

NAME OF WORK
Construction of Minor Bridge at Pada Approach Road (VR) at ch 4/00 to 4/200, Ta:Mangrol, Dist:Surat
SPECIFICATIONS

Name of Work	Construction of Minor Bridge at Pada Approach Road (VR) at ch 4/00 to 4/200,Ta:Mangrol,Dist:Surat	
INDEX SPECIFICATIONS		
Item no	Item of work	Specification Booklet Item no & Page no
1	2	3
1	Proving flood guage makrs on substructure as per design including painting complete	As per Separate sheet Attached
2	Providing masonry steps with cement pointing on approaches as directed	As per Separate sheet Attached
3	Providing and laying filter media 600 mm. thick as directed at the back of abutments returns and wing walls as per detailed specifications	As per Separate sheet Attached
4	Providing and filling sand behind abutments and between returns in layers as directed	As per Separate sheet Attached
5	Excavation for foundation in hard murrum and boulders and very stiff or sticky clays and other similar strata including sorting and strutting and dewatering as necessary and disposing of excavated stuff as directed.	As per Separate sheet Attached
6	Excavation in large boulders and soft rock by welding including sorting strutting and dewatering as necessary and disposing off the excavated stuff as directed.	As per Separate sheet Attached
7	Excavation in hard rock by dry wet blasting and chiselling including dewatering preparing foundation base by proper benching and stepping and disposing of the excavated stuff as directed. (B) Blasting prohibited	As per Separate sheet Attached
8	Providing & filling in foundation with ordinary cement concrete M 15 mix and providing necessary vertical pin headers including formwork vibrating ramming & curing complete.	As per Separate sheet Attached
9	Diversion of water course/providing cofferdam and bund or island as may be necessary for foundation the same for the period as may be necessary (B) Diversion by cofferdam/sland	As per Separate sheet Attached
10	Providing and fixing steel dowel bar of Fe 500D grade 32 mm dia for anchoring by drilling holes in foundation strata including, necessary bending hooking of dowel bars and grouting the holes complete as per detailed drawing and as directed	As per Separate sheet Attached
11	Providing & casting in situ Design mix concrete M 30 for R. C.C. footing for Pier, Abutment and Return Wall Footing Pad for including necessary shuttering laying vibrating ramming and curing complete.	As per Separate sheet Attached
12	Providing & filling trenches of excavation in rocky strata with NMC M15 .	As per Separate sheet Attached
13	Providing and placing in position Reinforcement Grade Fe-550D for (A) R. C.C. footing for Pier, Abutment & Return Wall, (B) Abutment cap and dirt wall, (C) Pier cap ,R.C.C Pier, Abutment, Return Wall, (D) Side Wall, (E) Solid slab type of superstructure, (F) R.C.C. Approach slab, (G) R.C.C Crash barrier, Wearing coat including curing bending hooking and tying complete as per detailed drawing.	As per Separate sheet Attached
14	Providing and laying weep hole in abutment and return by using A.C. pipes of 100 mm. Diameter including laying in proper grade and joining etc. comp. As per detailed specifications.	As per Separate sheet Attached
15	Providing and casting in situ controlled cement M-30 for R.C.C. work in Abutment, Piers & Return wall as per drawing including centering shuttering scaffolding where necessary laying vibrating curing and finishing complete.	As per Separate sheet Attached
	(A) Height from 0.0 M to 5.0 M	As per Separate sheet Attached
	(B) Height from 5.0 M to 10.0 M	As per Separate sheet Attached
16	Providing and casting in situ controlled cement concrete M 30 Mix for R.C.C. works in pier cap abutment cap and dirt wall including controlled cement concrete M 35 bed rock or pedestals of required drawings, centering shuttering, scaffolding wherever necessary laying vibrating curing and finishing complete.	As per Separate sheet Attached
17	Providing & Fixing in position tar paper bearing as per detailed design and drawings and specification etc. complete	As per Separate sheet Attached
18	Providing and fixing in position FE 550D steel dowel bars in pier caps or abutments caps for anchorage in fixed end as per detailed drawing including cutting bending and welding complete.	As per Separate sheet Attached
19	Providing and fixing in position FE 550 D steel dowel bars in pier caps For anchorage in free end as per detailed drawing including cutting bending and welding .	As per Separate sheet Attached
20	Providing and casting in situ controlled cement concrete M-30 for R.C.C. work in superstructure including centering, ramming vibrating curing and finishing complete.(A) Solid slab type of superstructure	As per Separate sheet Attached
21	Providing and casting in situ controlled cement concrete M 40 for average 100 mm. thick wearing coat laid as directed including tamping vibrating finishing curing and filling in joints with bitumen complete.	As per Separate sheet Attached

Item no	Item of work	Specification Booklet Item no & Page no
1	2	3
22	(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 FE550D (HYSD) reinforcement 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 4 June 1994 as per dimensions in the approved drawing and at locations directed by the Engineer, all as specified)	As per Separate sheet Attached
23	Providing PVC. 100 mm. diameter water spouts including necessary iron gratings as per drawings.	As per Separate sheet Attached
24	Providing and fixing marble slab including engraving and painting complete. (A) size 75 cm x 60 cm x 4 cm	As per Separate sheet Attached
25	Providing and casting in situ controlled cement concrete M 30 for approach slab including form work curing and finishing complete.	As per Separate sheet Attached
26	Providing Pre-moulded asphalt filler joints as per drawings.(A) 12mm	As per Separate sheet Attached
27	Finishing wall with weather proof exterior emulsion paint on wall surface (two coats) to give an required shape even shade after thoroughly brushing the surface to remove all dirt, and remains of loose powdered materials.etc complete	As per Separate sheet Attached
28	Dismantling the existing structure including removing and stacking the dismantled materials as and where directed. (A) R.C.C. work	As per Separate sheet Attached
29	Providing fusion bonded Epoxy coating not less than 175 micron thickness and up to 300 micron to reinforcement bars as per IS13620-1993/ASTM-775 M including testing of coating at plant and all taxes (A) 10mm to 16mm dia bar	As per Separate sheet Attached
30	Providing fusion bonded Epoxy coating not less than 175 micron thickness and up to 300 micron to reinforcement bars as per IS13620-1993/ASTM-775 M including testing of coating at plant and all taxes (B) 20mm to 32 mm dia bar	As per Separate sheet Attached
31	Earth work for embankment in cluding breaking clods dressing With all lead and lift and including watering, rolling, and consolidation of subgrade in layers at O.MC. To required dry density including filling the depressing which occur during the proces using vibrating roller 8.T. to 10 T (A) From borrow area within any km.	As per Separate sheet Attached
32	Clearing and grubbing road land including uprooting trunk vegetation, grass bushes, shrubs, saplings and tree girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable materials to be used or auctioned up to a lead of 1000 meters including removal and disposal of top organic soil not exceeding 150 mm in thickness. (C) by mechanical means in area of light jungle	As per Separate sheet Attached
33	Supplying Stacking & Spreding Hard Murrum 100 mm below sub base and 100 mm for Side Shoulder of work as per specification and Borrow material with Min CBR of 18% laid and compacted over. Compacted of native soil of min. CBR of 1.8%, (including spreding,watering and consolidation) With Vibatory roller excceding 80KN and not excceding	As per Separate sheet Attached
34	Construction of granular sub-base (GSB-V) 150 mm thick layer by providing machine crushed B.T. material satisfying MORT&H specification (Fifth revision) of Grading V including spreading in uniform layer with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC and compacting with vibratory roller to achieve the desired density etc. complete	As per Separate sheet Attached
35	Providing and laying wet mix macadam (WMM) base course 250 mm thick in two layers as per MORTH specification using machine crushed B.T. chips as per required gradation, mixing with required optimum quantity of water, conveying the mix to site of work, spreading in to grade and camber with paver/mechanical means and consolidation each layer with vibratory roller to aschieve the desired density including cost of material labour plant and equipment etc. complete.	As per Separate sheet Attached
36	Providing and Laying priming coat with emulsion SS-1 grade and spraying emulsion with spray set fitted on mechanical bouzer using emulsion at the rate of 7.50 kg/10 smt on WMM surface including cleaning the surface etc. complete	As per Separate sheet Attached
37	Providing and laying bituminous base course 37.5 mm thick compacted with tack coat of Emulsion grade RS1 at the rate of 2.5 Kg./10Sqmt. and using B.T. stone aggregates of required gradation and asphalt (VG-30) grade for mixing @ 1.99 % by weight of total mix including heating the aggregate and asphalt by drum mix plant and spreading the same by paver finisher and consolidation with vibratory roller including providing all materials, equipments, tools and plants, oil, kerosene, fire wood, labour charges etc. complete	As per Separate sheet Attached

Item no	Item of work	Specification Booklet Item no & Page no
1	2	3
38	Providing and laying 50.00 mm thick compacted B.M. in Single Layer with B.T. aggregate as per MORT&H specification using Emulsion grade RS1 for tack coat at 2.5 Kg./10Sq.mt. with mechanical sprayer and bitumen grade VG-30 for mixing at the rate 34.0 Kg/M.T. i.e. 3.4% of total mix including heating the aggregate and asphalt by Drum mix plant and spreading the same by paver finisher and consolidation with vibratory roller including providing all materials, equipments, tools and plants, oil, kerosene, fire wood, labour charges etc. complete	As per Separate sheet Attached
39	Providing and laying 25 mm thick compacted Semi Dense Bituminous Concrete using stone chips as per MORT&H gradation & 60/70(VG-30) grade asphalt for mixing @ 5.0% by weight of total mix for binder including heating the aggregate and asphalt by Drum Mix Plant	As per Separate sheet Attached
40	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 @250 gm per sqm area, thickness of 2.5 mm in 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 pattaline/center line/cut patta. The white colour marking should provide luminance coefficient on cement road shall be min 130 mcd/m ² /lux and Asphalt road shall be min 100 mcd/m ² /lux during the service life during the day time. The marking should meet the performance criteria for night time reflectivity and skid resistance as mentioned in section -15 of IRC 35-2015, warranty for retro reflectivity shall be two years.	As per Separate sheet Attached
41	Cat Eye / Road Stud / RPM: Supplying Raised Pavement Markers made of polycarbonate and ABS moulded body and reflective panels with Micro prismatic lens (No Glass bead lens) capable of providing total internal reflection of the light entering the lens face and shall support a load of 13635 kgs. tested in accordance to ASTM D 4280 Type H and complying to Specifications of Category A of MORTH Circular 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 and with minimum reflective area of 13 Sqcm on each side and the slope to the base shall be 35 +/- 5 degree. The body of the marker should having finger grip for easy and accurate placement and application with epoxy / bituminous Adhesive as recommended by the manufacturer of the marker. The color of the marker should be as per the IRC 35-2015 and as directed by Engineer-in-charge.	As per Separate sheet Attached
42	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 75x75x6mm 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
43	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 .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 estquality epoxy coatings in black andwhite 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) ngeiner Grade(VR)	As per Separate sheet Attached

Item no	Item of work	Specification Booklet Item no & Page no
1	2	3
44	Informatory Signs :-Providing and fixing sing boards made out of 2mm aluminium sheet; size 80 x 60cms. rectangle as per the design of IRC-67-1977 pre treated with phospheting process & acid teching; coated with one coat of epoxyprimer and two coats of best qualityepoxy paint; reflectorised with retro reflective sheeting as per latest M.O.S.T. Specifications; 3.1m long stand postand frame fabricated from suitable sizeiron angle of 35 x 35 x 3mm75x75x6mm as required; painted with best qualityepoxy coatings in black and whitebends. the details of symbol for eachboard shall details of symbol for eachboard shall be as per the instruction ofengineer in charge. The fixing at site shall be in 1:2:4 CC block of size 45 x45 x 60cms. for each leg. including excavation curing tec. complete under the supervision of engineer in charge.(A) Engineer Grade(VR)...	As per Separate sheet Attached
45	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 phospheting 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 & 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)	As per Separate sheet Attached
46	Providing and fixing hectometer as per I.R.C. type design including painting lettering etc. complete fixing in C.C. 1:5:10.	As per Separate sheet Attached
47	Providing and fixing guard stone as per I.R.C. type design including white washing etc. complete fixing in C.C. 1:5:10	As per Separate sheet Attached
48	Excavation for foundation up to 1.50 mt depth including sorting out and stacking of useful material and disposing of the excavated stuff up to 50 mt. lead (B) Dense or Hard soil	As per Separate sheet Attached
49	Providing & laying rubble for Gabbion (each stone weight not less than 40 Kg.) including packing & filling in the interstices with quarry spalls.	As per Separate sheet Attached
50	Providing & Suppling of Mechanically Woven, Double Twisted,Hexagonal wire mesh Zinc+ PVC Coated Gabion boxes; Mesh opening Type : 10 x 12; Wire dia: 2.7/3.7 mm; Selvedge wire dia: 3.4mm.	As per Separate sheet Attached
51	Providing, Supply and Installation of 200 GSM Non Woven Geotextile Needle Punched. Polypropylene Material Having Minimum Roll Size of 5 mtr x 100 mtr Including all Labours & etc. Complete.	As per Separate sheet Attached
52	Providing and laying rubble pitching of 22.50 cm. thick with filling the sand in the interstices & C.C. 1:3:6 panelling at 3.0 mt. C/C and 30 cms. x 30 cms. panel wall as per the detailed drawing with necessary excavation and providing water chute of C.C. 1:3:6 at 24.00 mt. C/C providing pointing on rubble pitching in CM 1 : 3 etc. complete.	As per Separate sheet Attached
53	Providing and erecting a 'W' type 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 verticle ost 150x75x5 mm speed 2 mt centre to centre, 1.8 mt height , 1.1 mt below ground /road level,all steel parts and fitments to be galvanised by hot dip process , all fittings to confirm to I.S 1367 and I.S 1364 , metal beam rail to be fixed on the verticle post with a spacer of channel section 150 x75x5 mm ,330 mm long complete as per clause 810	As per Separate sheet Attached
54	Providing Designing Supplying and Installation of Extruded Bi-Axial Polypropylene 30 kn GeoGrid Including all Labours & etc. Complete.	As per Separate sheet Attached
55	Providing Designing Supplying and Installation of Extruded Bi-Axial Polypropylene 40 kn GeoGrid Including all Labours & etc. Complete.	As per Separate sheet Attached
56	Supplying and fixing reinforced concrete heavy duty non-pressure pipes with collars for culvert carrying heavy traffic as per IS: 458-1991 spcifications including setting the pipes in C:M 1:2 watering and laying (to leval or slopes) of class NP3 of following internal Diameters 1200 mm Dia.	As per Separate sheet Attached