

Name of work:-	Construction of Minor Bridge at Pada Approach Road (VR) at ch 4/00 to 4/200,Ta:Mangrol,Dist:Surat				
SCHEDULE -B					
Memorandum showing items of work to be carried out					
Item no	Description of Item (with brief specification and reference tobook of specifications)	Quantity	Unit	Rate In figure Rs. Ps.	Amount
1	3	4		6	7
1	Proving flood guage makrs on substructure as per deisgn including painting complete	14.00	Rmt	165.700	₹ 2,319.80
2	Poviding masonry steps with cement pointing on approaches as directed	54.00	Steps	235.520	₹ 12,718.08
3	Providing and laying filter media 600 mm. thick as directed at the back of abutments returns and wing walls as per detailed specifications	328.00	Sq.m	1311.190	₹ 4,30,070.32
4	Providing and filling sand behind abutments and between returns in layers as directed	895.00	Cu.m	562.080	₹ 5,03,061.60
5	Excavation for foundaion in hard murrum and boulders and very stiff or sticky clays and oher similar strata including sorting and strutting and dewatering as necessary and diposing of excavated stuff as directed.	26.00	Cu.m	628.030	₹ 16,328.78
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.	1435.00	Cu.m	736.610	₹ 10,57,035.35
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	309.00	Cu.m	1722.080	₹ 5,32,122.72
8	Providing & filling in foundation with ordinary cement concrete M 15 mix and providing necessary vertical pin headers including formwork vibrating ramming & curing complete.	225.00	Cu.m	3695.350	₹ 8,31,453.75
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	6.00	Each	40400.000	₹ 2,42,400.00
10	Providing and fixing steel dowel bar of Fe 550D 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 dawing and as directed	404.00	Rmt	600.840	₹ 2,42,739.36
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.	627.00	Cu.m	4821.690	₹ 30,23,199.63
12	Providing & filling trenches of excavation in rocky strata with NMC M15 .	499.00	Cu.m	3637.410	₹ 18,15,067.59
13	Providing and placing in position Reinforcement GradeFe-550D for (A) R. C.C. footing for Pier, Abutment & Rreturn 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 Crasg barrier, Wearing coat including curing bending hooking and tying compete as per detailed drawing.	210.22	M.T	73708.016	₹ 1,54,94,899.18
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.	328.00	Each	89.210	₹ 29,260.88

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<b>1</b>	<b>3</b>	<b>4</b>		<b>6</b>	<b>7</b>
<b>15</b>	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.				
	(A) Height from 0.0 M to 5.0 M	<b>370.73</b>	<b>Cu.m</b>	<b>5428.920</b>	<b>₹ 20,12,636.37</b>
	(B) Height from 5.0 M to 10.0 M	<b>134.54</b>	<b>Cu.m</b>	<b>5751.500</b>	<b>₹ 7,73,818.32</b>
<b>16</b>	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.	<b>120.00</b>	<b>Cu.m</b>	<b>5508.700</b>	<b>₹ 6,61,044.00</b>
<b>17</b>	Providing & Fixing in position tar paper bearing as per detailed design and drawings and specification etc. complete	<b>2.00</b>	<b>Job</b>	<b>10100.000</b>	<b>₹ 20,200.00</b>
<b>18</b>	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.	<b>25.00</b>	<b>Each</b>	<b>455.630</b>	<b>₹ 11,390.75</b>
<b>19</b>	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 .	<b>25.00</b>	<b>Each</b>	<b>533.600</b>	<b>₹ 13,340.00</b>
<b>20</b>	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	<b>538.00</b>	<b>cu.m</b>	<b>5559.280</b>	<b>₹ 29,90,892.64</b>
<b>21</b>	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.	<b>53.00</b>	<b>Cu.m</b>	<b>5660.710</b>	<b>₹ 3,00,017.63</b>
<b>22</b>	(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)	<b>165.00</b>	<b>Rmt</b>	<b>1474.600</b>	<b>₹ 2,43,309.00</b>
<b>23</b>	Providing PVC. 100 mm. diameter water spouts including necessary iron gratings as per drawings.	<b>80.00</b>	<b>Each</b>	<b>159.370</b>	<b>₹ 12,749.60</b>
<b>24</b>	Providing and fixing marble slab including engraving and painting complete. (A) size 75 cm x 60 cm x 4 cm	<b>2.00</b>	<b>Each</b>	<b>1012.650</b>	<b>₹ 2,025.30</b>
<b>25</b>	Providing and casting in situ controlled cement concrete M 30 for approach slab including form work curing and finishing complete.	<b>23.00</b>	<b>Cu.m</b>	<b>5360.280</b>	<b>₹ 1,23,286.44</b>
<b>26</b>	Providing Pre-moulded asphalt filler joints as per drawings.(A) 12mm	<b>53.18</b>	<b>Sq.m</b>	<b>703.530</b>	<b>₹ 37,413.73</b>

Item no	Description of Item (with brief specification and reference to book of specifications)	Quantity	Unit	Rate In figure Rs. Ps.	Amount
1	3	4		6	7
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	247.00	Sq.m	120.270	₹ 29,706.69
28	Dismantling the existing structure including removing and stacking the dismantled materials as and where directed. (A) R.C.C. work	907.50	Cu.m	909.910	₹ 8,25,743.33
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	85.00	M.T	10162.620	₹ 8,63,822.70
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	127.00	M.T	7296.240	₹ 9,26,622.48
31	Earth work for embankment including 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 process using vibrating roller 8.T. to 10 T (A) From borrow area within any km.	5466.60	Cu.m	177.920	₹ 9,72,617.48
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	1.10	Hectre	28455.100	₹ 31,300.61
33	Supplying Stacking & Spreading 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 spreading, watering and consolidation) With Vibratory roller exceeding 80KN and not exceeding 120KN etc. complete.	143.00	Cu.m	439.350	₹ 62,827.05
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.	401.00	Cu.m	1083.730	₹ 4,34,575.73
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 achieve the desired density including cost of material labour plant and equipment etc. complete.	623.00	Cu.m	1001.920	₹ 6,24,196.16
36	Providing and Laying priming coat with emulsion SS-1 grade and spraying emulsion with spray set fitted on mechanical blower using emulsion at the rate of 7.50 kg/10 sqm on WMM surface including cleaning the surface etc. complete	2347.00	Sqm	97.290	₹ 2,28,339.63

Item no	Description of Item (with brief specification and reference to book of specifications)	Quantity	Unit	Rate In figure Rs. Ps.	Amount
1	3	4		6	7
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	171.00	M.T	2686.740	₹ 4,59,432.54
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	249.00	M.T	3722.530	₹ 9,26,909.97
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	53.00	M.T	4655.590	₹ 2,46,746.27
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 <sup>2</sup> /lux and Asphalt road shall be min 100 mcd/m <sup>2</sup> /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.	59.00	Sqm	367.730	₹ 21,696.07
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 & 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 have 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.	59.00	No.	217.410	₹ 12,827.19

Item no	Description of Item (with brief specification and reference to book of specifications)	Quantity	Unit	Rate In figure Rs. Ps.	Amount
1	3	4		6	7
42	Direction sign (Junction board):-Providing and fixing sing boards made out of 2mm aluminium sheet; size 244 x 122cms. rectangle as as per the design of IRC-67-1977 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 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)...	3.00	No.	14831.710	₹ 44,495.13
43	Cautionary Warning Sign :-Providing and fixing sing 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 phospheting process & acid etching; coated with one coat of epoxy primer and two coats of best quality epoxy paint reflectorised with retro reflectivesheeting as per latest .O.S.T.Specifications; 3.1m long stand postand frame fabricated from suitable sizeiron 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 foreach board shall be as per theinstruction 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) ngineer Grade(VR)	12.00	No.	3808.660	₹ 45,703.92
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)...	3.00	NO	3856.900	₹ 11,570.70
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)...	5.00	No.	2423.740	₹ 12,118.70
46	Providing and fixing hectometer as per I.R.C. type design including painting lettering etc. complete fixing in C.C. 1:5:10.	4.00	NO	356.500	₹ 1,426.00
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	20.00	NO	350.810	₹ 7,016.20
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	587.00	Cum	255.570	₹ 1,50,019.59

Item no	Description of Item (with brief specification and reference to book of specifications)	Quantity	Unit	Rate In figure Rs. Ps.	Amount
1	3	4		6	7
49	Providing & laying rubble for Gabion (each stone weight not less than 40 Kg.) including packing & filling in the interstices with quarry spalls.	2100.00	Cu.m	1083.820	₹ 22,76,022.00
50	Providing & Supplying 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.	2100.00	Cu.m	1338.250	₹ 28,10,325.00
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.	840.00	Sq.m	45.450	₹ 38,178.00
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	943.00	Sqm	606.280	₹ 5,71,722.04
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	220.00	Rmt	3496.620	₹ 7,69,256.40
54	Providing Designing Supplying and Installation of Extruded Bi-Axial Polypropylene 30 kn GeoGrid Including all Labours & etc. Complete.	675.00	Sqm	111.100	₹ 74,992.50
55	Providing Designing Supplying and Installation of Extruded Bi-Axial Polypropylene 40 kn GeoGrid Including all Labours & etc. Complete.	756.00	Sqm	141.400	₹ 1,06,898.40
56	Supplying and fixing reinforced concrete heavy duty non-pressure pipes with collars for culvert 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 1200 mm Dia.	200.00	Rmt	5530.950	₹ 11,06,190.00
				<b>Total</b>	<b>₹ 4,61,28,099.30</b>

**Note :-**

(\* Please strike out whichever is not applicable.)

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.
5	All works shall be carried out as per latest MORTH Specification Booklet and other specification of Division as directed.
6	Testing of material shall be done as per statement attached with specification. The material should be tested in GERI or Private laboratory approved by Govt. of Gujarat. Bill for testing charges should be paid by Executive Engineer and 1% amount as per the schedule - B computed after deducting the cost of materials to be supplied by the Govt. and shall be recovered from the contractor's running bill as per Govt., R&B Department No. TNC-1085/(4)/C dtd 20-12-91.
7	An amount of Rs. 21,96,885.296 of estimated credit value of Dismantling of Existing Bridge & Diversion shall be recovered from the 1 <sup>st</sup> R.A. Bill of this work irrespective of the quantity actually received on site.