer-incharge and in accordance with applicable specifications. (Refer MoRT&amp;H Clause 803 for technical Specification and Performance for IRC 35:2015). Recommended Use of specialized Road Marking Primer, based on surface conditions.</p>	Sqm	2935.80	660.00	19,37,628.00
3.	<p>Providing and Laying of 5mm high Single Rib Pattern Transverse Bar Markings with 2 component cold plastic with specialised cold plastic Primer coating rolled on surf cing material solvent free, high build two pack seamless, tough, skid resistant, for material to reduce speed. Cold Plastic road marking material shall be applied in single monolithic application to create rumble strip raised section of 10 mm high, 300 mm wide confirming to clause 3.7 of IRC 99, across the entire carriageway. Each rumble marking shall be made complete with specialised high refractive index glass beads of minimum reflectivity index of 1.5. The glass bead shall be @ 250gm/sqm. Type 1 beads (Refer MoRT&amp;H Specification Clause 803.4.2) which are a constituent of the basic cold plastics compound vide Table 800-9 (MoRT&amp;H Specification) and Type 2 beads are those which are to be sprayed on the surface vide Clause 803.6.4 (MoRT&amp;H Specification). Pavement Marking Performance such as Day/Night visibility, Dry/Wet visibility and skid resistance shall be confirming to clause 15.5 of IRC 35. The finished surface to be levelled, uniform and free from streaks and holes, to be applied on the edge lines, including surface cleaning and cost of all materials etc. complete.</p>	Sqm	384.90	2916.67	11,22,626.00
4.	<p>Providing and Laying of 10mm high Single Rib Pattern Transverse Bar Markings with 2 component cold plastic with specialised cold plastic Primer coating rolled on surf cing material solvent free, high build two pack seamless, tough, skid resistant, for material to reduce speed. Cold Plastic road marking material shall be applied in single monolithic application to create rumble strip raised section of 10 mm high, 300 mm wide confirming to clause 3.7 of IRC 99, across the entire carriageway. Each rumble marking shall be</p>	Sqm	891.90	4552	4,059,929.00



	made complete with specialised high refractive index glass beads of minimum reflectivity index of 1.5. The glass bead shall be @ 250gm/sqm. Type 1 beads (Refer MoRT&H Specification Clause 803.4.2) which are a constituent of the basic cold plastics compound vide Table 800-9 (MoRT&H Specification) and Type 2 beads are those which are to be sprayed on the surface vide Clause 803.6.4 (MoRT&H Specification). Pavement Marking Performance such as Day/Night visibility, Dry/Wet visibility and skid resistance shall be confirming to clause 15.5 of IRC 35. The finished surface to be levelled, uniform and free from streaks and holes, to be applied on the edge lines, including surface cleaning and cost of all materials etc. complete.				
5.	Providing and Laying of 15mm high Single Rib Pattern Transverse Bar Markings with 2 component cold plastic with specialised cold plastic Primer coating rolled on surf cing material solvent free, high build two pack seamless, tough, skid resistant, for material to reduce speed. Cold Plastic road marking material shall be applied in single monolithic application to create rumble strip raised section of 10 mm high, 300 mm wide confirming to clause 3.7 of IRC 99, across the entire carriageway. Each rumble marking shall be made complete with specialised high refractive index glass beads of minimum reflectivity index of 1.5. The glass bead shall be @ 250gm/sqm. Type 1 beads (Refer MoRT&H Specification Clause 803.4.2) which are a constituent of the basic cold plastics compound vide Table 800-9 (MoRT&H Specification) and Type 2 beads are those which are to be sprayed on the surface vide Clause 803.6.4 (MoRT&H Specification). Pavement Marking Performance such as Day/Night visibility, Dry/Wet visibility and skid resistance shall be confirming to clause 15.5 of IRC 35. The finished surface to be levelled, uniform and free from streaks and holes, to be applied on the edge lines, including surface cleaning and cost of all materials etc. complete.	Sqm	774.90	6254	48,46,225.00

6.	<p>Solar Powered Road marker (Solar Stud): Supplying and installation of Solar Raised Pavement Markers made of polycarbonate moulded body with circular shape, solar powered, LED self-illumination in active mode, 360 degree illumination and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face in passive mode. The marker shall support a load of 20000 kg tested in accordance to ASTM D 4280. Its water resistance shall meet the requirements of IP 65 in accordance with IS: 12063:1987 Category 2 for protection against water ingress. Colour of lighting could be provided in red or yellow (amber) or green or blue or combination as per requirement. It shall have super bright LEDs so as to provide long visibility from a distance of more than 800 m. Its flashing rate shall not be less than 1 Hz. It should be able to give the prescribed performance in the temperature range of -40°C to +55°C. Its life shall be not less than 3 years. The full charge should provide for a minimum autonomy of 50 hours operation. The height, width and length of the marker shall not be less than 10mm x 100mm x 100mm. Also the surface diameter of the marker shall not be less than 100mm respectively. The weight of marker shall not exceed 0.5 kilograms. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive and complete as directed by the Engineer</p>	Nos.	340	1980.20	6,73,268.00
7.	<p>Supplying and erecting red /yellow unbreakable polycarbonate body Solar Blinker 300mm dia. LED lamp confirming to IRC:93 and IS:7537. It shall have Light Emitting Diode (LED) - Hi Bright technology (Compliant to EN12368 or equivalent BIS standard). The Signal Switching shall be Solid State, with Opto-isolation. The Automatic operation mode shall have functional flashing rate available at 50% Duty Cycle 50 or 60 Flashes/minutes. The Electrical Power Supply shall be solar based 12 VDC operating at Ambient Temperature 0° to 55°C. The solar power system shall have in-built charge Controller - Low/High cut out, Solar SPV Module -60 Watts, Maintenance Free Battery (60AH) (having back up for operating blinker for 72 Hrs in absence of Sun or during rainy or foggy days. The Solar System shall be housed in a weatherproof pole mounting cabinet with clamp and mounting accessories. The Solar Blinker shall be supported on GI circular pipe 80 NB, 3.2 mm thickness confirming to IS 1239, 3m above the Finish Road level. GI circular pipe shall be firmly fixed to the ground by means of properly designed foundation with M 25 grade cement concrete 45 cm x 45 cm x 60, 60 cm below ground level as per approved drawing. Alternate white and yellow bands (Minimum four bands) of Type XI retro-reflective sheeting shall be pasted @ 0.5m c/c starting from a height of 0.5 m above the finish road level.</p>	Nos.	59	28342.75	16,72,222.00

8.	Providing and erecting of 10m hot-dip Galvanized Octagonal Pole with BSEN-10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, suitable to with stand the wind speed of 180 KMPH for 10 mtrs height Pole spaced at 30mtrs with overhang 1.5 - 1.8 m (double arm) fitted with 180W -210 W (2 fixtures per pole) confirming to IS Specification and as directed by Engineer. Using foundation in median. Spacing 30 m c/c at location 132+500	Nos.	16	89984.00	14,39,744.00
9.	Providing and erecting of 10m hot-dip Galvanized Octagonal Pole with BSEN-10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, suitable to with stand the wind speed of 180 KMPH for 10 mtrs height Pole spaced at 30mtrs with overhang 1.5 - 1.8 m (double arm) fitted with 180W -210 W (2 fixtures per pole) confirming to IS Specification and as directed by Engineer. Using foundation in median. Spacing 30 m c/c at Location 126+200	Nos.	8	97951.69	7,83,613.56
10.	Providing and erecting of 10m hot-dip Galvanized Octagonal Pole with BSEN-10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, suitable to with stand the wind speed of 180 KMPH for 10 mtrs height Pole spaced at 30mtrs with overhang 1.5 - 1.8 m (double arm) fitted with 180W -210 W (2 fixtures per pole) confirming to IS Specification and as directed by Engineer. Using foundation in median. Spacing 30 m c/c at Location 148+900	Nos.	4	113888.00	4,55,552.00
11.	Providing and erecting of 10m hot-dip Galvanized Octagonal Pole with BSEN-10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, suitable to with stand the wind speed of 180 KMPH for 10 mtrs height Pole spaced at 30mtrs with overhang 1.5 - 1.8 m (double arm) fitted with 180W -210 W (2 fixtures per pole) confirming to IS Specification and as directed by Engineer. Using foundation in median. Spacing 30 m c/c at Location 148+900	Nos.	76	110809.00	84,21,484.00
12.	Providing and fixing of retro-reflectorised cautionary, mandatory and informatory sign as per clause 801 of MoRTH Specifications for Roads & Bridge Works and IRC: 67 (2022) made of class - C Micro Prismatic Grade Sheeting of Type XI retro reflective sheeting. The retro reflective sheeting shall have manufacturer logo, watermark and lot number on the sheet. A QR (Bar) code shall also be placed on the backside of the sign board with an indelible ink. For signs above 600mm size, retro reflective sheet shall be fixed over 2 mm thick aluminium sheeting vide or 4mm thick Aluminium composite material sheet vide clause 801 of MoRTH Specifications for Roads & Brdige Works. For signs above 600mm sizes, sign shall be fixed over back support frame of minimum 35 x 35x 3 mm angle Frame. For signs above 600mm size, Signs shall be supported on GI circular pipe 80 NB, 3.2 mm thickness confirming to IS 1239. Retro-Reflective sheet shall be fixed on Substrate				

	<p>with Pressure Sensitive Adhesive. The Substrate shall be firmly riveted on Angle Frame @ 200mm spacing with Aluminium Pop rivets using Pneumatic Guns. The Angle frame shall be firmly fixed with high strength bolts, washers nuts conforming to IS1364 and IS 1367 on Sign Support Pole. Sign Supports shall be firmly fixed to the ground by means of properly designed foundation with M 25 grade cement concrete 45 cm x 45 cm x 60, 60 cm below ground level as per approved drawing. All Components of signs and supports including Angle Frame, Bolts, Nuts, Washers, etc. other than the reflective portion shall be galvanized by hot dip process (Zinc coated, 0.55 kg/sqm; minimum single spot) unless otherwise specified. All galvanizing shall be done after fabrication. Alternate white and yellow bands measuring 50 mm long retro-reflective sheeting shall be pasted around GI posts which help in ensuring the visibility/Presence of poles during night time even if the sign boards are stolen or totally vandalized. Minimum four bands of such retro-reflective sheeting shall be pasted starting from a height of 0.5 m above the finish road level. The messages (legends, letters, numerals, etc.) and borders as per clause 6.8 of RC 67 shall be digitally printed. Finished Signs shall have an Ultra Violet (UV) protective clear overlay applied to the entire face of the signs supplied by reflective sheet manufacturer. The agency shall submit 10 years warranty for satisfactory field performance for type XI retro reflective sheeting from the retro-reflective sheet manufacturer confirming to clause 6.7 &amp; 6.9 of IRC 67. Agency shall submit a certified copy of test reports from an Government laboratory/ Institute conforming to clause 6.7 6.9 of IRC 67 including 3 years accelerated outdoor weathering for the retro reflective sheeting. The Agency shall submit the sign convertor (manufacturer) name with details of essential equipment available with convertor in his fabrication shop such as digital, printer, cutter, plotter, laminator, Galvanizing plant, etc. The Agency shall submit road sign installation drawing in Kmz' file for approval before installation and after installation submit geo-tagging of all road signs with its installation photos and date of installation and other details as mentioned in IRC 67 annexure VII, complete in all respects. The sign supports and its foundation details are indicative. These may be increased for areas having higher wind velocities like in coastal areas. This is applicable to all road signs and directions boards.</p>				
	90 cm equilateral triangle	Nos.	50	8904.00	4,45,200.00
11.	Providing and Erecting of Retro - Reflectorised Two-way Hazard Marker Traffic Sign made out of High Intensity Prismatic Grade Sheeting confirming to Type-IV standards of IRC-67: 2022 and ASTM D 4956 -09, specification and fixed over 2mm thick Aluminium sheet fixed over a back supporting frame of 25mmx25mmx3mm Mild Steel angle and supported on a mild steel	Nos.	1	4000.00	4,000.00

	angle post 75X75X6mm and 0.60m below ground level. The sign post should be painted as per IRC 67-2022 and firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45cmX45cmX60cm size including cost and conveyance of all materials, equipment, Machinery and labour with all leads and lifts, loading charges necessary for satisfactory completion of the work as directed by the engineer-in-charge. High intensity Retro - Reflectro sheet shall consist of minimum coefficient of Retro-reflection as per Table 6.6 of IRC 67-2022. The retro- reflective sheeting shall be covered under 7 year warranty issued for field performance and a certified copy of three years outdoor exposure report shall be obtained as per IRC 67:2022. (as per MoRT&H Specification No.801) 45cm x 90cm rectangular				
	<b>Total Amount Excluding GST (Rs.)</b>				<b>2,66,31,504.00</b>