

**KACHCHH PANCHAYAT R. & B. DIVISION BHUJ**

**NAME OF WORK:-WORK OF CONSTRUCTING,WIDENING,STRENGTHENING AND RESURFACING VARIOUS IMPORTANT ROADS AND WHEN REQUIRED OR IN EMERGENCY UNDER KUTCH-BHUJ (PANCHAYAT) ANNUAL BASIS DIST.KUTCH Nakhatrana, Abdasa & Lakhapat**

**SPECIFICATION INDEX**

<b>Sr.No.of the Item in schedule-"B"</b>	<b>Brief Description of Item</b>	<b>Page No.</b>
1	Clearing and grubbing road land including uprooting rank vegetation grass bushes,shrubs,sapling and trees girth up to 300 mm removal of stumps of trees cut earlier and disposal of unserviceable materials (C) By mechanical means in area of light jungle.	As per Specification Booklet
2	Scarifying & Removing bitumen Macadam surface including completely removing out the entire existing bituminous Surface, stacking useful materials on road side and disposing off remaining stuff. Complete. As per instruction in Charge Engineer.	As per Specification Booklet
3	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 upto 50Mt.lead.	As per Specification Booklet
4	Earthwork for embankment including breaking clods, dressing with all lead and lift (including watering and consolidation) (B) From Borrow area with in all lead.	As per Specification Booklet
5	Earthwork in cutting in all sorts of soil and soft murrum including conveying and spreading the stuff, embankment as and where directed within 200meters from the end of the cutting with all required lead and lift.	As per Specification Booklet
6	Rolling and watering of earthwork in layers with power roller including filling indepressions which occur during the process.	As per Specification Booklet
7	Providing and laying 100 mm Compacted of Specified quarry Spall in side shoulder including carriage of material and spreading on prepared base including compacting as per MOST Specification etc... complete.	As per Specification Booklet
8	Laying and spreading available soil in the sub-grade on a prepared surface, pulverising, mixing the spread soil in place with rotavator with 3 per cent slaked lime having minimum content of 70 per cent of CaO, grading with motor grader and compacting with the road roller at OMC to the desired density to form a layer of improved sub grade	As per Specification Booklet
9	Providing, laying and Spreading 150 mm Granular sub-base (Grade-I) by providing close graded B.T.M.C. material in single layer with motor grader on prepared surface, mixing by mix in place method with rotovator at OMC and compacted with vibratory roller 80 to 110 KN static weight to achieve desire density etc completed.	As per Specification Booklet

Sr.No.of the Item in schedule-"B"	Brief Description of Item	Page No.
10	Providing and laying 100 mm compacted WBM of using B.T.M.C. metal of size 90mm to 45mm in layers including 27% stone screening 13.2mm size and 8% stone dust as filler, including spreading, watering and consolidation by vibratory roller as per MoRTH specifications etc. complete as directed by Engineer-in-charge. (Grade-I)	As per Specification Booklet
11	Providing and laying 100 mm compacted WBM of using B.T.M.C. metal of size 45mm to 63mm in layers including 16% Grit and 8% stone dust as filler, including spreading, watering and consolidation by vibratory roller as per MoRTH specifications etc. complete as directed by Engineer-in-charge. (Grade-II)	As per Specification Booklet
12	Providing, Laying, spreading and compacting 250 mm thick graded stone aggregates to wet mix macadam in two each layers (125+125) mm as per MoRTH 5th Revision specification as per clause 406 including premixing the material with water at OMC in mechanical mix plant, carriage of mixed material by tippers to site, laying in uniform layers with paver in sub base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	As per Specification Booklet
13	Supplying and fixing reinforced concrete heavy duty non-pressure pipes with collars for culverts carrying heavy traffic as per IS 458-1991 specifications including setting the pipes in C.M. 1:2 watering and laying (to level or slopes) of class NP3 of following internal diameters.(i) 300mm dia.	As per Specification Booklet
14	Supplying and fixing reinforced concrete heavy duty non-pressure pipes with collars for culverts carrying heavy traffic as per IS 458-1991 specifications including setting the pipes in C.M. 1:2 watering and laying (to level or slopes) of class NP3 of following internal diameters.(iii) 600mm dia.	As per Specification Booklet
15	Providing, laying and rolling of built-up spray grout layer over prepared base consisting of a two layer composite construction of crushed coarse aggregates using motor grader for aggregates. Key stone chips spreader may be used with application of bituminous binder after each layer, and with key aggregates placed on top of the second layer to serve as a base, conforming to the line, grades and cross-section specified, the compacted layer thickness being 75 mm as per Technical Specification Clause 505.	As per Specification Booklet
16	Providing & laying Bituminous grout 37.50 mm thick with asphalt of grade of VG-30 at the rate of 1.99% by weight of mix for mixing 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 including cost of all materials, Asphalt, aggregates, labour Charges, royalty charges etc.completed as directed. including flushing key aggregate @0.13 Cum/10 Sq.m.	As per Specification Booklet

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17	Providing laying and rolling 25 mm thick open graded premixed bituminous carpet with B.T. aggregate as specified and using bitumen (Grade 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 power roller including necessary firewood, oil, lubricants, labour charges etc. using contractor's own drum mix plant and equipment, tool etc. completed in accordance with the requirement of specific	As per Specification Booklet
18	Providing & Laying 50 mm Compacted thick Bituminous Macadam with B.T. Aggregate as per MORT & H specification & Emulsion RS1 for tack coat @ 2.5 Kg / 10 Sq.m. on B.T surface With Mechanical Sprayer & Bitumen Grade VG-30 for mixing @ 35 Kg. / M.T. i.e. 3.5% of total weight of mix including heating & mixing the aggregate & asphalt in continuous batching mix plant and spreading the same by paver finisher & consolidation with vibratory roller including providing all materials equipments, tools & plants, fire wood, oil, kerosene, labour charges etc. complete using contractor's own machinery drum mix plant & paver finisher etc. complete.	As per Specification Booklet
19	Providing & Laying 20 mm thick mix seal surface using B.T. stone chips as per MORT&H gradation Type - A and Specification with bitumen grade VG-30 for mixing at the rate of 51.00 kg/M.T. of total weight of mix (i.e. 5.10 % of total wt. of mix) and mixing aggregate and asphalt by drum mix plant and spreading the same by paver finisher including rolling and consolidation with static roller and providing tools and plant fire wood, oil, kerosene, labour charges using contractor own machineries etc.	As per Specification Booklet
20	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 4.5 % i.e 45.00 Kg/M.T of total mix including heating and mixing in drum mix plant and spreading the same by paver finisher and consolidation with Power roller including necessary fire wood oil, lubricans ,labour charges using contractor's own drum mixplant, machineries and equipment ,tools ( including flushing & screened stone dust etc .complete in accordance with the requirement of specification.	As per Specification Booklet
21	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 Specification Booklet
22	Providing & Casting in situ ordinary cement concrete M-250 mix with Trimix C.C Road laid as directed including temping, vibrating, finishing, curing and filling in joints with bitumen etc as per Engineer Incharge.	As per Specification Booklet
23	Providing TMT Bar FE 500D reinforcement for R.C.C. work including bending, binding and placing in position complete upto floor two level for temperature reinforcement.	As per Specification Booklet

Sr.No.of the Item in schedule-"B"	Brief Description of Item	Page No.
24	Providing & Laying Pre Cast Concrete Box Drain 2500mm X 2500mm. As per Drawing, laying in gradient/ Slope, laying on Road Site completed As per Site. The product shall be made by using advanced precast technology using high performance selfcompacting concrete of C40 / M50 grade and Fe 500 D grade TMT steel reinforcement bar. The product shall have a load carrying capacity of 5 Tonnes Wheel load for heavy vehicle movement at road crossing including loading, Unloading, Transportation and Installation.	As per Specification Booklet
25	Providing and laying Rubble with loading and unloading at site including packing & Filling as directed engineer in charge	As per Specification Booklet
26	Providing and laying rubble for apron (each stone weighting not less than 40Kg.) including and packing and filling in the interstices with quarry-spalls.	As per Specification Booklet
27	Providing and fixing Hectometer as per I.R.C. type design including painting, lettering etc. complete.(ii) Fixing in C.C. 1:5:10	As per Specification Booklet
28	Providing and fixing guard stone as per I.R.C. type design including white washing etc. complete.(ii) Fixing in C.C. 1:5:10	As per Specification Booklet
29	Providing and fixing 5th Kilometer stone of precast C.C. 1:2:4 including necessary reinforcement as per I.R.C. type design in C.C. 1:4:8 including painting,lettering etc. complete (For N.H., S.H. and M.D.R.)	As per Specification Booklet
30	Providing and fixing ordinary Kilometer stone of precast C.C. 1:2:4 including necessary reinforcement as per I.R.C. type design in C.C. 1:4:8 including painting,lettering etc. complete (For O.D. road V.R.)	As per Specification Booklet
31	Providing and fixing ordinary Kilometer stone of precast C.C. 1:2:4 including necessary reinforcement as per I.R.C. type design in C.C. 1:4:8 including letter and paints etc. complete (For N.H., S.H. and M.D.R.)	As per Specification Booklet
32	Cautionary Warning Sign :-Providing and fixing sign boards made out of 2mm aluminium sheet; size 90 x 90 x 90 cms. equilateral triangle as per 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; 3.1m long stand post and frame fabricated from suitable size iron angle of 35 x 35 x 3mm, 75 x 75 x 6mm as required; painted with best quality epoxy coatings in black and white bands. 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 Specification Booklet

Sr.No.of the Item in schedule-"B"	Brief Description of Item	Page No.
33	<p>Cautionary Warning 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 &amp; 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; 3.6mtr 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 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 rer &amp; 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 sheetingto Reflective sheet</p>	As per Specification Booklet
34	<p>Village name/ Bump Ahead sign :-Providing and fixing sing boards made out of 2mm aluminium sheet; size 90 x 60cms. rectangle as as per the design of IRC-67-1977 pre treated with phospheting process &amp; 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 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)...</p>	As per Specification Booklet

Sr.No.of the Item in schedule-"B"	Brief Description of Item	Page No.
35	<p>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 phosphating process &amp; 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; 3.3mtr 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 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 frer &amp; 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 Reflective sheeting</p>	As per Specification Booklet
36	<p>Providing and fixing Junction board of M.S. plates and angles as per standard I.R.C. design including fixing in C.C. 1:4:8 with necessary excavation painting figuring and lettering on board etc. complete.</p>	As per Specification Booklet
37	<p>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 750 mm size fixed at top and bottom duly welded with MS angles of 25 x25 x 5 mm thick M.S. plate shall be welded by welded bt two vertical M.S.flats &amp; four horizontal M.S. flates 5 mm thick to 75 mm x 75 mm of 12 SWG square tubes posts duly embedded in cement concrete M-15 grade block of 600 mm x 600 mm x 75 mm,below ground level.Painting New letters &amp; figure of any shade with ready mixed synthetic enample paint of superior quality in required shade and colour,All sections of framed posts and steel tube will be painted with primer and two coars of epoxy paints as per drawings clause 1701 and Annexure 17001 (10.16)</p>	As per Specification Booklet
38	<p>Hazard Marker Sign :-Providing and fixing sing boards made out of 2mm aluminium sheet; size 90 x 30cms. rectangle as as per the design/drawing attached (IRC) pretreated with phosphating process &amp; 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; 3.1m long stand post and frame fabricated from suitable size iron angle of 35 x 35 x 3mm &amp; 50 x 50 x 5mm painted with best quality epoxy coatings The fixing at site shall be in 1:2:4 CC block of size 45x45x 60cms. for each leg. including excavation curing etc. complete under the supervision of engineer in charge.(A) Engineer Grade(VR)...</p>	As per Specification Booklet

Sr.No.of the Item in schedule-"B"	Brief Description of Item	Page No.
39	Hazard Marker Sign :-Providing and fixing sign boards made out of 2.0 mm aluminium sheet / 4 mm ACP (Aluminum composite Panel); size 90x30 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; 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 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	As per Specification Booklet
40	Chevron Board on Curve Providing and fixing sign boards made out of 3 mm aluminium sheet, size 60x45cms. rectangle pre treated with phospheting process & acid etching. coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with retro sheeting as per latest M.O.S.T. Specifications ; 2.1m long stand post of 50 mm dia. M.S.Pipe and frame may fabricated either from iron angle of 35 x 35 x 3mm as required, painted with best quality epoxy coating in black and white bends. The fixing at site shall be in 1:2:4 CC block of size 45 x 45x 60cms. for each leg, including excavation curing etc. complete under the supervision of engineer in charge.(A)Engineer Grade	As per Specification Booklet
41	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.	As per Specification Booklet
42	Providing & Fixing " FLOOD GUAGE POST" on Causeway / dip having (Channel size 100 x 50 mm) i.e. C.C. 1:2:4 in headwall, i.e. Painting & lettering with ordinary paint colour as per instruction of engineer in charge.	As per Specification Booklet
43	Providing Crash Barrier including ISMB 15x75x5 mm Size 2.0 meter C/C in Length and W Shape GI 3 mm plate in Single Row including providing Foundation block of Size 0.45 x 0.45 x 0.06 in 1:2:4 for CC Work etc... as per detailed drawing providing and fixing with nuts and bolts welding as required and one coat of redoxide and two coat of approved oil Paint & sticking reflective sticker Red/ Yellow radium etc. complete.	As per Specification Booklet

Sr.No.of the Item in schedule-"B"	Brief Description of Item	Page No.
44	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. Warranty for the Retro reflectivity should be two years.	As per Specification Booklet
45	Cat Eye / Road Stud / RPM: Supplying Raised Pavement Markersmade of polycarbonate and ABS moulded body and reflective panelswith Micro prismatic lens (No Glass bead lens) capable of providingtotal internal reflection of the light entering the lens face and shallsupport a load of 13635 kgs. tested in accordance to ASTM D 4280Type H and complying to Specifications of Category A of MORTHCircular No RW/NH/33023/10-97 D DO III Dt 11.06. 1997. The height,width and length shall not exceed 20 mm, 130 mm and 130 mm andwith minimum reflective area of 13 Sqcm on each side and the slopeto the base shall be 35 +/- 5 degree. The body of the marker shouldhaving finger grip for easy and accurate placement and applicationwith epoxy / bituminous Adhesive as recommended by themanufacturer of the marker. The color of the marker should be asper the IRC 35-2015 and as directed by Engineer-in-charge.	As per Specification Booklet

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