

Name of Work	4217 C.O on U.D Providing Bump and Relevant Road Furniture works on Metro Route Junction in SD26 Jurisdiction (Ch-0 to Mahatma Mandir Metro Station)(Relevant Road Furniture work on Metro Route)
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BILL OF QUANTITIES					
Item No	Description of Item (with brief specification and reference to book of specifications)	Quantity	Unit	Rate In figures	Amount
1	Cautionary Warning Sign (with Post):Providing and fixing Retro-Reflective type sign board of size 90x90x90cm of steel structure to be provided as per drawing and design given by Engineer in charge. The road sign board steel to be provided as per drawing and design of equilateral Triangle as per the below size fixed with 01 no. of S.S. 304 grade pipe 63 mm OD Size /2 mm thick total 3.3 mt. in length with a foundation CC of 0.45 x 0.45 x 0.60 mt. in M- 15 grade fixed with VHB Tape of suitable grade as per dimension given in drawing. The sign board face fully covered with Retro reflective sheeting confirming to Type-XI of ASTM D-4956-09 and IRC 67-2022, on 4 mm thick Aluminum Composite Material (ACP), over which symbols and numerals are made using either Screen Printing / UV resistance durable overlay Filmas recommended by sheeting manufacturer in approved color pasted on substrate by pressure sensitive adhesive with suitable size of VHB Tape with back support frame of SS 304 grade square pipe 32x32x1 mm as per drawing by vertical support as per drawing mounted on SS pipe 63 mm OD (2 mm thick). Fixed with S.S. cleat 6 mm thick as per drawing etc. including all fixtures,materials, Labours, SS polishing and transportation as per drawing and as directed by 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 with his own expensis. The contractor should also submit SS Material test report from NABL Laboratory. (A) Class-C Type-11 Retro Reflective sheeting	48.00	Each	11364.89	545514.72
2	Mandatory Warning Sign (with Post):- Providing and fixing 600mm Dia Retro-Reflective type sign board of steel structure to be provided as per drawing and design given by Engineer in charge. The road sign board steel to be provided as per drawing and design of 600mm Circule fixed with 01 no. of S.S. 304 grade pipe 63 mm OD Size/ 2 mm thick total 3.3 mt. in length with a foundation CC of 0.45 x 0.45 x 0.60 mt. in M- 15 grade fixed with VHB Tape of suitable grade as per dimension given in drawing. The sign board face fully covered with Retro reflective sheeting confirming to Type-XI of ASTM D-4956-09 and IRC 67-2022, on 4 mm thick Aluminum Composite Material (ACP), over which symbols and numerals are made using either Screen Printing / UV resistance durable overlay Filmas recommended by sheeting manufacturer in approved color pasted on substrate by pressure sensitive adhesive with suitable size of VHB Tape with back support frame of SS square pipe 32x32x1 mm as per drawing by vertical support as per drawing mounted on SS pipe 63 mm OD (2 mm thick). Fixed with S.S. cleat 6 mm thick as per drawing etc. including all fixtures,materials, Labours,SS polishing and transportation as per drawing and as directed by Engineer in charge. A warranty for 10 years for the Retro reflective sheeting from originaa 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 with his own expensis. (A) Class-C Type-11 Retro Reflective sheeting	52.00	Each	10139.98	527278.96

3	Place identification Signage: Providing and fixing of Place identification signage size 900x1500mm Made from Retro-Reflective type made of steel structure to be provided as per drawing and design given by Engineer in charge. Each signage to be fixed on Single or Double S.S. 304 grade pipe 63 mm OD Size /2 mm thick with a foundation with CC of 0.45 x 0.45 x 0.60 mt. in M- 15 grade for each post & fixed with VHB Tape of suitable grade as per dimension given in drawing. The sign board face fully covered with Retro reflective sheeting confirming to Type-XI of ASTM D-4956-09 and IRC 67-2022, on 4 mm thick Alluminum Composite Material (ACP), over which symbols and numerals are made using Latex/UV Digital Printing Technology and over laminated with UV resistant Lamination Film as recommended by sheeting manufacturer in approved color pasted on substrate by pressure sensitive adhesive with suitable size of VHB Tape with outer frame of SS 304 grade pipe 31.75 mm size/ 1.2 mm thick and SS 304 grade support rectangle pipe frame 25 x 12 x 1 mm as per drawing by vertical support as per drawing mounted on SS pipe 63 mm OD (2 mm thick). Fixed with S.S. cleat 6 mm thick as per drawing etc. including all necessary fixture,materials, labours, machineries, SS polishing, transportation and fastening etc. complete as per drawing and as directed by Engineer in charge. A warranty for 10 years for the Retro reflective sheeting from originaa 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 with his own expensis. (A) Class-C Type-11 Retro Reflective sheeting	52.00	Each	27291.33	1419149.16
4	Sign board per Sq.Mtr : Providing and fixing Sign board sign 1000mm x 1000 mm Retro- Reflective type sign board of SS steel structure to be provided as per drawing and design given by Engineer in charge. The road sign board steel to be provided as per drawing and design fixed with 02 nos. of S.S. pipe 63mm outer dia. Size 2mm thick total 3.6mt. in length (each post) with a foundation CC of 0.45 x 0.45 x 0.6 mt. in M- 20 grade fixed with M.S. plates and M.S. cleats as per dimension given in drawing.The sign board face fully covered with Retro reflective sheeting confirming to Type-XI of ASTM D-4956-09 The sign board face fully covered with Retro reflective sheeting confirming to Type-XI of ASTM D-4956-09 and IRC 67-2022, on 4 mm thick Aluminum Composite Material (ACP), over which symbols and numerals are made using Latex/UV Digital Printing Technology and over laminated with UV resistant Lamination Film as recommended by sheeting manufacturer in approved color pasted on substrate by pressure sensitive adhesive with suitable size of VHB Tape with back support frame back support frame of SS Round pipe of 32x1.2mm and SS rectangle pipe 25 x 12 x 1 mm as per drawing by vertical support as per drawing mounted on SS pipe 63 mm outer dia (2mm thick) having Pipe Cap at Top. Fixed with M.S. cleat 6 mm thick as per drawing etc. including foundation as per drawing and as directed by Engineer in charge. A warranty for 10 years for the Retro reflective sheeting from originaa 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. The contractor should also submit SS Material test report from NABL Laboratory. (A) Class-C Type-11 Retro Reflective sheeting	15.00	Each	19004.81	285072.15
5	Road marking with hot applied thermoplastic paints with reflectorising glass beads on bitumin surface providing and laying a hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250gms per sqm area, thickness of 2.5mm is excluding of surface applied glass beds as per IRC:35-2015. The finished surface to be level, uniform and free from streaks and holes. zebra patta /bump patta lane/center line/ edge line/cut patta. The white color marking should provide liminance coefficin et on cemend road shall be min 130 mcd/m2/lux and Asphalt road shall be min 100 mcd/m2/lux during the service life during the day time. The marking should meet the performance criteria for night time reflectivity, wet reflectivity and skid resistance as mentioned in the section-15 of IRC 35-2015.	1006.50	Smt	632.46	636570.99

6	Standard Delineator: Providing and fixing of Standard Metal Delineator consisting of minm retro reflective unit exposed area of 330 cm2 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 40 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 300mm below the ground while being installed. height of sheeting should be minimum 150mm whereas width of sheeting should not be less than 75mm (should be placed every alternative 15cm). The front and back faces of 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 20o and 30o, to increase the visibility of the 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 bridges etc. or as desired by site engineer	312.00	Each	1027.17	320477.04
7	STOP Sign:-Providing and fixing STOP sign size 900mm Octagonal Retro-Reflective type sign board of steel structure to be provided as per drawing and design given by Engineer in charge. The road sign board steel to be provided as per drawing and design of 600x800mm Rectangular fixed with 01 no. of S.S. 304 grade pipe 63 mm OD Size /2 mm thick total 3.6 mt. in length with a foundation CC of 0.45 x 0.45 x 0.60 mt. in M- 15 grade fixed with VHB Tape of suitable grade as per dimension given in drawing. The sign board face fully covered with Retro reflective sheeting confirming to Type-XI of ASTM D-4956-09 and IRC 67-2022, on 4 mm thick Aluminum Composite Material (ACP), over which symbols and numerals are made using either Screen Printing / UV resistance durable overlay Filmas recommended by sheeting manufacturer in approved color pasted on substrate by pressure sensitive adhesive with suitable size of VHB Tape with back support frame of SS square pipe 32x32x1 mm as per drawing by vertical support as per drawing mounted on SS pipe 63 mm OD (2 mm thick). Fixed with S.S. cleat 6 mm thick as per drawing etc.including all necessary fixture, labours, SS polishing, transportation and fastnieng as per drawing and as directed by Engineer in charge. A warranty for 10 years for the Retro reflective sheeting from originaa 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 with his own expensis. The contractor should also submit SS Material test report from NABL Laboratory (A) Class-C Type-11 Retro Reflective sheeting	21.00	Each	13173.65	276646.65
8	Providing & Fixing Traffic Bollard Swiss type Jumbo made out of 18 gauage MS Sheet in Conical shape having Dia 30 cms and top dia. 20 cms,Top Circular plate of 45 cms dia. For arrow,total height 188 cms and coated with black epoxy powder coating and three yellow retroreflectove high intensity prismatic bands of 15 cms width applied in the body and blue and white circular reflector on top plate,as per the drawing using High intensity prismatic grade ASTM Type 4 material,Fixed at site in M15 PCC having size 45 x 45 x 60 CM including all material , labour, transport , fixing etc. complete as per directed by engineer in charge.	52.00	Nos	6474.18	336657.36
9	Supply and fixing of Convex Mirror made from Polycarbonate or acrylic lens, with 1000mm Dia, having viewing angle of 130-160 degree. The convex mirror should be weather proof, impact resistant, and anti corrosion. The mirror should be mounted on 65 NB poles with necessary fixtures or grouting in the ground with CC of 1:2:4 complete as directed by Engineer-in-charge	42.00	Rmt	2272.50	95445.00

10	Providing and Fixing inbuilt battery Solar Blinkers on existing pole and Solar Panel after removing required existing Solar Blinkers accessory battery 12.8V, 6 Ah, LIFEPRO 4 with suitable charge controller maintenance free Colour- Amber, with 200 mm Dia. 24 Hours flashing Blinker Aspect as per MoRTH Standards in accordance to IRC:93 and IS 7537 and as shown in the drawings in the code.	54.00	Nos	16475.12	889656.48
11	Facia Replacement for overhead signs: Sign board per Square Meter :-Providing and fixing sign boards made out of 4mm ACP (Aluminum composite Panel); size as per design of IRC-67- 2012. Pre treated with phosphating process & acid etching; reflectorised with Micro Prismatic Grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and latest M.O.S.T.Specifications; for each board shall be as per the instruction 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 with contractor's own expanses for the product offered shall be submitted by contractor with his own expensis including all necessary fixture, labours,lifting,machinery, transportation and fastening etc complete as directed by Engineer incharge. (A) Class-C Type-11 Retro Reflective sheeting.	8.10	Smt	9714.08	78684.05
12	Supply and fixing of Convex Mirror made from Polycarbonate or acrylic lens, with 1000mm Dia, having viewing angle of 130-160 degree. The convex mirror should be weather proof, impact resistant, and anti corrosion. The mirror should be mounted on 65 NB poles with necessary fixtures or grouting in the ground with CC of 1:2:4 complete as directed by Engineer-in-charge	54.00	Nos	7022.82	379232.28
				Total	5790384.84

Rupees Fifty Seven lakhs Ninety thousand Three hundred Eighty Four & Eighty Four Paise only

I/We am/are willing to carry out the work at.....% above/below percent(Should be written in figures and words) of the estimated rate mentioned above.
Amount of my /our tender works out as under.

Estimated amount put to tender
Deduct.....% below
Net
In words

Estimated amount put to tender
Add.....% Above
Net
In words

- 1 The Contractor shall exhibit a board with detailed specification and details of work as directed by the Engineer-In-Charge for which no extra payment shall be made.
- 2 The labour cess will be deducted as per prevailing rules i.e. 1% of the work done.
- 3 GST and Income tax TDS will be deducted at a source while making payments of bills.
- 4 In all R.C.C. Items in Rate Analysis Standard Cement Consumption has been taken as per Govt. G.R.: PRC-10/2017 Cement Consumption/16/C Date:11/05/2017 as stated in S.O.R. therefore in R.C.C. items where there is a change as per actual mix design the cost of difference of cement consumption have been deducted from the rate of original item at the rate of input rate mentioned in all the tender.

**Deputy Executive Engineer
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