

the ground by means of properly designed foundation. The work of foundation shall conform to relevant specifications as specified.

1.2.2 All components of signs and supports, other than the reflective portion and G.I. Posts shall be thoroughly descaled, cleaned, primed and painted with two coats of epoxy paint. Any part of mild steel (M.S.) post below ground shall be painted with three coats of red lead paint.

1.2.3 The signs shall be fixed to the posts by welding in the case of steel posts and by bolts and washers of suitable size in the case of reinforced concrete or G.I. Posts. After the nuts have been tightened, the tails of the bolts shall be furred over with a hammer to prevent removal.

1.3 Measurements for Payment :

The measurement for standard cautionary, mandatory and information sign shall be in number of different types of signs supplied and fixed as per above details and specifications. Direction and place identification signs, also shall be measured in numbers of different type of sign supplied and fixed.

1.4 Rate :

The contract unit rate shall be payment in full for the cost of making the road sign, including all materials, installing it at the site and incidentals to complete the work in accordance with the specifications.

➤ **SPECIAL TERMS AND CONDITIONS OF CONTRACT FOR SIGN BOARDS**

- 1 Warranty certificate for ten years for respective grades of signs from the sheeting manufacturer should be attached with the bid.
- 2 A certificate of authorization from the sheeting manufacturer shall be submitted with the bid.
- 3 The responsibility for handling, upkeep and safety of the boards lies with the contractor until the completion of work and final payment are released.
- 4 The contract is valid for three months from the date of work order. The required quantity has to be supplied and fixed as and when intimated by the Division.
- 5 The measurement for payment will be done only after fulfilling condition up to the satisfaction of Executive Engineer. The 100% quantity of supply and fixing will be checked by Deputy Executive Engineer and at least 10% quantity of supply and fixing will be checked by the Executive Engineer to ensure quality and workmanship, before passing for payments.
- 6 The contractor will have to ensure how he is going to arrange repair or replacement of defective boards after intimation from the Division.
- 7 **The mode of payment shall be in per No. basis**



**Item No 35**

**Direction (Junction) Sign :-**Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 244x122 cms. rectangular as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T.Specifications; 4.0mtr long (2 Nos.) stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 50 x 50 x 5mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per theinstruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting

The relevant specification of Item No. 34 shall be followed for the execution for the work is Direction (Junction) sign : Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Alluminium composite panel) size 244 x 122 cms. rectangle as per the design of IRC-67-2012. Pre treated with phospheting process & acid etching coated with one coat of epoxy primer and two coats of best quality epoxy paint, reflectorised with high intensity prismatic grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.R.T.H. specifications, 4.0 mt. (2 Nos.) long stand post of iron angle 75 x 75 x 6mm / 65NB Circular MS pipe as required and frame fabricated from suitable size iron angle of 50 x 50 x 5mm, painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60cms. for each leg including excavation, curing etc. complete under the supervision of Engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 36**

**Village Name Sign :-**Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 90x60 cms. rectangular as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D- 4956 and latest M.O.S.T.Specifications; 3.3mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol or inscription/letters / numerals for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheetingsubmitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting

The relevant specification of Item No. 34 shall be followed for the execution for the work is Village Name sign : Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Alluminium composite panel) size 90 x 60 cms. rectangle as per the design of IRC-67-2012. Pre treated with phospheting process & acid etching coated with one coat of epoxy primer and two coats of best quality epoxy paint, reflectorised with high intensity prismatic grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.R.T.H. specifications, 3.3 mt. long stand post of iron angle 75 x 75 x 6mm / 65NB Circular MS pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm, painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60cms. for each leg including excavation, curing etc. complete under the supervision of Engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 37**

**Hazard Marker Sign :-** Providing and fixing sign boards made out of 1.5mm aluminium sheet / 3mm ACP (Aluminum composite Panel); size 90x30 cms. rectangular as per design of IRC-67-2012. Pre treated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D- 4956 and latest M.O.S.T.Specifications; 1.8mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per theinstruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

The relevant specification of Item No. 34 shall be followed for the execution for the work is Hazard Marker Sign :- Providing and fixing sign boards made out of 1.5mm aluminium sheet / 3mm ACP (Aluminum composite Panel) size 90 x 30 cms. rectangular as per design of IRC-67-2012. Pre treated with phosphating process & acid etching coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with High Intensity Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. specifications, 1.8mtr long stand post of Iron Angle 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 Cms. for each leg including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 38**

**Chevron sign :-**Providing and fixing sign boards made out of 1.5mm aluminium sheet / 3mm ACP (Aluminum composite Panel); size 60x50 cm as per design of IRC-67-2012. Pre treated with phosphating process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T.Specifications; 3.3 mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 50 x 50 x 5mm; painted with bestquality epoxy coatings in black and white bends. the details of symbol or inscription / numerals for each board shall be as per the instruction of engineer in charge.The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

The relevant specification of Item No. 34 shall be followed for the execution for the work is  
Chevron sign board :- Providing and fixing sign boards made out of 1.50mm aluminium sheet / 3mm ACP (Aluminum composite panel) size 60 x 60cm as per design of IRC-67-2012. Pre treated with phosphating process & acid etching coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with Intensity Prismic Grade retro reflective sheeting of Type-11 as per ASTM-D4956 and latest M.O.R.T.H. specifications, 3.3 mt. long stand pos of Iron angle 75 x 75 x 6 mm/ 65 NB Pipe as required and frame fabricated from suitable size iron angle of 50 x 50 x 5 mm, painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 C.C. block of size 45 x 45 x 60 cms. for each leg including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for Retro reflective Sheetting from Original manufacture & a certified copy of 3 year out door exposure test report from third party test lab for the product offered shall be submitted by contractor (A) Class-C Type-11 Retro Reflective sheeting.

**The mode of payment shall be in per No. basis**

**Item No 39      Providing and fixing 5th Km. stone of precast C.C. 1:2:4 including necessary reinforcement as per I.R.C. type design fixing in C.C. 1:4:8 including painting and lettering etc. complete**

The work covers the supply, painting, lettering and fixing of 5<sup>th</sup> Kilometer stone.

The dimensions of the stones and the size, colour, arrangement of letters and scripts shall be as per I.R.C. type designs. The 5<sup>th</sup> kilometer stone of approved hard stone as per IRC type design in C.C. 1:2:4 as indicated in the drawings or in the relevant I.R.C. specifications or as directed by the Engineer-in-charge. The orientation and location of the stones shall be as indicated in the drawings or in the relevant I.R.C. Specification or as directed by the Engineer-in-charge.

The 5<sup>th</sup> Kilometer stone shall be fixed in C.C. 1:4:8 at site of work.

#### MEASUREMENT OF PAYMENT

The measurement will be taken in Numbers of 5<sup>th</sup> Kilometer stone fixed at site.

#### RATE

The contract unit rate for 5<sup>th</sup> kilometer stones shall be paid in full compensation for furnishing, all labour, materials including providing necessary reinforcement, tools, equipment and making the stones, painting and lettering and fixing at site and all other incidental costs necessary to complete the work to these specifications.

**The mode of payment shall be in per No. basis**



**Item No 40      Providing and fixing ordinary kilometer stone of precast C.C. 1:2:4 including necessary reinforcement as per I.R.C. type design fixing in C.C. 1:4:8 including painting and lettering etc. complete**

1. Ordinary Kilometer stone shall be of approved quality of precast C.C. 1:2:4 including necessary reinforcement as per I.R.C. type design in C.C.1:4:8 as specified in the item.
2. The size, manner of fixing, painting and lettering of ordinary Kilometer stone shall conform specification as per IRC – 8 (Type design for Highway kilometer stones). The fixing of KM stone shall be carried out in ordinary payment shall be made per No. of KM stone fixed in position.
3. Fixing in C.C. 1:4:8  
The ordinary kilometer stone shall be fixed in C.C. 1:4:8 which will consist of one part of cement, four part of good sand and eight parts of good brick bats, Rate includes all labour and curing etc. necessary for concrete.
4. Unit rate for ordinary kilometer stone includes the cost of all materials labour, tools, fixing finishing curing lettering and painting as directed by the Engineer-in-charge.
5. Payment shall be made carried out on number basis.

**The mode of payment shall be in per No. basis**

**Item No 41      Providing and fixing hectometer as per I.R.C. type design including painting lettering etc. complete fixing in C.C. 1:5:10.**

The work covers the supply, painting, lettering and fixing of Hectometer stone.

The dimensions of the stones and the size, colour, arrangement of letters and scripts shall be as per I.R.C. - 26 type designs. The Hectometer stone shall be precast cement concrete 1:2:4 for which relevant specification shall be followed. The stone shall be bedded into the ground with adequate foundation in C.C. 1:5:10 as indicated in the drawings or in the relevant I.R.C. Specifications or as directed by the Engineer-in-charge. The orientation and location of the stones shall be as indicated in the drawings or in the relevant I.R.C. Specifications or as directed by the Engineer-in-charge.

**MEASUREMENT OF PAYMENT**

The measurement will be taken in Numbers of Hectometer stone fixed at site fixing in C.C. 1:5:10.

**RATE**

The contract unit rate for Hectometer stones shall be payment in full compensation for furnishing, all labour, materials including providing necessary reinforcement, tools, equipment and making the stones, painting and lettering and fixing at site and all other incidental costs necessary to complete the work to the specifications.

**The mode of payment shall be in per No. basis**



**Item No 42**

**Regulatory / Mandatory Sign :-**Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 60 cms Dia Circle as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D- 4956 and latest M.O.S.T.Specifications; 3.6mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per theinstruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting

The relevant specification of Item No. 34 shall be followed for the execution for the work is Regulatory/Mandatory sign :- Providing and fixing signboard made out of 2mm aluminium sheet / 4mm ACP (Alluminium composite panel) size of 60cm diameter circle as per design of IRC-67-2012. Pre treated with phospheting process & acid etching coated with one coat of epoxy primer and two coats of best quality epoxy paint, reflectorised with high intensity prismatic grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.R.T.H. specifications, 3.6 m long stand post of iron angle 75 x 75 x 6mm / 65NB circular MS pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm, painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60cms. for each leg including excavation, curing etc. complete under the supervision of Engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 43**

**STOP Sign :-**Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 90 cms Octagone as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T.Specifications; 3.6mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per theinstruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting

The relevant specification of Item No. 34 shall be followed for the execution for the work is STOP Sign :- Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite panel) size 90 cms. Octagonal as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with High Intensity Prismatic Grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. specifications 3.6mtr long stand post of iron angle 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm, painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 Cms. for each leg including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro reflective sheeting.

The mode of payment shall be in per No. basis



**Item No 44**      Providing and laying of raised profile edge line marking (audible warning) with hot applied thermoplastic road marking compound 2mm thick base coat layer above that ribs profile of 6 mm thick (Total 8 mm thick) at the distance of 500 mm between two ribs including reflectorizing glass beads @ 250 gm/ sq.mt area. The minimum and maximum width of raised profile should be 150 mm. The thickness of 8 mm profile should be exclusive of surface applied glass beads. The finished surface to be levelled, uniform and free from streaks and holes, to be applied on edge lines.

The work shall be executed as per specification of Item No. 32 except the work is for providing and laying of raised profile edge line marking (audible warning) with hot applied thermoplastic road marking compound 2mm thick base coat layer above that ribs profile of 6 mm thick (Total 8 mm thick) at the distance of 500 mm between two ribs including reflectorizing glass beads @ 250 gm/ sq.mt area. The minimum and maximum width of raised profile should be 150 mm. The thickness of 8 mm profile should be exclusive of surface applied glass beads. The finished surface to be levelled, uniform and free from streaks and holes, to be applied on edge lines.

**The mode of payment shall be in per No. basis**

**Item No 45**

**Facility Informatory Sign :-**Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 80 x 60 cms rectangular as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T.Specifications; 3.6mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per theinstruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg. including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting

The work shall be executed as per specification of Item No. 34 except the work is for Facility Informatory sign : Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Alluminium composite panel) size 80 x 60 cms. rectangle as per the design of IRC-67-2012. Pre treated with phospheting process & acid etching coated with one coat of epoxy primer and two coats of best quality epoxy paint, reflectorised with high intensity prismatic grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.R.T.H. specifications, 3.6 mt. long stand post of iron angle 75 x 75 x 6mm / 65NB Circular MS pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm, painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60cms. for each leg including excavation, curing etc. complete under the supervision of Engineer in charge. A warranty for 10 years for the retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 46**

**Tree Guard sign :-Providing & fixing sign board made out of 2mm aluminium sheet / 3mm ACP (Aluminum composite Panel) , size 30cms diameter circle, pretreated with phospheting process and acid etching, painted with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with retro reflective sheeting as per latest M.O.S.T. specifications. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting**

Specification of Item No. 34 shall be followed for the execution of this item except the size of sign board made out of 2mm aluminium sheet / 3mm ACP (Alluminium composite panel) is size 30 cms dia. circle instead of 2mm aluminium sheet / 4mm ACP (Alluminium composite panel) size 90 x 90 x 90cms. equilateral triangle as per the design of IRC-67-2012.

The Tree Guard Signs shall be fixed on Tress as directed by the Engineer-in-charge.

**The mode of payment shall be in per No. basis**

**Item No 47**

**Give Way Sign :-**Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 90 x 90 x 90 cms. equilateral triangle as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T.Specifications; 3.6mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per theinstruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting

The relevant specification of Item No. 34 shall be followed for the execution for the work is  
Give Way Sign :- Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite panel) size 90 x 90 x 90 cms. equilateral triangle as per design of IRC-67-2012. Pre treated with phospheting process & acid etching, coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with Micro Prismatic grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. specifications, 3.6 mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 cms. for each leg including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 48**      **Route Marker sign :-**Providing and fixing sign boards made out of 2.0 mm aluminium sheet / 4 mm ACP (Aluminum composite Panel); size 60x45 cm rectangular plus 30x25cm additional plate as per design of IRC-67-2012. Pre treated with phospheting, process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T.Specifications; 3.6 mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35x 35 x 3mm; painted with bestquality epoxy coatings in black and white bends. the details of symbol or inscription / numerals for each board shall be as per the instruction of engineer in charge.The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting

The relevant specification of Item No. 34 shall be followed for the execution for the work is Route Marker sign :- Providing and fixing sign boards made out of 1.5 mm aluminium sheet / 3 mm ACP (Aluminum composite panel) size 60 x 45 cm rectangular plus 30 x 25cm additional plate as per design of IRC-67-2012. Pre treated with phospheting process & acid etching, coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with Micro Prismatic grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. specifications, 3.6 mtr long stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm, painted with best quality epoxy coatings in black and white bends. The details of symbol or inscription / numerals for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 cms. for each leg including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 49**

**Distance Informatory / Destination Sign :-** Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 180x120 cms. rectangular as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ;reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T.Specifications; 4.0mtr long (2 Nos.) stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 50 x 50 x 5mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol foreach board shall be as per theinstruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg.including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting

The relevant specification of Item No. 34 shall be followed for the execution for the work is Distance Informatory / Destination Sign :- Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite panel) size 180 x 120 cms. rectangular as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with Micro Prismatic grade retro reflective sheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T. Specifications; 4.0mtr long (2 Nos.) stand post of 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 50 x 50 x 5mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 cms. for each leg including excavation, curing etc. complete under the supervision of engineer in charge. A warranty for 10 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (A) Class-C Type-11 Retro Reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 5C**

**Diversion Ahead Sign :-Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 180x60 cms. rectangular as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ; reflectorised with High Intensity Prismatic Grade retro reflectivesheeting of Type-4 as per ASTM D-4956 and latest M.O.S.T.Specifications; 3.1 mtr long stand post (2 Nos.) of Iron Angle 50 x 50 x 5mm / 50NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with bestquality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 7 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (B) Class-B Type-4 Retro Reflective sheeting**

The relevant specification of Item No. 34 shall be followed for the execution for the work is Diversion Ahead Sign :- Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite panel) size 180 x 60 cms. rectangular as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint, reflectorised with High Intensity Prismatic grade retro reflective sheeting of Type-4 as per ASTM D-4956 and latest M.O.S.T. specifications, 3.1 mtr long stand post (2 Nos.) of Iron Angle 50 x 50 x 5mm / 50NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 35 x 35 x 3mm; painted with best quality epoxy coatings in black and white bends. The details of symbol for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x 45 x 60 cms. for each leg including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 7 years for the retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (B) Class-B Type-4 Retro Reflective sheeting.

**The mode of payment shall be in per No. basis**



**Item No 51**

**Men at work (Heavy) sign :-**Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 120cm x 90cm as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ; reflectorised with High Intensity Prismatic Grade retro reflectivesheeting of Type-4 as per ASTM D-4956 and latest M.O.S.T.Specifications; 3.6 mtr long stand post (2 Nos.) of Iron Angle 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 50x50x5mm; painted with bestquality epoxy coatings in black and white bends. the details of symbol or inscription / numerals for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 7 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (B) Class-B Type-4 Retro Reflective sheeting

The relevant specification of Item No. 34 shall be followed for the execution for the work is Men at work (Heavy) sign :-Providing and fixing sign boards made out of 2mm aluminium sheet / 4mm ACP (Aluminum composite Panel); size 120cm x 90cm as per design of IRC-67-2012. Pre treated with phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint ; reflectorised with High Intensity Prismatic Grade retro reflectivesheeting of Type-4 as per ASTM D-4956 and latest M.O.S.T.Specifications; 3.6 mtr long stand post (2 Nos.) of Iron Angle 75 x 75 x 6mm / 65NB Circular MS Pipe as required and frame fabricated from suitable size iron angle of 50x50x5mm; painted with bestquality epoxy coatings in black and white bends. the details of symbol or inscription / numerals for each board shall be as per the instruction of engineer in charge. The fixing at site shall be in 1:2:4 CC blockof size 45 x 45 x 60 Cms. for each leg including excavation, curing etc.complete under the supervision of engineer in charge. A warranty for 7 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from third party test lab for the product offered shall be submitted by contractor. (B) Class-B Type-4 Retro Reflective sheeting

**The mode of payment shall be in per No. basis**



**Item No 52      Portable Barricade in Construction Zone (Installation of a steel portable barricade with horizontal rail 300 mm wide, 2.5 m in length fitted on a 'A' frame made with 45 x 45 x 5 mm angle iron section, 1.5 m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150 mm in width at an angle of 45°, 'A' frame painted with 2 coats of yellow paint, complete as per IRC:SP:55- 2001 )**

1. Work shall be carried out as per standard practice, drawings and as directed by Engineer in charge. Allowing for movement of traffic as per drawing and directed by Engineer as per site requirements.
2. Excavations for open foundations as well as for pile cap at some locations are to be carried out on existing roads, where the traffic is of mixed character viz. slow and freight traffic including pedestrian, cyclists etc. for enclosing and confining the area of the actual construction, a module of 1.8m height M.S. CGI / CRC plates fixed on MS Channel /Angle posts shall be provided to cover area of working.
3. The rate covers all labour and supply of required material viz. GI/CRC sheets, M S post angle (45 x 45 x 5mm) / Channels, at site, erecting including digging hole in pavement structure and fixing MS posts in the existing ground by any stable and fixed devices, painting, providing road sign boards with blinkers as may be directed by the Engineer-in charge.
4. The rate shall be paid on the basis of no. or as may be required height of enclosure used.
5. Contractor shall have to carry out frequent cleaning, washing & painting of portable barricade as instructed by Engineer in charge.
6. Payment for this item shall be made only when the barricading is made as per drawing & specification of tender documents. If barricading is not as per tender provision then no payment shall be made.

**The mode of payment shall be in per No. basis**

**Item No 53**

**Traffic cones with 150 mm reflective sleeve (Provision of red / other colour fluorescent with white reflective sleeve traffic cone made of low density polyethylene (LDPE) material with a square base of 390 x 390 x 35 mm and a height of 770 mm, 4 kg in weight, placed at 1.5 m interval, all as per BS 873)**

The item is for providing and fixing Traffic cones with 150 mm reflective sleeve of rectangle shape of size 10 cm x 5 cms. on safety barrier. The reflective sleeve shall be approved by the Engineer-in-charge before fixing. The reflective sleeve shall be of approved make and brand. The reflective sleeve shall be fixed as directed by the Engineer-in-charge.

**The item shall be measured and paid on No. basis of work done.**



- Item No 54**      **Standard Delineator:** Providing and fixing Standard Metal Delineator consisting of minimum retro reflective unit exposed area of 330 cm<sup>2</sup> white color, full cube corner micro prismatic non-metallic retro reflective sheeting on each side conforming with IRC 67-2012 and meeting the coefficient of retro reflection values as per ASTM D 4956 Type XI table specification. The delineator shall be painted with powder coat of minimum 401 microns thickness, on top of which retro reflective sheeting shall be pasted on both sides. The structure shall be manufactured in roll forming process and shall have height not less than 800 mm above the ground, width not less than 100 mm and shall extend not more than 300 mm below the ground while being intalled, height of sheeting should be minimum 150 mm whereas width of sheeting should not be less than 75 mm (should be placed every alternative 15cm), The front and the back faces opf the delineator should be curved with a radius of not more than 200 mm and with delta angle (or central angle of curve) lying between 20 and 30, to increase the visibility of delineator for vehicles moving in continuous curves. The delineator shall have grooves across the length to make the reflective sheets vandal- proof. The delineator is meant for application on gaps in median, traffic islands, dangerous bends, roundabouts,. narrow bridge etc. or as desired by site engineer.

**1.0**      **General**

The colour, configuration, size and location of standard metal delineator for highways other than Expressways shall be in accordance with the Code of Practice for Road Signs, IRC:67-2012 or as shown on the drawings or as directed by the Engineer.

The standard metal delineator shall be protective grill reflectorised as shown on the drawings or as directed by the Engineer. It shall be of retro-reflectorised type and made of encapsulated lens type reflective sheeting vide Clause 801.3, fixed over retro reflective sheeting as per these specifications.

In general, cautionary and mandatory signs shall be fabricated through process of screen printing. In regard to informatory signs with inscriptions, either the message could be printed over the reflective sheeting, or cut letters of non-reflective black sheeting used for the purpose which must be bonded well on the base sheeting as directed by the Engineer.

**1.2**      **Materials :**

The various materials and fabrication of the standard metal delineator shall conform to the following requirements.

The adhesive materials shall be of standard quality and it shall be high resistance quality against heavy moving vehicles.

The materials shall be used for the body of the standard metal delineator is of high density PVC materials.

The dimensions and size of the standard metal delineator shall be as per IS standard. The retro-reflective sheeting used on the standard metal delineator shall consist of the white or