

**ANNEXURE - II to Minutes of the 174th Meeting of the  
Board of Engineers held on 14.08.2019**

**BASIC RATES OF ROAD FURNITURE ITEMS**

Rate in Rs.

Sl. No.	Description of Item	Unit	Basic Rates approved by the BGE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
1	<b>Retro-Reflectorised Traffic Signs (without definition board) Type - IV ✓</b>			
	Providing and erecting of Retro - Reflectorised Cautionary, Mandatory and Informatory signs (without definition board) made out of High Intensity Prismatic Grade Sheeting conforming to Type-IV standards of IRC-67: 2012 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 angle post 75X75X6mm with a clear height of not less than 2.10m from the ground level to the bottom of the sign board and 0.60m below ground level. The sign post should be painted as per IRC 67-2012 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 - Reflecto sheet shall consist of minimum coefficient of Retro-reflection as per Table 6.6 of IRC 67-2012. 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 67:2012. (as per MORT&H Specification No.801)			
i	90 cm equilateral triangle	Each	3820 ✓	4048 ✓
ii	60 cm equilateral triangle	Each	2425 ✓	2632 ✗
iii	60 cm circular	Each	3360 ✓	3596 ✗
iv	80 cm x 60 cm rectangular	Each	4710 ✓	4954 ✗
v	60 cm x 45 cm rectangular	Each	3220 ✓	3440 ✗
vi	60 cm x 60 cm square	Each	3860 ✓	4086 ✗
vii	90 cm high octagon	Each	6080 ✓	6335 ✗

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Rate in Rs.

Sl. No.	Description of Item	Unit	Basic Rates approved by the BOE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
2	<b>Retro-Reflectorised Traffic Signs (with definition board) Type - IV</b>			
	<p>Providing and erecting of Retro - Reflectorised Cautionary, Mandatory and Informatory signs (with definition board) made out of High Intensity Prismatic Grade Sheeting conforming to Type-IV standards of IRC-67: 2012 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 angle post 75X75X6mm with a clear height of not less than 2.10m from the ground level to the bottom of the sign board and 0.60m below ground level. The sign post should be painted as per IRC 67-2012 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 - Reflecto sheet shall consist of minimum coefficient of Retro-reflection as per Table 6.6 of IRC 67-2012. 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 67:2012 . ( as per MORT&amp;H Specification No.801)</p>			
i	90 cm equilateral triangle	Each	5120 ^	5373 λ
ii	60 cm equilateral triangle	Each	3720 ✓	3954 λ
iii	60 cm circular	Each	4670 -	4917 λ
iv	80 cm x 60 cm rectangular	Each	6010 -	6276 λ
v	60 cm x 45 cm rectangular	Each	4520 ✓	4762 λ
vi	60 cm x 60 cm square	Each	5160 ✓	5411 λ
vii	90 cm high octagon	Each	7370 ✓	7658 λ

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1	2	3	4	5
3	<b>Direction and Place Identification Signs - Type - IV</b>			
	<p>Providing and erecting of Direction and Place Identification Retro-reflectorised Sign made out of High Intensity Prismatic Grade Sheeting conforming to Type-IV standards of IRC-67: 2012 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 angle post 75X75X6mm with a clear height of not less than 2.10m from the ground level to the bottom of the sign board and 0.60m below ground level. The sign post should be painted as per IRC 67-2012 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 Reflecto sheet shall consist of minimum coefficient of Retro-reflection as per Table 6.6 of IRC 67-2012. 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 67:2012. (as per MORT&amp;H Specification No.801)</p>			
i	Rate per sqm (for sign having area upto 0.9 sqm) Type-IV	Sqm	8450 X	8777 X
ii	Rate per sqm ( for sign having area more than 0.9 sqm) Type-IV	Sqm	8740 X	9057 X

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Sl. No.	Description of Item	Unit	Basic Rates approved by the BOE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
4	<b>Direction and Place Identification Signs - Type - XI (For location of black spot, curve, sharp bend, junction, ghat roads and critical zone applications)</b>			
	<p>Providing and erecting of Direction and Place Identification Retro-reflectorised Signs made out of Cube Corner Micro Prismatic Grade Sheeting confirming to <b>Type-XI</b> standards of IRC-67: 2012 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 angle post 75X75X6mm with a clear height of not less than 2.10m from the ground level to the bottom of the sign board and 0.60m below ground level. The sign post should be painted as per IRC 67-2012 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. Micro Prismatic grade Retro - Reflectro sheet shall consist of minimum coefficient of Retro-reflection as per Table 6.9 of IRC 67-2012. The retro -reflective sheeting shall be covered under 10 year warranty issued for field performance and a certified copy of three years outdoor exposure report shall be obtained as per IRC 67:2012. ( as per MORT&amp;H Specification No.801) (For location of black spot, curve, sharp bend, junction, ghat roads and critical zone applications)</p>			
i	Rate per sqm (for sign having area upto 0.9 sqm) Type XI	Sqm	10475 λ	10766 λ
ii	Rate per sqm ( for sign having area more than 0.9 sqm) Type - XI	Sqm	10730 x	11046 >

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**Erratum for the Change of Specification for the Item  
"Metal Beam Crash Barrier Type - A, "W" Double Guard"**

As per Minutes of 169 <sup>th</sup> BOE	As per the recommendation of the Chief Engineer (H), C&M
<p>Providing and erecting Single sided Double Guard Metal Beam Crash Barrier System <b>1.80m high</b>, comprising of 3mm thick wall "W" beams posts and spacer channels shall be made by cold roll forming using HR conform to IS 5986 Fe 410/360 and dip galvanized having Zinc Mass of 550gms/ sqm, minimum <b>95mm above road/ ground level</b> fixed on ISMC series channel vertical post 150x75x5mm spaced 2m center to center 312mm x 83mm flange width x 3mm thick, 4318mm long post directly embedded in the concrete (M15) pit size 350x350x800mm for a depth of 750mm below ground. All fixing bolts and nuts hot dip galvanized conforming to IS:1367 clause 4.60 all complete as per Technical Specification and as directed by the Engineer-in-charge.</p>	<p>Providing and erecting Single sided Double Guard Metal Beam Crash Barrier System <b>1.70m high</b>, comprising of 3mm thick wall "W" beams posts and spacer channels shall be made by cold roll forming using HR conform to IS 5986 Fe 410/360 and dip galvanized having Zinc Mass of 550gms/ sqm, minimum <b>950mm above road/ ground level</b> fixed on ISMC series channel vertical post 150x75x5mm spaced 2m center to center 312mm x 83mm flange width x 3mm thick, 4318mm long post directly embedded in the concrete (M15) pit size 350x350x800mm for a depth of 750mm below ground. All fixing bolts and nuts hot dip galvanized conforming to IS:1367 clause 4.60 all complete as per Technical Specification and as directed by the Engineer-in-charge.</p>

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Rate in Rs.

Sl. No.	Description of Item	Unit	Basic Rates approved by the BOE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
5	<b>Metal Beam Crash Barrier Type - A, "W" Double Guard</b>			
	Providing and erecting Single sided Double Guard Metal Beam Crash Barrier System 1.70m high, comprising of 3mm thick wall "W" beams posts and spacer channels shall be made by cold roll forming using HR conform to IS 5986 Fe 410/360 and dip galvanized having Zinc Mass of 550gms/ sqm, minimum 950mm above road/ ground level fixed on ISMC series channel vertical post 150x75x5mm spaced 2m center to center 312mm x 83mm flange width x 3mm thick, 4318mm long post directly embedded in the concrete (M15) pit size 350x350x800mm for a depth of 750mm below ground. All fixing bolts and nuts hot dip galvanized conforming to IS:1367 clause 4.60 all complete as per Technical Specification and as directed by the Engineer-in-charge			
	Metal Beam Crash Barrier Type - A, "W" Double Guard	RM	5360 <sup>x</sup>	5864 <sup>x</sup>

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1	2	3	4	5
6	<b>Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface</b>			
	Providing and laying of hot applied Thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes etc complete as per MORT&H specification No.803			
		Sqm	805 ↗	841 ↘

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			Basic Rates approved by the BOE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
7	<b>Road Markers/Road Stud with Lens Reflector</b>			
	<p>Providing and fixing reflective road studs of 'category A' Raised pavement markers made out of poly carbonate / methyl methacrylate/ABS moulded body conforming to ASTM D 788 and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face with retro reflectance and chromaticity values conforming to ASTM D4280. The reflective raised pavement markers shall also conform to the MORTH circular No RW / NH. 33023/10/ 97-DO.III dt 11.06.97. The height, width and length shall not be less than 15 mm, 90 mm and 100 mm and with minimum reflective area of 13 Sq.cm on each side and the slope to the base shall be 35 +/- 5 degree. Each reflector shall have a CIL not less than values specified in Table 2 of said MORTH circular. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19 +/- 2mm and height not less than 30 +/- 2 mm) from the body is to be a minimum value of 500 Kgf. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer. The marker shall support a load of 13635 Kg tested in accordance with ASTM D4280 and conforming to IRC 35 - 2015 guidelines and MORT&amp;H specification 804 etc., complete</p>			
		Each	379 X	414 A

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1	2	3	4	5
8	<b>Road Delineators</b>			
	Supplying and installation of delineators (road way indicators, hazard markers and object markers), 80-100 cm high above ground level, painted at alternatively black and white in 15 cm wide strips, fitted with 80 x 100 mm rectangular or 75 mm dia circular reflectorised panels at the top, buried or pressed into the ground and conforming to IRC-79 etc., complete (as per MORT&H specification No. 806)			
		Each	2020 $\lambda$	2215 $\lambda$

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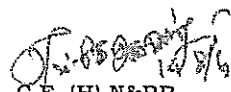
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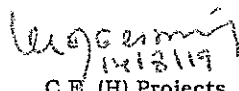
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Sl. No.	Description of Item	Unit	Basic Rates approved by the BOE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
9	<b>Hazard Marker Traffic Signs - Type-IV</b> ✓			
	<p>Providing and Erecting of Retro - Reflectorised Hazard Marker Traffic Sign made out of High Intensity Prismatic Grade Sheeting conforming to <b>Type-IV</b> standards of IRC-67: 2012 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 angle post 75X75X6mm and 0.60m below ground level. The sign post should be painted as per IRC 67-2012 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 67-2012. 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 67:2012. (as per MORT&amp;H Specification No.801)</p>			
	30cm x 90cm rectangular	Each	3130 ✕	3342 ✕


  
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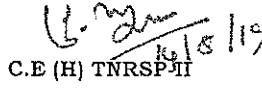
  
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1	2	3	4	5
10	<b>Rigid Median Marker</b>			
	<p>Providing and Fixing of Rigid Median Marker double sided made of tough, high impact resistant, injection-molded, thermoplastic body with an isosceles trapezoidal structure of length, width and height not less than 15cm, 10cm and 10cm respectively and thickness not less than 1.8mm, the body structure shall be rounded at its acute angle, all the corners and edges. The plastic used for molding the Median Marker shall have a minimum Notched Izod Impact strength value of 600 J/m at room temperature, when tested in accordance with ASTM D256 and shall retain at least 70% of this value when subjected to accelerated weathering for 1000hrs as per ASTM G155 or UL746C. The logo of the manufacturer shall be embossed on either side of the body in the injection molding process. The Median Marker shall have rectangular-shaped, fluorescent yellow color retro-reflective sheeting of size not less than 8.5cm*8.5cm and with fully reflective micro prismatic cube corners as its retro-reflective elements as per IRC 67 2012 and ASTM D4956-09 type XI specifications reflectivity values. The retro-reflective sheeting shall be both sides of the Median Marker and shall be edge protected with no exposed edges which will prevent edge lifting, vandalism, sheeting damage, etc. The Median Marker shall be fixed by a combination of epoxy adhesive and grouting.</p>			
		Each	-	445

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			Basic Rates approved by the BOE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
11	<b>Flexible Delineator / Spring Post</b>			
	Providing and fixing of Flexible Spring Post/ Tubular Marker made up of Polyurethane used to divide opposing lanes of road users shall be flexible in nature. Tubular marker having minimum height 700mm shall be having minimum 3inch Reboundable work zone retroreflective sheeting Class A (Type-I) as per ASTM 4956 S2. Application of Tubular Marker Shall be done as per IRC SP 55-2014. Test report for Type I Reboundable sheeting and 1 Year warranty for the product to be provided. Logo / Information shall be digitally printed on the retro reflective sheeting.			
		Each	-	1800 <sup>x</sup>

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1	2	3	4	5
12	<b>Star Sign Sticker</b>			
	Providing and fixing star sign made of High Intensity prismatic sheeting conforming to Type IV specification as per IRC-67 2012 guidelines pasted over CR sheet 0.20 mm/ 32G thickness with black enamel paint firmly fixed on the trees using epoxy based adhesive.			
		Each	-	80

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			Basic Rates approved by the BOE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
13	<b>Solar Raised Pavement Marker / Solar Road Stud</b>			
	<p>Supplying and fixing of Solar Raised Pavement Markers made of polycarbonate molded body, 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 product shall support a load of 13635 kg tested in accordance to MORTH and ASTM D 4280 Type H. The product should be resistant to water ingress according to IP 65 standards with IS 12063:1987 Category 2 and should withstand temperatures in the range of -7 C to 70 C. Flashing rate and color of lighting is to be provided as per requirement. There should be minimum current losses of less than 20 micro-amperes in sleep-charging mode to enhance product life and single charge should provide for a minimum autonomy of 50 hours. The height, width and length shall not be less than 10 mm x 100 mm x 100 mm. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer. Warranty Certificate and test reports confirming to compressive strength as per MORTH circular shall be obtained from the manufacturer and submitted to the engineer-in-charge. Two Years Warranty Certificate for Solar RPM for the quantity installed and a certified copy of test reports from an independent test laboratory conforming to water ingress shall be obtained from the Manufacturer by the contractor and submitted to the engineer-in-charge.</p>			
		Each	-	3050

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Rate in Rs.				
Sl. No.	Description of Item	Unit	Basic Rates approved by the BOE for the year 2017-18 (excluding Tax)	Basic rates approved for the year 2019-20 (excluding GST)
1	2	3	4	5
14	<b>Aluminium backed Flexible Prismatic (AFP) Sheeting</b>			
	<p>Supplying and fixing of Aluminium backed Flexible Prismatic (AFP) Sheeting shall be of 1ft width and laminated at the back with a 50 micron thick Aluminium (Al) foil with pressure sensitive adhesive and liner, further this flexible prismatic sheeting shall have screen printed arrow /slant line pattern in black colour on top in continuous roll format. Neither AFP sheeting nor the flexible prismatic sheeting used shall crack when slowly bent in second time around a 1/8th inch mandrel after being conditioned for 24 hrs at 0 degrees and tested as per section s2.2.2 of ASTM, D 4956-09. The AFP sheeting with the linear removed shall be applied with a neoprene contact adhesive with polychloroprene as base viscosity of 200-450 cps and solid content of 20-30 % once applied the edges of the product shall be extremely resistant to peel off. A test report from institutes like ARAI/CRR/ conforming to above mentioned flexibility and ASTM D 4956-09 type -vi retro reflectivity performance of the flexible prismatic sheeting used in AFP shall be submitted by the tenderer during pre-qualification and supply of material. Two years Pre-qualification warranty for field performance shall be submitted by the contractor for technical qualification in the tender.</p>			
		Sqm	-	8400 X

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