

Name of Work :- Remaining work of MMGSY-2020-21 (SCSP) Resurfacing to various Roads of Virpur Taluka Dist. Mahisagar (Non Plan) Package No. 2020-21/07.

SPECIFICATION INDEX

It. No.	Description of Item	Applicable Separate Road Specification attached reference
1	Clearing and grubbing road land including uprooting wild vegetation grass bushes, shrubs, sapling and trees of girth up to 300mm removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable materials as per Clause-201 (area of light density) by mechanical means in area of light jungle.	As per seperate sheet attached.
2	Earthwork in cutting including preparing the slope and camber and stacking or utilizing the cutting stuff in spoil bank as directed upto 200 meters from the end of cutting with all lead and lift.	As per seperate sheet attached.
3	Earthwork for embankment including breaking clods, dressing with all lead and lift including watering and consolidation from borrow area within all lead and lift.	As per seperate sheet attached.
4	Rolling and watering of earthwork in layers with power roller including filling in depressions which occur during the process.	As per seperate sheet attached.
5	Scarifying gravelled macadam or bitumen macadam surface 6 cm to 10 cm.depth including stacking useful materials on road side and disposing off remaining stuff.	As per seperate sheet attached.
6	Providing & laying compacted WBM Grading-II using MCBT metal of size 45mm to 63mm in required layers including using 16% stone screening, 13.2mm 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.
7	Providing and laying compacted of specified hard murrum in side shoulders including carriage of material and spreading on prepared base including compacting as per MORTH specification etc. complete.	As per seperate sheet attached.
8	Providing and laying bituminous grout 37.5mm thick with asphalt of grade of VG-30 at the rate of 1.99% by weight of mix for mixing 4.00 kg./10 Sq.M. for tackcoat and using B.T. chips of required gradation including cleaning and heating asphalt premix materials by hot mix process in proper gradation and laying with paver finisher and consolidation by roller of 8 to 10 tonnes as per MORTH specification including cost of all materials, asphalt, aggregates, labour charges, royalty charges etc. completed as directed.	As per seperate sheet attached.
9	Providing and laying bituminous grout 37.5mm thick with asphalt of grade of VG-30 at the rate of 1.99% by weight of mix for mixing 2.50 kg./10 Sq.M. for tackcoat and using B.T. chips of required gradation including cleaning and heating asphalt premix materials by hot mix process in proper gradation and laying with paver finisher and consolidation by roller of 8 to 10 tonnes as per MORTH specification including cost of all materials, asphalt, aggregates, labour charges, royalty charges etc. completed as directed.	As per seperate sheet attached.

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10	Providing, laying and rolling 25 mm thick open graded premixed bituminous carpet with B.T. aggregate as specified and using bitumen (VG-30) for tack coat at the rate of 2.50 kg./10 Sq.M. and using bitumen 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 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 separate sheet attached.
11	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 plant, 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 separate sheet attached.
12	Providing and laying asphalt painting on B.T surface with bitumen grade VG-30 at the rate of 5.00 Kg / 10 Sqm by mechanical sprayer and spreading the stone dust on prepared surface at the rate of 0.03 Cum /10 Sqm and rolling with smooth wheeled and pneumatic roller and brushing etc. complete.	As per separate sheet attached.
13	Providing and fixing ordinary kilometer stone of approved hard stone as per IRC type design and fixing in C.C 1:4:8 including lettering and paints etc. complete.	As per separate sheet attached.
14	Providing and fixing Hectometer stone as per I.R.C. type design including painting, lettering etc.complete (i) Fixing in earth.	As per separate sheet attached.
15	Providing and fixing precast Guard stone as per I.R.C. type design including white washing etc. complete (i) Fixing in earth.	As per separate sheet attached.
16	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 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-4 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 7 years for the Retro reflective sheeting from original manufacturer & a certified copy of 3 year outdoor exposure test report from contractor. (B) Class-B Type-4 Retro Reflective sheeting.	As per separate sheet attached.

It. No.	Description of Item	Applicable Separate Road Specification attached reference
17	Regulatory/Mandatory sign :- Providing and fixing sign board 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 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-4 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 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	As per separate sheet attached.
18	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 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-4 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 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	As per separate sheet attached.
19	Citizen's information Board :- Providing and fixing of typical MMGSY information board as per instruction. Two MS plates of 1.6 mm thick, of 900 mm x 750mm size fixed at top & bottom duly welded with MS angles of 25 x 25 x 5 mm thick M.S plate shall be welded by two vertical M.S flats & four horizontal M.S flats 5 mm thick to 75 mm x 75 mm of 12 SWG square tubes posts duly embedded in cement concrete M-15 grade blocks of 600mm x 600mm x 75mm, below ground level. Painting New letters & figure of any shade with ready mixed synthetic enamel paint of superior quality in required shade and colour, All sections of framed posts and steel tube will be painted with primer and two coats of epoxy paints as per drawing Clause 1701 and annexure 1700.1 (10.16) 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.	As per separate sheet attached.

It. No.	Description of Item	Applicable Separate Road Specification attached reference
20	<p>Hazard Marker sign : Providing and fixing sign boards made out of 1.5mm aluminium sheet / 3mm ACP (Alluminium composite panel) size 90 x 30cms. rectangular 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-4 as per ASTM D-4956 and latest M.O.R.T.H. specifications, 1.8 mt. long stand post and frame fabricated from suitable size 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 7 years for the Retro reflective sheeting from original manufacturer & a certified copy of 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</p>	As per seperate sheet attached.
21	<p>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-4 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 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</p>	As per seperate sheet attached.
22	<p>Road marking with hot applied thermo plastic paint with reflectorising glass bend on bitumen surface. Providing and laying of hot applied thermo plastic compound 2.5mm thick including reflectorising glass beads @ 250 gms. per Sqmt. area thickness of 2.5mm is exclusive of surface applied glass beads 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 line should provide luminance coefficient on cement road shall be min 130 mcd/m2/lux and asphalt road shall be min 100 mcd/m2/lux during the service life curing day time the marking should meet the performance criteria for night time reflectivity, wet reflectivity and skid resistance as mentioned in the section of IRC 15:2015. warranty for retro reflectivity shall be two years.</p>	As per seperate sheet attached.

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23	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 fitments 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) with necessary excavation, foundation concrete etc. complete	As per separate sheet attached.
24	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 Dense or hard soil.	As per separate sheet attached.
25	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 slope) of I.S. class NP2 of following internal diameters. (i) 300mm dia.	As per separate sheet attached.
26	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 separate sheet attached.
27	Filling around the pipes with murrum including dressing, tampering etc. complete.	As per separate sheet attached.
28	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-Grooves. (A) Height from 0.0 M. to 5.0 M.	As per separate sheet attached.
29	Providing and placing in position I.S.I. mark Fe-415 T.M.T. bar reinforcement for following items including cutting, bending hooking and tying complete as per detailed drawing.	As per separate sheet attached.
30	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm. in depth consolidating each deposited layer by ramming and watering.	As per separate sheet attached.
31	Providing and laying weep hole in abutment and returning by using A.C. pipes / PVC pipe of 100 mm. diameter including laying in proper grade and joining etc. comp as per detailed specifications.	As per separate sheet attached.

Deputy Executive Engineer
Panchayat (R & B) Sub Division
Balasinor

Executive Engineer
Panchayat (R & B) Division
Mahisagar (Lunawada)