

**Name of Work :- Construction of Minor Bridges on various roads of Santrampur Taluka under MMGSY 2024-25 (Tribal) Package No. 29 (Total 3 Roads) Dist. Mahisagar.**

**SPECIFICATION INDEX**

<b>It. No.</b>	<b>Description of Item</b>	<b>Applicable Separate Road Specification attached reference</b>
1	Box cutting the road surface to proper slope and camber for making a base for road work including removing the excavated stuff and depositing on the road side slope as directed within all lead and lift.	As per seperate sheet attached.
2	Providing, laying and spreading Granular sub base (Grade-I) by providing close graded MCBT material in single layer with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC and compacted with vibratory roller 80 to 110 KN static weight to achieve desired density etc. completed.	As per seperate sheet attached.
3	Providing & laying compacted WBM Grading-II using MCBT metal of size 53mm to 22.4mm in required layers including using 24% stone screening, 11.2mm size and 8% stone dust as filler including spreading, watering and consolidation by vibratory roller as per MORTH specification etc complete as directed by engineer in charge.	As per seperate sheet attached.
4	Earthwork for embankment including breaking clods, dressing with all lead and lift including rolling with power roller, watering and consolidation from borrow pits within land width.	As per seperate sheet attached.
5	Providing and laying compacted of specified quarry spaul in side shoulder including carriage of material and spreading on prepared base including compacting as per MORTH specification etc. complete.	As per seperate sheet attached.
6	Providing and filling in foundation with ordinary cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 crushed stone aggregate 20mm nominal size) mix and providing necessary vertical pin headers including formwork, vibrating, ramming and curing complete.	As per seperate sheet attached.
7	Providing and casting in situ ordinary cement concrete M-250 mix with Trimix C.C. Road laid as directed including vibrating, curing and filling in joints with bitumen complete.	As per seperate sheet attached.
8	Providing and fixing I.S.I. mark T.M.T. bar Fe-550D reinforcement for R.C.C. work including binding, bending and placing in position complete upto floor two level.	As per seperate sheet attached.
9	Supplying, fixing and joining reinforced concrete heavy duty non-pressure pipes carrying Indian Railway standard with collars for culverts carrying heavy traffic as per Indian Railway standard specification including setting and joining the pipes in C.M. 1:2 watering and laying (to level or slopes) of I.S. class NP-4 of 300mm internal diameter.	As per seperate sheet attached.

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10	Hazard Marker Sign :- Providing and fixing sign board made out of 2mm aluminium sheet size 90 x 30 cms. rectangle as per the design / drawing attached (IRC) pretreated with phosphating & acid etching, coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with retro reflective sheeting as per latest M.O.R.T.H. specification, 3.1m long (2 nos.) stand post and frame fabricated from suitable size iron angle of 35 x 35 x 3mm & 50 x 50 x 5mm 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 instruction of Engineer in charge. The fixing at site shall be in 1:2:4 C.C. block of size 45 x 45 x 60cms for each leg including excavation curing etc. complete under the supervision of Engineer in charge (A) Engineer Grade (VR).	As per separate sheet attached.
11	Direction sign (Junction board) :- Providing and fixing sign boards made out of 2mm aluminium sheet size 244 x 122cms. rectangle as per the design of IRC-67-1977 pre treated with phosphating process & acid etching coated 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, Letters and numerals should be as per IRC-30-1968, 3.1m long (2 Nos.) stand post and frame fabricated from suitable size iron angle of 50 x 50 x 5mm, 75 x 75 x 6mm as required, 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 60cms. for each leg including excavation curing etc. complete under the supervision of engineer in charge. (A) Engineer grade. (VR)	As per separate sheet attached.
12	Citizen's Information Board : Providing and fixing of typical information board as per instruction. Two M.S. plate of 1.6mm thick of 900mm x 750mm size fixed at top and bottom duly welded with M.S. angle with angles of 25 x 25 x 5mm thick M.S. plate shall be welded by two vertical M.S. flat and four horizontal M.S. flats 5mm thick to 75mm x 75mm of 12 SWG square tube posts duly embedded in cement concrete M-15 grade C.C. blocks of 600 mm x 600mm x 750mm below ground level. Painting new letters and figures of any shade with ready mixed synthetic enamel paint of superior quality in required shade and coloured, all sections of frame joints and steel tube will be painted with primer and two coats of epoxy paint as per drawing clause 1701 & Annexure 1700.1 (10.16).	As per separate sheet attached.
13	Road marking with hot applied thermoplast compound with reflectorising glass beads on bituminous surface and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads @250 gms/sqmt area, thickness of surface applied glass beads as per IRC 35. The finish surface to be level uniform free from streaks and holes.	As per separate sheet attached.
14	Supply & fixing logo board of MMGSY diamond size (600mm x 600mm) 16 gauge & board plate size (900mm x 250mm) 16 gauge thick M.S plate and 2.40 mt. deep length single angle 75 x 75 x 6 mm size including fitting and painting lettering with luminous color as per drawing etc. complete.	As per separate sheet attached.

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15	Cautionary Warning Sign :- Providing and fixing sign board made out of 2mm aluminium sheet size 90 x 90 x 90 cms equilateral triangle as per the design of IRC-67-1977. Pre treated with phosphating process and acid etching coated with one coat of epoxy primer and two coats of best quality epoxy paint, reflectorized with retro reflective sheeting as per the latest M.O.R.T.H. specification, 3.1 Mt. long stand post and frame fabricated from suitable size iron angle of 35 x 35 x 3 mm, 75 x 75 x 6 mm; painted with best quality epoxy coating 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) Engineer grade (VR).	As per separate sheet attached.
16	Informatory Warning Sign :- Providing & fixing sign boards made out of 2mm aluminium sheet size 80 x 60 cms as per design of IRC 67-1977. Pre treated with phosphating process and acid etching coated with one coat of epoxy primer and two coats of best quality epoxy paint, reflectorized with retro reflective sheeting as per the latest M.O.R.T.H. specification, 3.1 mt. long stand post and frame fabricated from suitable size iron angle of 35 x 35 x 3 mm, 75 x 75 x 6 mm; painted with best quality epoxy coating 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) Engineer grade (VR).	As per separate sheet attached.
17	Type - A, "W" : Metal Beam Crash Barrier (Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 70 cm above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fittings to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 810)	As per separate sheet attached.
18	Cat Eye/ Road Stud/ RPM :- Supplying of moulded Twin shanks Raised pavement markers made of Polycarbonate and ABS moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the distance and shall support a load of 13635 Kgs. tested in accordance to ASTM-D 4380 Type H and complying to specifications of Category - A of MORTH circular No. RW/NH/33023/10-97-DO in Dt. 11.06.1997. The height, width and length shall not exceed 20mm, 130mm and 130mm and width minimum reflective area of 13 Sq.cm on each side and slope to the base shall be 35 +/- 5 degrees. The strength of detachment of the integrated cylindrical shanks (of diameter not less than 19 +/- 2 mm) and height not less than 30+/-2mm) 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 manufacture's recommendations and the colour of the marker should be as per the IRC 35-2005 and as directed by engineer in charge.	As per separate sheet attached.

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19	Excavation for foundation up to 1.50 mt. depth including sorting out and stacking of useful material and disposing off the excavated stuff within all lead and lift for all sorts of soil.	As per seperate sheet attached.
20	Providing and filling in foundation with ordinary cement concrete M-100 mix and providing necessary vertical pin headers including formwork, vibrating, ramming and curing complete.	As per seperate sheet attached.
21	Providing and casting in situ ordinary cement concrete M-150 mix and providing necessary pin headers including shuttering, scaffolding, laying, vibrating, curing and finishing complete without V-groove (A) height 0.0 to 5.0 mt.	As per seperate sheet attached.
22	Providing and fixing Guard stone as per IRC type design including white washing etc. complete. (ii) Fixing in C.C. 1:5:10.	As per seperate sheet attached.
23	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundation etc. in layer not exceeding 20 cm in depth consolidating each deposited layer by ramming and watering etc. complete.	As per seperate sheet attached.
24	Providing and laying filter media 600 mm thick as directed at back of abutment, returns and wing walls as per detailed specifications.	As per seperate sheet attached.
25	Providing and filling sand behind abutment & between returns in layers as directed etc. complete.	As per seperate sheet attached.
26	Providing flood gauge marks on sub structure as per design including painting complete.	As per seperate sheet attached.
27	Providing masonry steps with cement pointing on approaches as directed.	As per seperate sheet attached.
28	Providing fusion bonded epoxy coating not less than 175 micron thickness and up to 300 micron to reinforcement bars as per IS-13620-1993/ATM-775M including testing of coating at plant and all taxes (A) 10mm to 16mm dia. bar.	As per seperate sheet attached.
29	Providing fusion bonded epoxy coating not less than 175 micron thickness and up to 300 micron to reinforcement bars as per IS-13620-1993/ATM-775M including testing of coating at plant and all taxes (B) 20mm to 32mm dia. bar.	As per seperate sheet attached.
30	Demolition including stacking of serviceable materials and disposal of unserviceable material with all lead and lift (1) RCC work.	As per seperate sheet attached.
31	Excavation for foundation in sand, gravel, clay soft soils and murrum etc. including shoring, strutting dewatering as necessary and disposing of the excavated stuff as directed. (A) Depth upto 3.0 M. and lead upto 100m for 10 Cum.	As per seperate sheet attached.
32	Providing and casting in situ ordinary cement concrete M-150 for R.C.C. raft and cut-off walls including necessary shuttering, laying, vibrating, ramming and curing complete.	As per seperate sheet attached.
33	Providing and casting in situ controlled cement concrete M-300 for R.C.C. raft and cut-off walls including necessary shuttering, laying, vibrating, ramming and curing complete.	As per seperate sheet attached.

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34	Providing and laying in position I.S.I. mark Fe-550D T.M.T. bar reinforcement including cutting, bending, hooking and tying complete as per detailed drawing for foundations.	As per separate sheet attached.
35	Providing and casting in situ controlled cement concrete M-300 for R.C.C. return as per drawings including centering, shuttering, scaffolding wherever necessary laying, vibrating, curing and finishing complete. (A) Height from 5.0 mt. to 10.0 mt. (1) Piers & Caps (2) Abutment & caps (3) R.C.C. returns.	As per separate sheet attached.
36	Providing and laying in position I.S.I. mark Fe-550D (T.M.T.) bar reinforcement including cutting, bending, hooking and tying complete as per detailed drawing for the following (A) Piers (B) Abutment & (C) R.C.C. return.	As per separate sheet attached.
37	Providing and laying weep hole in abutment and returns by using A.C. pipes of 100 mm dia. with laying in proper grade and jointing the completed as per detailed specification.	As per separate sheet attached.
38	Providing and casting in situ or precast controlled cement concrete M-350 for prestressed concrete work in super structure including centering, shuttering, curing, scaffolding, ramming, vibrating, finishing and launching or shifting complete (i) Solid slab.	As per separate sheet attached.
39	Providing and placing in position I.S.I. mark Fe-550D T.M.T. bar reinforcement including cutting, bending, hooking and tying complete as per detailed drawing. (B) T-Beam and deck slab type of super structure (i) Solid slab.	As per separate sheet attached.
40	Providing C.I. 100mm diameter water spout including necessary iron grating as per drawings.	As per separate sheet attached.
41	Providing and casting in situ controlled cement concrete M-40 for average 100mm thick wearing coat laid as directed including tamping, vibrating, finishing, curing and filling in joints with bitumen complete.	As per separate sheet attached.
42	Reinforced cement concrete crash barrier (Provision of an Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with M-40 grade concrete with T.M.T. Fe-550D reinforcement conforming to IRC:21 and dowel bars 25 mm dia., 450 mm long at expansion joints filled with pre-moulded asphalt filler board as per drawing having bottom size of 450mm, top 225mm and Ht. 1100mm all locations directed by the Engineer.	As per separate sheet attached.
43	Providing and casting in situ controlled cement concrete M-150 for approach slab including form work, curing and finishing complete.	As per separate sheet attached.
44	Providing and casting in situ controlled cement concrete M-200 for approach slab including form work, curing and finishing complete.	As per separate sheet attached.
45	Providing pre-moulded asphalt filler joints as per drawings (A) 40mm.	As per separate sheet attached.
46	Filling around pipes with murrum including dressing, tamping etc. complete (Soil cone pitching)	As per separate sheet attached.
47	Providing panel wall for dry stone pitching in uncoursed rubble masonry with hard stone of approved quality in cement mortar 1:3 including curing etc. complete.	As per separate sheet attached.

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48	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification.	As per seperate sheet attached.
49	Providing and casting in situ ordinary cement concrete M-150 mix and providing necessary pin headers including shuttering, scaffolding, laying, vibrating, curing and finishing complete.	As per seperate sheet attached.
50	Providing and casting in situ ordinary cement concrete M-250 for R.C.C. raft and cut-off walls including necessary shuttering, laying, vibrating, ramming and curing complete.	As per seperate sheet attached.
51	Providing and casting in situ controlled cement concrete M-250 for R.C.C. return as per drawings including centering, shuttering, scaffolding wherever necessary laying, vibrating, curing and finishing complete. (A) Height from 0.0 mt. to 5.0 mt. (1) Piers (2) Abutment (3) R.C.C. returns.	As per seperate sheet attached.
52	Providing and casting in situ controlled cement concrete M-250 for R.C.C. works in pier cap, abutment cap and dirt wall including controlled cement concrete M-300 bed block or pedestal of required size below bearing as per detailed drawing, centering, shuttering, scaffolding wherever necessary laying, vibrating, curing and finishing complete.	As per seperate sheet attached.
53	Providing and casting in situ controlled cement concrete M-250 for R.C.C. solid slab including centering, scaffolding, curing and finishing complete.	As per seperate sheet attached.
54	Providing P.V.C. 100mm diameter water spout including necessary grating as per drawing 0.50 per length.	As per seperate sheet attached.
55	Providing and fixing in position mild steel dowel bars (I.S.I. mark) in pier caps or abutments caps for anchorage in fixed end as per detailed drawing including cutting, bending and welding complete.	As per seperate sheet attached.
56	Providing and fixing in position mild steel dowel bars (I.S.I. mark) in pier caps or abutments caps for anchorage in free end as per detailed drawing including cutting, bending and welding complete.	As per seperate sheet attached.
57	Reinforced cement concrete crash barrier (Provision of an Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with M-400 grade concrete with TMT Corrosive Reinforcement Steel (CRS) conforming to IRC:21 and dowel bars 25 mm dia., 450 mm long at expansion joints filled with pre-moulded asphalt filler board, keyed to the structure on which it is built and installed as per design given in the enclosure to MOST circular No. RW/NH - 33022/1/ 94-DO III dated 24 June 1994 as per dimensions in the approved drawing and at locations directed by the Engineer, all as specified).	As per seperate sheet attached.
58	Removal of NP2 - 900mm dia. pipe including stacking serviceable material on site of work as directed.	As per seperate sheet attached.
59	Supplying and fixing reinforced concrete heavy duty non-pressure pipes with collars for culverts including setting and joining the pipes in C.M. 1:2 watering and laying (to level or slopes) of I.S. class NP-4 of 1200mm internal diameter.	As per seperate sheet attached.

<b>It. No.</b>	<b>Description of Item</b>	<b>Applicable Separate Road Specification attached reference</b>
60	Providing, laying and rolling 25 mm thick open graded premixed bituminous carpet with B.T. aggregate as specified and using bitumen (VG-30) for mixing with aggregate at the rate of 3.36% i.e. 33.60 kg/M.T. of total mix including heating and mixing in drum mix plant and spreading the same with paver finisher and consolidation with vibratory roller as per MORTH specification including necessary firewood, oil, lubricants, labour charges etc. using contractor's own drum mix plant and equipment, tools etc. completed in accordance with the requirement of specification.	As per seperate sheet attached.
61	Providing and laying seal coat with B.T. aggregate as specified using aggregate at the rate of 0.18 cum/10 Sqmt and bitumen grade (VG-30) for mixing with aggregate at the rate of 4.50% i.e. 45.00 kg/M.T. of total mix including heating and mixing in drum mix pant, spreading the same with paver finisher and consolidation with vibratory roller including necessary firewood, oil, lubricants, labour charges etc. using contractor's own drum mix plant and equipment, tools etc. complete in accordance with the requirement of specification.	As per seperate sheet attached.
62	Providing and laying evenly tack coat using rapid setting emulsion (RS-1) materials at the rate of 4.00 Kg / 10 Sq.M. on road surface using emulsion pressure sprayer including the cost of all labour, materials, heating, machinery & equipment etc. complete.	As per seperate sheet attached.

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