

Name of Work	Construction of Box Culvert at Vadpada To Haldhari road Ch 0/8 To 1/0 Ta:Umarpada 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 outer wall & returns 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 sand gravel, clay, soft, soils and murrum etc. including soring strutting and dewatering as necessary and disposing off the excavated stuff as directed (A) Depth upto 3.00 mt	As per Separate sheet Attached
6	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
7	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
8	Providing & casting in situ Design mix concrete M 30 for R. C.C. Bottom Slab, Return Wall Footing, Key etc. including necessary shuttering laying vibrating ramming and curing complete.	As per Separate sheet Attached
9	Providing and placing in position Reinforcement Grade Fe-550D for (A) R. C.C. footing for Bottom Slab, Footing Return Wall, Inner Wall and Box outer wall Box culvert (B) Top slab (C) RCC Crash barrier R.C.C. Approach slab, (D) Wearing coat including curing bending hooking and tying complete as per detailed drawing.	As per Separate sheet Attached
10	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
11	Providing and casting in situ controlled cement M-30 for R.C.C. work in Outer Wall, Inner Wall, 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	
	(B) Height from 5.0 M to 10.0 M	As per Separate sheet Attached
12	Providing and casting in situ controlled cement concrete M-30 for R.C.C. work in Top Slab including centering, ramming vibrating curing and finishing complete.	As per Separate sheet Attached

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13	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
14	(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
15	Providing PVC. 100 mm. diameter water spouts including necessary iron gratings as per drawings.	As per Separate sheet Attached
16	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
17	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
18	Providing and laying rubble for apron (each stone weight not less than 40 kg.) including packing and filling in the interstices with quarry spalls.	As per Separate sheet Attached
19	Providing Designing Supplying and Installation of Extruded Bi-Axial Polypropylene 40 kn GeoGrid Including all Labours & etc. Complete.	As per Separate sheet Attached
20	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
21	Providing fusion bonded Epoxy coating not less than 175 micron thickness and up to 300 micron to reinforcement bars as per IS-13620-1993/ASTM-775 M including testing of coating at plant and all taxes (A) 10mm to 16mm dia bar	As per Separate sheet Attached
22	Providing fusion bonded Epoxy coating not less than 175 micron thickness and up to 300 micron to reinforcement bars as per IS-13620-1993/ASTM-775 M including testing of coating at plant and all taxes (B) 20mm to 32 mm dia bar	As per Separate sheet Attached
23	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 proces using vibrating roller 8.T. to 10 T (A) From borrow area within any km.	As per Separate sheet Attached

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24	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
25	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.	As per Separate sheet Attached
26	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
27	Providing & laying spreading and compacting stone aggregate 53 mm to 22.4 mm size to W.B.M. 75 mm thick in Three layers including spreading in uniform thickness, hand packing, rolling with vibratory roller 8 to 10 tonnes to proper grade and camber, applying and brooming requisite type of screening/ binding/ filler materials to fill up the interstices of coarse aggregate, watering and compacting to the required density. Grading II using screening type A (13.2 mm stone aggregate)	As per Separate sheet Attached
28	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
29	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

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30	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
31	Providing and laying 25 mm thick compacted Semi Dense Bituminuous 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
32	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 exluding 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 liminance coefficent 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 rreflectivity 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
33	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 reflectionof 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 Ð 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 themarker 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 theIRC 35-2015 and as directed by Engineer-in-charge.	As per Separate sheet Attached

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34	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 ironangle 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
35	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) ngeineer Grade(VR)	As per Separate sheet Attached
36	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
37	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 &	As per Separate sheet Attached
38	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
39	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

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40	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
41	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
42	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
43	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
44	Providing Designing Supplying and Installation of Extruded Bi-Axial Polypropylene 30 kn GeoGrid Including all Labours & etc. Complete.	As per Separate sheet Attached
45	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 900 mm Dia.	As per Separate sheet Attached
46	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.	As per Separate sheet Attached