

BOQ BASED ON S.O.R. FOR BRIDGE WORK
ISSUED BY ENGINEER IN- CHIEF C.G.P.W.D. RAIPUR
INFORCE FROM 01.01.2015@90% and CGRRDA SSOR 22.02.2018
BOQ FOR CONSTRUCTION OF HIGH LEVEL BRIDGE ACROSS ON GORGUNDA TO TOYAPARA AT
RD 1000M BLOCK KONTA, DIST. SUKMA (C.G.)
5SPANS OF 20 M. =100 M.

S.N o.	Ref. From SOR	Description	Quantity	Unit	Rate	Amount
		FOUNDATION				
1		Excavation				
	2..1	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material including dewatering etc. complete.				
	I	Ordinary soil				
	(i)	Upto 3 m depth	3820.06	Cum	131.40	501955.00
		Dewatering				
		Add extra 20% in the rates of above items for dewatering (Assessment of dewatering shall be made as per site condition).				
	I	Ordinary soil				
	(i)	Upto 3 m depth	3820.06	Cum	26.28	100391.00
2	2.16	MS Liner for Piles				
		Providing steel liner 10 mm thick for curbs and 6mm thick for steining of wells including fabricating and setting out as per detailed drawing and specifications as per section 1200 and 1900.	24.48	MT	65286.00	1598201.00
3	2.17(iii)	Bored Cast in-situ Piles				
		Bored cast-in-situ M35 grade R.C.C. pile excluding reinforcement complete as per drawing and technical specifications and removal of excavated earth with all lifts and lead upto 1000 m as per section 1100 and 1700.	536.00	Rm	14123.70	7570303.00
4	2.21	Pile Load Test				
		Pile Load Test on single Vertical Pile in accordance with IS:2911(Part-IV) in static load method only	1250.00	ton	1350.00	1687500.00
5	2.6	M15 grade PCC below foundation				
	2.6 A (i)	Plain/Reinforced cement concrete in open foundation complete as per drawing and technical specifications as per section 1500, 1700 & 2100.	153.15	Cum	4151.70	635827.00
6	2.25	Exploratory boring				
		Taking trail boring 100mm dai. For detailed investigation with diamound drill double tube in all sorts of soil like sand, soft soil, ,moorum, gravels, boulders and soft rock including all materials such as casing pipes, accessories, grease and other such materials and or as required including conveying the loose sample and core sample serially numbered at the site of work and conveying the head quarters of concerned office as directed and submission of detailed bore log sheet as per I.R.C. 78-2014 and section 2400 including testing of sample as per specification.				
	(i)	Upto 1.0 m below bed level	6.00	Each	5355.90	32135.00
	(ii)	Beyond 1.0 m upto 5.0 depth	24.00	RM	1170.00	28080.00
	(iii)	Beyond 5.0 m	114.00	RM	1327.50	151335.00
7	2.22	Reinforced Cement Concrete in Pile Cap - M30				
	2.22 A (ii)	Cement concrete for reinforced concrete in pile cap complete as per drawing and Technical Specifications per clause 1100,1500 and 1700.	341.50	Cum	5191.20	1772774.00

8		HSD bars reinforcement in Foundation				
	2.24	Supplying, fitting and placing HSD (High Strength Deformed Steel) bar reinforcement in foundation complete as per drawing and technical specifications as per section 1600.	120.21	MT	61823.70	7432050.00
		SUBSTRUCTURE				
9		Reinforced Cement Concrete in substructure - M30				
	3.6 E (a)(iii)	Providing and laying Plain/Reinforced cement concrete in sub-structure complete as per drawing and technical specifications section 1500, 1700 and 2200. Height 5 to 10m	1145.55	Cum	5894.10	6751959.00
10		HSD bars reinforcements in substructure				
	3.7	Supplying, fitting and placing HSD (High Strength Deformed Steel) bars reinforcement in sub-structure complete as per drawing and technical specifications section 1600 and 2200.	137.47	MT	62101.80	8536852.00
11		Weep Holes				
	3.8	Providing weep holes in Brick masonry/ Plain/ Reinforced concrete abutment, wing wall/return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V : 20H towards drawing face. Complete as per drawing and Technical specifications section 2706 and 2200.	578.47	M	288.90	167121.00
12		Back Filling Behind abutment				
	3.9	Back filling behind abutment, wing wall and return wall complete as per drawing and Technical specification 710.1.4 of I.R.C. 78 and 2200.	230.39	Cum	814.50	187656.00
13		Elastomeric Bearing				
	3.14	Supplying, fitting and fixing in position true to line and level elastomeric bearing conforming to IRC: 83 (Part-II) section IX and clause 2005 of MORT&H specifications complete including all accessories as per drawing and Technical Specifications section 2000 and 2200.	234000	Cucm	0.90	210600.00
		SUPERSTRUCTURE				
14		Reinforced Cement Concrete in Deck slab and Diaphragms, M30				
	4.1 B II (a) (ii)	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification sections 1500, 1600 and 1700. Height 5 to 10m	236.36	Cum	6798.60	1606939.00
		Reinforced Cement Concrete in RCC Girder, M30				
	4.1 B II (a) (ii)	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification sections 1500, 1600 and 1700. Height 5 to 10m	208.65	Cum	6798.60	1418556.00
15		HSD bars reinforcement in Superstructure				
	4.2	Supplying, fitting and placing HSD (High Strength Deformed Steel) bar reinforcement in super-structure complete as per drawing and technical specifications as per Section 1600.	71.20	MT	63090.90	4492247.00
16		RCC Crash Barrier M-40				
	4.1 D I (a) (ii)	Furnishing and Placing Reinforced/Prestressed cement concrete in super-structure as per drawing and Technical Specification sections 1500, 1600 and 1700. Height 5 to 10m	68.53	Cum	6786.90	465114.00
	4.2	HSD bars reinforcement for RCC Crash Barrier Supplying, fitting and placing HSD (High Strength Deformed Steel) bar reinforcement in super-structure complete as per drawing and technical specifications.	21.24	MT	63090.90	1340345.00
17		Cement Concrete Wearing Course				
	4.4	Providing and laying Cement concrete wearing coat M-30 grade including reinforcement of 9mm diameter @ 150mm c/c spacing in both ways for each 75mm thickness of concrete complete as per drawing and Technical Specifications as per relevant clause of section 2700.	60.23	Cum	10662.30	642217.00
18		Drainage Spout				
	4.9	Supplying and installing drainage spouts complete as per drawing and Technical specification clause 2705.	70.00	Nos	1806.30	126441.00

19		M15 grade PCC below Approach Slab				
	4.10	PCC M15 Grade leveling course below approach slab complete as per drawing and Technical specification and as per relevant section 2700	8.02	Cum	3993.30	35221.00
		RCC in Approach Slab, including reinf				
	4.11	Providing and laying M-30 grade Reinforced cement concrete approach slab including reinforcement and formwork complete as per drawing and Technical specification and as per relevant sections 1500, 1600, 1700 and 2704	17.64	Cum	8520.30	150298.00
20		Strip seal type expansion joint				
	4.18	Strip Seal Expansion Joint (Providing and laying of a strip seal expansion joint catering to maximum horizontal movement upto 70 mm, complete as per approved drawings and standard specifications to be installed by the manufacturer/supplier or their authorized representative ensuring compliance to the manufacturer's instructions for installation.)	50.40	m	10011.60	504585.00
21		Testing of span of bridge				
	4.24	Testing of span of bridge for deflection due to live load with platform for loading arrangements, apparatus for measurement etc. complete as per drawing and specifications (As per IRC : SP-51)	77.00	Ton	765.00	58905.00
22		Cement Concrete Blocks Of Size 0.3x0.3x0.2 m Cast In Cement Concrete Of Grade M15				
	5.4 B	Providing and lying Pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment and cement grouting with C:M-1:4 in pitching gap between stone/block complete as per drawing and technical specification as per section 2504.	52.02	Cum	4234.50	220287.00
23		Filter Media				
	3.10	Providing and laying of Filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of MORT&H specifications to a thickness of not less than 600 mm with smaller size towards the soil and bigger size towards the wall and provided over the entire surface behind abutment, wing wall and return wall to the full height compacted to a firm condition complete as per drawing and technical specifications 710.1.4 of I.R.C. 78 and 2200.	174.06	Cum	1733.40	301716.00
		Providing and laying Filter material				
	5.5	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification including trimming of slopes to proper profile and preparation of bed as per section 2504.	52.02	Cum	1871.10	97338.00
24		Embankment Earthwork				
	3.4(i)-Road	Construction of embankment with approved material obtained from borrow pits, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 (Beyond 250m) with all leads as per Technical Specification Clause 301.5 (Having CBR more than 5)	399.18	Cum	238.00	95005.00
25		Traffic Sign Boards				

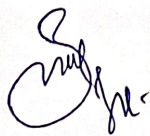
9.2 A Road	Semi-Reflective Traffic signs upto 0.90 sqm Direction and place identification signs up to 0.9 sqm size board Providing and erecting direction and place identifications of semi reflective sign boards as per IRC:67 made of 2 mm thick M.S. Sheet duly stove enameled paint in white colour in front and grey colour on back with red reflective border of 70 mm width and required message, letters, figures with reflective engineering grade tape as per MORD specifications of required shade and colour. Supported and welded on 47 mm x 47mm of 12 SWG Square tube of 3050 mm height duly strengthened by 25 mm x 5 mm M/s flat iron on edges on back firmly fixed to the ground by means of properly designed foundations with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	2.00	Sqm	6621.00	13242.00
9.2 B Road	Semi-Reflective Traffic signs more than 0.90 sqm sign board Providing and erecting direction and place identification of semi reflective sign boards as per IRC-67 made of 2 mm thick M.S. Sheet duly stove enameled paint white colour in front and grey colour on back with reflective border of 70 mm width and required message, letters, figures with reflective tape of engineering grade as per MORD specifications of required shade and colour. Supported and welded on two nos. 47 mm x 47 mm of 12 SWG square tube of 3050 mm height duly strengthened by 25 mm x 5 mm MS flat iron on edges on back firmly fixed to the ground by means of properly designed foundations with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	2	Sqm	6534.00	13068.00
	PMGSY Information Board				
26	9.14 B Road Providing and fixing of typical PMGSY informatory sign board with Logo as per MORD specifications and drawing. Three MS Plates of 1.6 mm thick, top and middle plate duly welded with MS flat iron 25mm x 5m size on back on edges. The lower plate will be welded with MS angle iron frame of 25mm x 25mm x 5mm. The angle iron frame of the lower most plate and flat iron frame of middle plate will be welded to 2 nos. 75mm x 75 mm of 12 SWG sheet tubes posts duly embedded in cement concrete M-15 grade blocks of 450mm x 450mm x 600mm, 600mm below ground level. The top most diamond plate will be welded to middle plate by 47mm x 47mm of 12 SWG steel plate tube. All M.S. will be stove enameled on both sides. Lettering and printing arrows, border etc. will be painted 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 paint as per drawing Clause 1701 and Annexure 1700.	1	Each	19249.00	19249.00
27	PMGSY Citizen Information Board				
	9.15 A Road Providing and fixing of typical " PMGSY Citizen Information Board" with Logo as per MoRD specifications & drawings, made of 75 mm square or 75 mm dia circular steel tube of 12 SWG 3.2 m height and cross member 2 nos 1m long, fixed with angle iron 50x50x5 mm MS angle on the back.	1	Each	19621.00	19621.00
28	Marble Plate				
	4.22 Providing and Fixing of Av. 20mm thick marble plate i/c cutting and polishing and inscribed details as per approved drawing i/c engraving the matter as desired.	2	EACH	4500.00	9000.00
29	Painting on Concrete Surfaces				
	9.5 ROAD Painting two coats including prime coat with epoxy paint of approved brand on concrete/steel surfaces after through cleaning of surface to give an even shade as per drawing and Technical Specification Clause 1701	3901.24	Sqm	147.00	573483.00
30	Painting on Concrete Surfaces of R.C.C. Railing				

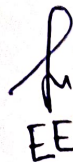
	4.21	Painting on concrete surface of R.C.C. Railing (Providing and applying 2 coats of water based cement paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence and applying paint @ of 1 litre for 2 Sq.m)	553.81	Sqm	135.90	75263.00
		APPROCH				
31	3.5 (i)	Excavation				
		Excavation in GORGUNDA				
		Excavation for roadway in soil for carrying of cut earth to embankment site with a lift upto 1.5 m and lead upto 50 m as per Technical Specification Clause 302.3	603	Cum	91	54873.00
		Excavation in TOYAPARA				
		Excavation for roadway in soil for carrying of cut earth to embankment site with a lift upto 1.5 m and lead upto 50 m as per Technical Specification Clause 302.3	302	Cum	91	27482.00
32		Construction of embankment				
	3.4 (i)	Construction of embankment with approved material obtained from borrow pits, transported to site, spreading, grading to required slopes and compacting to meet requirement of Tables 300.1 & 300.2 with a lead up to 250 m as per technical specifications clause 301.5	4726	Cum	238	1124788.00
33		Shoulders				
	3.12 (b)	Construction of subgrade and earthen shoulders with approved material (Granular material having CBR not less than 10) obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table 300.2 as per Technical Specification Clause 303.1.(To be used for side shoulder WBM)	134	Cum	280	37520.00
34		Construction of granular sub-base				
	4.1 (a)	Construction of granular sub-base by providing well graded material having CBR 20 or more, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory rollers of 80 to 100KN static weight to achieve the desired density, complete as per Technical Specification Clause 401. For Grading mentioned in table 400.1 (Grading III)	184	Cum	910	167440.00
35		Wet Mix Macadam				
	4.8	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the material with water at OMC in mechanical mixer (Pug Mill), carriage of mixed material by tipper to site, laying in uniform layers in sub-base/base course on a well prepared sub-base and compacting with smooth wheel roller of 80 to 100kN weight to achieve the desired density including lighting, barricading and maintenance of diversion, etc as per Tables 400.11 & 400.12 and Technical Specification Clause 406.	138	Cum	2069.00	285522.00
36		Prime Coat				
	5.1	Providing and applying primer coat with bitumen emulsion (SS-1) on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.70-1.0 kg/sqm using mechanical means as per Technical Specification Clause 502	919	Sqm	60.00	55140.00

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37		Tack Coat				
	5.2 (ii)	Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared dry and hungry bituminous surface cleaned with Hydraulic broom as per Technical Specification Clause 503	1838	Sqm	18.00	33084.00
38		Bituminous Macadam				
	5.6	Providing and laying bituminous macadam with hot mix plant using crushed aggregates of grading as per Table 500.4 premixed with bituminous binder, transported to site laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled to achieve the desired compaction as per Technical Specification Clause 504. Bitumen(S-65) VG-30	46	Cum	8397.00	386262.00
39		Open - Graded Premix Surfacing				
	5.3(II)	Open - Graded Premix Surfacing (Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates either using penetration grade bitumen or cut-back or emulsion to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable plant, laying and rolling with a smooth wheeled roller 8-10 tonne capacity, finished to required level and grades.)	919	Sqm	175.00	160825.00
40		Seal Coat				
	5.5B (II)	Seal Coat (Providing and laying seal coat sealing the voids in a bituminous surface laid to the specified levels, grade and cross fall using Type A and B seal coats)	919	Sqm	60.00	55140.00
		Protection work				
		Excavation				
41	7.1	Excavation for Structure as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material.				
	I	Ordinary soil				
	(i)	Upto 3 m depth	131	Cum	354.00	46374.00
42	7.18 (I)	M15				
		Plain/reinforced cement concrete in substructure complete as per drawings and technical specification Clauses 802, 804, 805, 806, 807, 1202 and 1204 For height upto 5 m P.C.C grade M 15 (Nominal mix 1:2.5:5)	68	Cum	5387.00	366316.00
43		Pitching on slopes				
	10.5 (II)	Providing and laying pitching on slopes laid over prepared filter media as per drawing and technical specifications Clause 1302. Cement concrete blocks of size as per Table 1300.2 cast in cement concrete of grade M 15.	179	Cum	6098.00	1091542.00
44		Filter Media				
	10.6	Providing and laying filter material underneath pitching in slopes complete as per drawing and technical specifications Clause 1302	90	Cum	2324.00	209160.00

Diversion Road Qty Summary					
45		Clearing and grubbing			
	2.3A	Clearing and grubbing road land including uprooting wild vegetation, grass, bushes, shrubs, saplings and trees of girth upto 300 mm, removal of stumps of such trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, upto a lead of 1000 m including removal and disposal of top organic soil not exceeding 150 mm in thickness as per Technical Specification Clause 201. (A) In area of non-thorny jungle	2100	Sqm	7.00
					14700.00
46		(For Profile Correction) Construction of embankment			
	3.4 (i)	(For Profile Correction) Construction of embankment with approved material obtained from borrow pits, transporting to site, spreading, grading to required slope and compacting to meet requirement of Tables 300.1 and 300.2 (Beyond 250m) with all leads as per Technical Specification Clause 301.5 (Having CBR more than 5)	315	Cum	238.00
					74970.00
47		Construction of subgrade			
	3.12 (a)	Construction of subgrade and earthen shoulders with approved material (Granular material having CBR not less than 7) obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table 300.2 as per Technical Specification Clause 303.1. For Item No. 3.12(a) & (b)	394	Cum	252.00
					99288.00
48		Construction of granular sub-base			
	4.1 (a)	Construction of granular sub-base by providing well graded material having CBR 20 or more, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory rollers of 80 to 100KN static weight to achieve the desired density, complete as per Technical Specification Clause 401.	166	Cum	910.00
					151060.00
49		Crushed stone aggregates			
	4.7 (2)	Providing, laying, spreading and compacting mechanically crushed stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with three wheel 80-100 kN static roller in stages to proper grade and camber, applying and brooming, crushable screening to fill-up the interstices of coarse aggregate, watering and compacting to the required density Grading 2 as per Technical Specification Clause 405.	83	Cum	1981.00
					164423.00
50		Semi-Reflective Traffic signs			
	9.2 (B)	Semi-Reflective Traffic signs more than 0.90 sqm sign board. Providing and erecting direction and place identification of semi reflective sign boards as per IRC-67 made of 2 mm thick M.S. Sheet duly stove enameled paint white colour in front and grey colour on back with reflective border of 70 mm width and required message, letters, figures with reflective tape of engineering grade as per MORD specifications of required shade and colour. Supported and welded on two nos. 47 mm x 47 mm of 12 SWG square tube of 3050 mm height duly strengthened by 25 mm x 5 mm MS flat iron on edges on back firmly fixed to the ground by means of properly designed foundations with M-15 grade cement concrete 450 mm x 450 mm x 600 mm, 600 mm below ground level as per approved drawing and Technical Specification Clause 1701	2	Sqm	6534.00
					13068.00





51	7.1 (I) (i)	Excavation for Structure of 600mm pipe				
		Excavation for Structure of 600mm pipes as per drawing and technical specifications Clause 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable material.	38	Cum	354.00	13452.00
52		Cement concrete pipe NP3				
	7.6 (A)	Providing and laying reinforced cement concrete pipe NP3 for Culverts/ Burried conduits on first class bedding of granular material including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets as per Clause 1106.	30	Rm	4099.00	122970.00
53		Filling in Foundation Trenches				
	7.8 (I)	Providing and laying reinforced cement concrete pipe NP3 for Culverts/ Burried conduits on first class bedding of granular material including fixing collar with cement mortar 1:2 but	9	Cum	1275.00	11475.00
54		Backfilling behind abutment				
	7.23 (i)	Backfilling behind abutment, wing wall and return wall complete as per drawings & technical specification Clause 1204.3.8. Granular Material	11	Cum	1025.00	11275.00
		TOTAL			54421028.00	
		GST 18% Amount			9795785.04	
		G. Total Cost			64216813.04	
		Say Rs (In Lakhs)			642.17	

Sub-Engineer
PIU, CGRRDA- Sukma

Asst. Engineer
PIU, CGRRDA- Sukma

Executive Engineer
PIU, CGRRDA- Sukma