

Item Rate BoQ

Tender Inviting Authority: Managing Director, WBHDCL

Name of Work: Construction of Road Over Bridge (ROB) including additional approach ramp towards STKK road, service roads, footpath, road signage, drainage, Shifting of Level Crossing etc. in lieu of Level crossing 12SPL/T at Khejuria near Adisaptagram between Railway Station Bandel and Adisaptagram on Howrah-Bandel main Broad Gauge rail line at chainage 630.6 km on on Grand Trunk Road in the District Hooghly in West Bengal.

Contract No: WBHDCL/MD/eNIT-12/2016-17/18.11.2016 (ref. 2nd call of NIT No. : WBHDCL/MD/eNIT-09/2016-17/05.10.2016)

Bidder Name :

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder Rs. P	TOTAL AMOUNT With Taxes	TOTAL AMOUNT In Words
1	SITE CLEARANCE AND DISMANTLING					
1.1	Clearing and Grubbing Road Land. Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, with all lead and lifts. Reference to MORT&H's specification clause 201 and as directed by the Engineer.					
1.11	In area of light jungle (By Mechanical Means)	3.000	Hectare		0.00	INR Zero Only

1.2	Cutting of Trees, including cutting of Trunks, Branches and Removal. Cutting of Trees, including Cutting of Trunks, Branches and removal of stumps & roots, numbering, arranging of logs as per girth diameter and all other associated activities required by the auction authority on behalf of WBHDCL and stacking of standard logs , numbering , stacking after sorting girth-wise etc including stacking of fire woods at stackyards arranged by the contractor at his own cost with all lifts and leads upto 10km and deployment of necessary watch & ward guard the stackyard till disposal of the logs and firewoods by the Employer as deem fit which may extent till the end of construction period and earth filling in the depression/pit. Reference to MORT&H's specification clause 201 and as directed by the Engineer.Cutting of trees and transportation shall be by manual/mechanical means without disruption of traffic .					
1.21	a) Girth from 300 mm to 600 mm	20.000	Each		0.00	INR Zero Only
1.22	b) Girth from 600 mm to 900 mm	32.000	Each		0.00	INR Zero Only
1.23	c) Girth from 900 mm to 1800 mm	65.000	Each		0.00	INR Zero Only
1.24	d) Girth above 1800 mm	26.000	Each		0.00	INR Zero Only
1.3	Dismantling of Structures. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and					

	stacking the serviceable material with all lifts and lead . Reference to MORT&H's specification clause 202 and as directed by the Engineer.					
1.31	a) Brick Masonry (in cement mortar)	682.000	Cum		0.00	INR Zero Only
1.32	b) Plain Cement Concrete (M15 & M20 by mechanical means)	170.000	Cum		0.00	INR Zero Only
1.33	c) Reinforced Cement Concrete / Pre-stressed Concrete (M20 and above by mechanical means)	19.000	Cum		0.00	INR Zero Only
1.4	Dismantling of Flexible Pavements. Dismantling of flexible pavements and disposal of dismantled materials with all lead and lifts, stacking serviceable and unserviceable materials separately. Reference to MORT&H's specification clause 202 and as directed by the Engineer.					
1.41	i) Bituminous course (by mechanical means)	1138.000	Cum		0.00	INR Zero Only
1.42	ii) Non Bituminous course (by mechanical means)	4336.000	Cum		0.00	INR Zero Only
2	EARTHWORK					
2.1	Excavation in Soil using Hydraulic Excavator/ mechanical means and Tippers with Disposal including all lead and lift. Excavation for roadwork in soil by hydraulic excavator/mechanical means including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting of usable soil to the embankment location within all lifts and lead and disposal of marshy soil/ unusable soil with all lead and lift and Reference to MORT&H's specification clause 301 and as directed by the Engineer.					

2.11	i) In all types of soil (Excluding marshy soil)	31518.000	Cum		0.00	INR Zero Only
2.12	ii) In Marshy soil	2908.000	Cum		0.00	INR Zero Only
2.2	Embankment Construction with approved material. Construction of embankment with approved material including all lead and lift complete as per drawings and MORT&H's Specification Clause 305 (Table-300-2) and as directed by the Engineer.					
2.21	i) With Pond ash (IRC-SP-58-2001)	200.000	Cum		0.00	INR Zero Only
2.22	ii) With Sand (Zone-II, IS- 383-1970) (MORT&H Specification Clause 305)	5006.000	Cum		0.00	INR Zero Only
2.23	iii) With Borrowed Earth (MORT&H Specification Clause 305)	1322.000	Cum		0.00	INR Zero Only
2.3	Construction of Embankment with Material Deposited from Roadway Cutting. Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2. complete with all lead and lift and Reference to MORT&H's specification clause 305 and as directed by the Engineer.	3152.000	Cum		0.00	INR Zero Only
2.4	Construction of Subgrade and Earthen Shoulders. Providing and construction of subgrade/shoulder with approved materials including all leads and lifts complete as per drawings and MORT&H's Specification Clause 305 and as directed by the Engineer.					
2.41	i) Pond ash/ Fly ash mixed with sand (Sand shall not be less than 30% by weight of mix)	11019.000	Cum		0.00	INR Zero Only
2.42	ii) With Borrowed Earth	5000.000	Cum		0.00	INR Zero Only

2.43	iii) With Sand (Zone-II, IS- 383-1970)	3995.000	Cum		0.00	INR Zero Only
3	SUB-BASE & BASE COURSES					
3.1	Granular Sub-Base (Table:- 400-1). Construction of granular sub-base by providing material, spreading in uniform layers 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, complete as per clause 401 and as directed by the Engineer.					
3.11	For grading -I (By Mix in Place Method)	4714.000	Cum		0.00	INR Zero Only
3.2	Wet Mix Macadam. Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper 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 complete as per drawings and Reference to MORT&H's specification clause 406 (Table-400-13) and as directed by the Engineer.	6830.000	Cum		0.00	INR Zero Only
4	BITUMINOUS COURSES					
4.1	Prime Coat. Providing and applying primer coat with bitumen emulsion (Grade SS-1) on prepared surface of granular Base including clearing of road surface and spraying primer using mechanical means. Reference to MORT&H's specification clause 502 and as directed by the Engineer.					
4.11	On WMM surface @0.70 kg/sqm.	25795.000	Sqm		0.00	INR Zero Only
4.2	Tack coat. Providing and applying tack coat					

	with bitumen emulsion (Grade RS-1) using emulsion pressure distributor on the prepared bituminous/granular/cement concrete pavement surface cleaned with mechanical broom. Reference to MORT&H's specification clause 503 and as directed by the Engineer.					
4.21	i) On bituminous surface @0.20 kg/sqm.	25795.000	Sqm		0.00	INR Zero Only
4.22	ii) On granular surface @0.25 kg/sqm.	25795.000	Sqm		0.00	INR Zero Only
4.3	Emulsion variation. Add or deduct for variation in actual quantity of emulsion used against the specified quantity in schedule above.					
4.31	i) For (Grade SS-1)	5.770	MT		0.00	INR Zero Only
4.32	ii) For (Grade RS-1)	4.220	MT		0.00	INR Zero Only
4.4	Dense Graded Bituminous Macadam. Providing and laying dense graded bituminous macadam (DBM) with batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder using VG-40 grade paving bitumen @ minimum 4.0% by weight of total mix and filler as per Table 500-10, transporting the hot mix to work site, laying with a paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 505.4 complete in all respects and Reference to MoRT&H's specification clause 505 and as directed by the Engineer.					
4.41	Grading 1	2005.000	Cum		0.00	INR Zero Only

4.5	Bituminous Concrete. Providing and laying bituminous concrete (BC) with batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder using VG-40 grade paving bitumen @ minimum 5.4% of mix and filler as per Table 500 -17, transporting the hot mix to work site, laying with a paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory tandem and pneumatic tyred rollers to achieve the desired compaction as per MORTH specification clause No. 507 complete in all respects and Reference to MoRT&H's specification clause 507 and as directed by the Engineer.					
4.51	Grading 2	1032.000	Cum		0.00	INR Zero Only
4.6	Bitumen variation. Add or deduct for variation in actual quantity of bitumen used against the specified quantity in schedule.					
4.61	VG 40 for dense graded bituminous macadam (DBM) and Bituminous Concrete (BC)	50.520	MT		0.00	INR Zero Only
5	BRIDGES					
5.01	Excavation for Structures. Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out,removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material. Reference to MORTH's specification clause 304 and as directed by the Engineer.					
5.02	Ordinary soil (Depth upto 3m)	4134.060	Cum		0.00	INR Zero Only
5.03	Plain Cement Concrete in Open Foundation, below friction slab complete as per Drawing and Technical Specifications. Reference to					

	MORT&H's specifications 1500, 1700 & 2100 and as directed by the Engineer.					
5.04	PCC M 15	820.920	Cum		0.00	INR Zero Only
5.05	Providing and laying Reinforced Cement Concrete of M40 grade in bored cast-in-situ concrete piles in all types of soil including cost of boring for piling with hydraulic piling rig of required capacity, conducting routine load tests (@ 2% of the total number of piles) as per IS 2911 (Part IV):2000 , but excluding cost of steel reinforcement, complete as per drawings, Reference to MORT&H's specifications 1100, 1700 and IRC 78 and removal of excavated earth with all lifts and lead and as directed by the Engineer.					
5.06	Pile diameter= 1000 mm	5200.000	Rm		0.00	INR Zero Only
5.07	Cement Concrete for Reinforced Concrete in Pile Cap complete as per Drawing and Technical Specification. Reference to MORT&H's specifications 1114, 1500 & 1700 and as directed by the Engineer.					
5.08	Grade M 40 (Using Batching Plant, Transit Mixer and Concrete Pump)	1798.420	Rm		0.00	INR Zero Only
5.09	Reinforced cement concrete in sub-structure and foundation complete as per drawing and Technical Specifications. Reference to MORT&H's specifications 1500, 1700 & 2200 and as directed by the Engineer.					
5.1	i) RCC M 30 grade (Using Batching Plant, Transit Mixer and Concrete Pump)	50.000	Cum		0.00	INR Zero Only
5.11	ii) RCC M 35 grade (Using Batching Plant, Transit Mixer and Concrete Pump)	50.000	Cum		0.00	INR Zero Only
5.12	iii) RCC M 40 grade (Using Batching Plant, Transit Mixer and Concrete Pump)	1222.450	Cum		0.00	INR Zero Only

5.13	Furnishing and Placing Reinforced cement concrete in super-structure as per drawing and Technical Specification. Reference to MORT&H's specifications 1500, , 1600, 1700 &1800 and as directed by the Engineer.					
5.14	i) RCC M 30 grade (Using Batching Plant, Transit Mixer and Concrete Pump)	2280.290	Cum		0.00	INR Zero Only
5.15	ii) RCC M 35 grade (Using Batching Plant, Transit Mixer and Concrete Pump)	50.000	Cum		0.00	INR Zero Only
5.16	iii) RCC M 40 grade (Using Batching Plant, Transit Mixer and Concrete Pump)	5796.000	Cum		0.00	INR Zero Only
5.17	Supplying and placing void forming spiral G.S. tubes(0.7mm thickness), dummy (0.8mm thickness),coupler (0.8mm thickness) in voided slab superstructure complete as per drawing & Technical Specifications and as directed by the Engineer.					
5.18	Outer Dia 1000mm	2464.000	Rm		0.00	INR Zero Only
5.19	Supplying, Fitting and Placing HYSD (TMT) Fe 500 / Fe 500D bar Reinforcement in Foundation/sub-structure/super-structure complete as per Drawing and Technical Specifications. Reference to MORT&H's specification 1600 and IS 1786 and as directed by the Engineer.	1955.870	MT		0.00	INR Zero Only
5.2	Supplying of all types of structural steel conforming to IS 2062-2011 of Grade E 250BR (Fe410), fabrication, assembling, raising, launching and lowering of bow string type truss (as shown in the drawing) by pulling method using roller and elevated trolley arrangement or any other method to be approved by consultant/ railways/ CRS, on sub-structure including provision for temporary trestle, side shifting track, track beam, channels, spreader beam etc,	710.000	MT		0.00	INR Zero Only

	<p>erection, fixing of bracing, rollers, side shifting tracks on pier caps, trolly refuges, if required, complete as per approved drawing including metallizing of steel girder, all coat of painting (one coat each of primer (IS:5666) + one coat zinc primer (IS:104) + two coats of aluminum paint (IS:2339)) shall be done only after erection and assembling of girder as per appendix vii of IRS slip no. b1-2001, if required, as per IRC/IRS specifications on all members, (Detailed fabrication and erection drawings and launching methodology are to be prepared and got approved by the contractor from Consultant) Rate includes complete fabrication of the bow string type truss, bracings, ties, stiffners, packing, diapharams, shop rivets/welding, T&F bolts, drifts, shop welds, templates, jigs, fixtures, back up support, accessories, transporting various components from fabrication shop to site, including all arrangements for loading from fabrication shop/yard, unloading at site of work, lift and taxes complete, erection of all temporary structures for launching and lowering of the bow string type truss in position, field riveting/welding, assembling of temporary support for side slewing providing sliding arrangements and slewing the girder in position, lowering of girder on bearings and bed plates, grouting holes in the bed block for fixing of HD bolts/anchor pins of bottom plates of bearings, all temporary arrangements complete as per Technical Specification Section 1900 and as directed by the Engineer. The bearing sets to be provided with the girders will be paid as per relevent item separately. Traffic blocks are to be arranged by the agency.</p>					
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5.21	Payment Schedule					
5.22	i) After fabrication at shop and supply at ROB site 55%					
5.23	ii) Erection/ Launching 20%					
5.24	iii) Completion including painting and finishing 25%					
5.25	Providing and laying in position 65 mm thick wearing coat consisting of 40mm thick bituminous concrete overlaid with a 25mm thick layer of mastic asphalt over deck slab after applying tack coat complete as per drawings and Technical Specifications Sections 500 and 2700 and as directed by the Engineer.	6618.000	Sqm		0.00	INR Zero Only
5.26	Providing and fixing in position bearings true to line and level with load variation to be restricted to + 10 % complete as per drawings and Technical Specifications Section 2000, IRC : 83 (Part III) 2002, and relevant BS Code and as directed by the Engineer.					
5.27	(i) Free Bearings					
5.28	(a) Free Spherical Knuckle Bearing-FB (Max Ver Load= 650 T & Max Hor Load = 30 T)	1.000	Nos		0.00	INR Zero Only
5.29	(b) Free Spherical Knuckle Bearing-FB (Max Ver Load= 170 T & Max Hor Load = 17 T)	36.000	Nos		0.00	INR Zero Only
5.3	(c) Free Spherical Knuckle Bearing-FB (Max Ver Load= 100 T & Max Hor Load = 10T)	7.000	Nos		0.00	INR Zero Only
5.31	(ii) Fixed Bearings					
5.32	(a) Fixed Spherical Knuckle Bearing-FX (Max Ver Load=650 T & Max Hor Load =120T)	1.000	Nos		0.00	INR Zero Only
5.33	(b) Fixed Spherical Knuckle Bearing-FX (Max Ver Load=420 T & Max Hor Load = 90T)	7.000	Nos		0.00	INR Zero Only
5.34	(c) Fixed Spherical Knuckle Bearing-FX (Max Ver Load=300T & Max Hor Load =70T)	6.000	Nos		0.00	INR Zero Only
5.35	(iii) Longitudinally Guided Bearings					
5.36	(a) Monoaxial (L) Spherical Knuckle Bearing -LG (Max Ver Load = 650 T & Max Hor Load = 110	1.000	Nos		0.00	INR Zero Only

	T)					
5.37	(b) Monoaxial (L) Spherical Knuckle Bearing - LG (Max Ver Load = 240 T & Max Hor Load = 40 T)	3.000	Nos		0.00	INR Zero Only
5.38	(c) Monoaxial (L) Spherical Knuckle Bearing -LG (Max Ver Load = 140T & Max Hor Load = 40T)	18.000	Nos		0.00	INR Zero Only
5.39	(iv) Transversely Guided Bearings					
5.4	(a) Monoaxial (T) Spherical Knuckle Bearing - TG (Max Ver Load =650T & Max Hor Load = 110 T)	1.000	Nos		0.00	INR Zero Only
5.41	(b) Monoaxial (T) Spherical Knuckle Bearing - TG (Max Ver Load =330T & Max Hor Load = 90 T)	3.000	Nos		0.00	INR Zero Only
5.42	(c) Monoaxial (T) Spherical Knuckle Bearing - TG (Max Ver Load =400T & Max Hor Load = 70T)	12.000	Nos		0.00	INR Zero Only
5.43	Supply, fitting and fixing in position true to line and level electrostatic 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. Reference to MORT&Hs specifications 2000 & 2200 and as directed by the Engineer.	966600.000	Cucm		0.00	INR Zero Only
5.44	Modular Strip / Box Seal Joint. Providing and laying of a modular strip Box seal expansion joint including anchorage catering to a horizontal movement beyond 80 mm and upto 160 mm, manufactured by MORT&H, GOI Approved/ Empanelled manufacturer and complete as per approved drawing and standard specification to be installed by the manufacturer/ supplier or their authorized representative ensuring compliance to the manufacturer's instructions for installation. Reference to MORT&H's specification 2607 and as directed by the	159.300	Rm		0.00	INR Zero Only

	Engineer.					
5.45	Reinforced Cement Concrete Crash Barrier. Provision of an Reinforced cement concrete crash barrier at the edges of the road, approaches to bridge structures and medians, constructed with M40 grade concrete with HYSD (TMT) Fe 500 / Fe 500D 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 24 June 1994 as per dimensions in the approved drawing and at locations directed by the Engineer, all as specified. Reference to MORT&H's specification 811 and as directed by the Engineer.					
5.46	i) For crash barriers M40	180.000	Rm		0.00	INR Zero Only
5.47	ii) For crash barriers Railing (MS Pipe 80mm Heavy Duty)	180.000	Rm		0.00	INR Zero Only
5.48	Arrangement for driving and installing steel posts of 'H'/2'H' sections including all H Piles and all materials of 5m length (min 3.0 m below ground) @2.0 m c/c as required to serve either as vertical restraints or as 'H' piles (All contractor's labour and materials including supply of 'H'/2'H' sections and fabrication) complete as per drawings, MoRTH's Specifications Sections 1900 and as directed by Engineer. (Note: Contractor shall dismantle and remove all steel posts after completion of work at his cost including mending the damages good as per specification and as directed by the Engineer and all such material be the property of the contractor.) Rate quoted shall	450.000	Rm		0.00	INR Zero Only

	be only for making available all the above for construction purpose only.					
5.49	Arrangement of steel liner plates 6mm thick and 2m height between the 'H' / 2'H' sections to form temporary wall including all Steel Plates and all other materials , cutting, transportating to site, fabricating and setting out complete as per drawing, MoRTH's Specifications Sections 1900 and as directed by Engineer. (Note:Contractor shall dismantle and remove all steel plates after completion of work at his cost including mending the damages good as per specification and as directed by the Engineer and all such material be the property of the contractor.) Rate quoted shall be only for making available all the above for construction purpose only.	117.000	MT		0.00	INR Zero Only
5.5	Carrying out and arrangement of initial vertical cyclic load test on a bored cast-in-situ pile of 1000mm dia as per IS:2911 Part-4-(latest revision). Initial Load Test shall be physical test only, dynamic testing shall not be allowed. The rate includes all labour & material ,Kentledge, loading & unloading, fixing instruments etc. and submission of test reports in three copies as a complete job. The test shall be carried out for 2 times the maximum design load with arrangement to handle additional 20% load over 2 times the maximum design load. Settlement/movement of the pile top shall be made by Linear Variable Differential Transducers (LVDT) having a least count of 0.01mm. The cost of the construction of pile for Initial Load Test shall be paid under the relevant Item of bored cast-in-situ pile and reinforcement. The rate shall include the preparation of pile	2.000	Nos		0.00	INR Zero Only

	head. Nothing extra shall be paid for excavation, dewatering and other preparatory works whatsoever, if required					
5.51	Providing, fitting and fixing mild steel railing complete as per drawing and Technical Specification. Reference to MORT&H's specifications 2703.2 & 1900 and as directed by the Engineer.	470.000	Rm		0.00	INR Zero Only
5.52	Drainage Spouts complete as per drawing and Technical specification. Reference to MORT&H's specification 2705 and as directed by the Engineer.	428.000	Nos		0.00	INR Zero Only
5.53	a) Providing and fixing in position 160mm dia PVC service/utility pipe including fittings, couplers, bends etc, omplete as per drawings and as directed by the Engineer.	5636.000	Rm		0.00	INR Zero Only
5.54	b) Providing and fixing in position 300 mm dia NP-3 hume pipe including fittings, couplers etc. complete in all respect , for crossing of utility, as per drawing and technical specification and as directed by the Engineer.	150.000	Rm		0.00	INR Zero Only
5.55	Reinforced cement concrete approach slab (RCC M30) including reinforcement and formwork complete as per drawing and Technical specification. Reference to MORT&H's specifications 1500,1600,1700 & 2704 and as directed by the Engineer.	41.040	Cum		0.00	INR Zero Only
5.56	Construction of precast RCC railing of M30 Grade, aggregate size not exceeding 12 mm, true to line and grade, tolerance of vertical RCC post not to exceed 1 in 500, centre to centre spacing between vertical post not to exceed 2000 mm, leaving adequate space between vertical post for expansion, complete as per approved drawings and technical specifications. Reference to MORT&H's	2472.960	Rm		0.00	INR Zero Only

	specifications 2703, 1500, 1600 &1700 and as directed by the Engineer.					
5.57	Supply and fixing of Pre-cast M30 Grade Concrete slab to be used on footpath including the cost of all materials, labour, operations, etc., and also including the cost of HYSD (TMT) Fe500 grade reinforcement (nominal reinforcement 10 mm dia) complete as per drawing, Technical Specifications Sections 1500, 1600 and 1700 and as directed by the Engineer.	27.000	Cum		0.00	INR Zero Only
5.58	Carrying out sub soil investigation / confirmatory boreholes at specified foundation locations before commencement of construction, complete as per drawings and Technical Specifications section 2400 and as directed by the Engineer.					
5.59	In all types of soil	840.000	Rm		0.00	INR Zero Only
5.6	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M - 30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the drawing and Technical Specifications Clause 410.3.6 and as directed by the Engineer.	350.000	Sqm		0.00	INR Zero Only
5.61	Construction of Reinforced Earth Structures (RES) together with earthwork in excavation, construction of foundation pad, earthwork in layers, assembly & erection of reinforcing element & placement of fascia panels and all associated components complete as per approved drawings and Technical Specifications					

	3100 and as directed by the Engineer.					
5.62	i) Designing, providing and erecting precast concrete facia panels of 180 mm thick in concrete grade M-35 including soil reinforcing element with geosynthetic strip, non - woven geotextiles, laying of soil reinforcement (geosynthetic strip) alongwith necessary insitu concrete works for foundation pad, filter media, supply and placement of all accessories and consumables, components, drainage system and excavation for foundation pad all complete and as directed by the Engineer.	6637.600	Sqm		0.00	INR Zero Only
5.63	ii) Back filling behind abutment, wing wall, return wall and RE wall with Sand Zone-II, IS- 383-1970, complete as per drawing and Technical Specification. Reference to MORT&H's specifications 2200 and clause 710.1.4 of IRC:78 and as directed by the Engineer.	26475.700	Cum		0.00	INR Zero Only
5.64	Painting Two Coats on New Concrete Surfaces: Painting two coats, after filling the surface & applying a sealing primer, with synthetic enamel paint in all shades on new concrete surfaces, as per MORT&H's specifications 803.6.2 (Reference to MORT&H's Specifications 803) and as directed by the Engineer.	16775.000	Sqm		0.00	INR Zero Only
5.65	Painting on Steel Surfaces: Providing and applying one coats of ready mix paint & two coats of synthetic enamel paint in all shades of approved brand on steel surface excluding steel truss after cleaning of surface to give an even shade, Reference to MORT&H's Specifications 803 and as directed by the Engineer.	494.360	Sqm		0.00	INR Zero Only
5.66	Supply & installation of Prefabricated Vertical drain as per approved design & drawing with					

	mechanical installation rig or other approved equipment without damaging, supplying & fixing anchor, PVD cutting & keeping required projection in sand blanket complete in all respects. The approved PVD product shall be Colbondrain CX1000 or ALIDRAIN HB65 or equivalent. The work shall also include supply & installation of woven Geotextile manufactured from 100% polyester yarn with molecular weight $\geq 25,000$ & of tensile strength in both MD/CMD directions ≥ 70 KN/m & strain of $10 \pm 2\%$. Tensile strength & strain are measured as per EN ISO 10319. Reference to MORT&H's Specifications 314 and as directed by the Engineer. The design provided by the vendor must be got vetted by a third party consultant/IEST/IIT/NIT by the constructor at his own cost.					
5.67	i) Supply and installation of PVD including charges for monitoring of settlement with settlement plates at least three number locations. The work shall also include supply & installation of woven Geotextile.	37159.320	Rm		0.00	INR Zero Only
5.68	ii) Sand filling (Zone- II, IS 383-1970)	2653.200	Cum		0.00	INR Zero Only
5.69	Providing and fixing 20mm thick compressible fiber board in expection joint complete as per drawing and technical specifications	33.500	Rm		0.00	INR Zero Only
5.7	Plaster (with 1:3 cement mortar 10mm thick) (to wall, floor, ceiling etc.) with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints including throating, nosing and drip course, scaffolding/staging where necessary. Reference to MORT&H's specification and as directed by the Engineer.	1031.900	Sqm		0.00	INR Zero Only
6	CROSS DRAINAGE STRUCTURES					

6.01	Drain at Edge of Pavement. Construction of drain 1 m x 0.75 m (inside dimensions) lined with R.C.C. (M-20) , 12.5 cm thick wall and covered with RCC (M-20) slab, 10 cm in thickness etc. complete as per Drawings on urban roads and reference to MORT&H's specification clause 309 and as directed by the Engineer.	2544.000	Rm		0.00	INR Zero Only
6.02	Laying Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Single Row. Laying Reinforced cement concrete pipe NP4/prestressed concrete pipe for culverts on first class bedding of granular material in single row including fixing collar with cement mortar 1:2 but excluding concrete works in head walls and parapets . Referce to MORT&H's Specifiactions 2900 and as directed by the Engineer					
6.03	1200 mm dia	30.000	Rm		0.00	INR Zero Only
6.04	900 mm dia	30.000	Rm		0.00	INR Zero Only
6.05	Excavation for Structures. 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. Reference to MORT&H's specification clause 304 and as directed by the Engineer.					
6.06	i) Ordinary soil (Depth upto 3m)	480.000	Cum		0.00	INR Zero Only
6.07	Plain Cement Concrete in Open Foundation, Head wall, Cadal concrete etc. complete as per Drawing and Technical Specifications. Reference to MORT&H's specifications 1500,					

	1700 & 2100 and as directed by the Engineer.					
6.08	i) PCC Grade M15	180.000	Cum		0.00	INR Zero Only
6.09	ii) PCC Grade M20	190.000	Cum		0.00	INR Zero Only
6.1	Painting Two Coats on New Concrete Surfaces: Painting two coats, after filling the surface & applying a sealing primer, with synthetic enamel paint in all shades on new concrete surfaces, as per MORT&H's specifications 803.6.2 (Reference to MORT&H's Specifications 803) and as directed by the Engineer.	107.000	Sqm		0.00	INR Zero Only
6.11	Providing and laying Pitching on slopes laid over prepared filter media including boulder apron laid dry in front of toe of embankment complete as per drawing and Technical specifications. Reference to MORT&H's Specifications 2504 and as directed by the Engineer.					
6.12	Stone/ Boulder	70.000	Cum		0.00	INR Zero Only
6.13	Providing and laying Flooring complete as per drawing and Technical Specification laid over cement concrete bedding. Reference to MORT&H's Specifications 2505 and as directed by the Engineer.					
6.14	a) Rubble stone laid in cement mortar 1:3	20.000	Cum		0.00	INR Zero Only
6.15	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification. Reference to MORT&H's Specifications 2504 and as directed by the Engineer.	99.000	Cum		0.00	INR Zero Only
6.16	Flexible Apron: Construction of flexible apron 0.75 m thick comprising of loose stone boulders weighing not less than 40 kg beyond curtain wall	59.000	Cum		0.00	INR Zero Only

	reference to MORT&Hs specification 2507.2 and as directed by the Engineer.					
6.17	Providing weep holes in 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, reference to MORT&Hs specifications 2706 & 2200 and as directed by the Engineer.	405.000	Nos		0.00	INR Zero Only
6.18	Drum Sheet Walling 1.40m (av.) high on sal-bullah pilling. 3.25m long driven 1.75m (av.) below G.L and 75cm center to center including fitting fixing 3 nos. of half bullah pieces and drum (empty bitumen) sheet (approved condition) on height 1.5m, cutting and straightening drum sheet (each joint must have lap length of min. 50mm) including cost of necessary nails, bolts, nuts etc. and providing 2 to 3m long half bullah ties @ 2.25m center to center fixed. bullah posts driven 1.5m below G.L including cost of all materials and one coat of coal tarring to all bullah etc. complete as per directed by the Engineer.					
6.19	i) 10cm diameter	100.000	Rm		0.00	INR Zero Only
6.2	ii) 15cm diameter	500.000	Rm		0.00	INR Zero Only
7	TRAFFIC SIGN MARKING AND OTHER APPURTENANCES					
7.1	Retro-Reflectorised Traffic Signs. Providing and fixing of retro- reflectorised cautionary, mandatory and inforatory sign as per IRC :67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron					

	post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing and reference to MORT&H's Specifications 801 and as directed by the Engineer.					
7.11	a) Octagonal stop sign 900mm size.	15.000	Each		0.00	INR Zero Only
7.12	b) Triangular sign 900 side.	15.000	Each		0.00	INR Zero Only
7.13	c) Circular sign 600 dia.	15.000	Each		0.00	INR Zero Only
7.14	d) Facility information signs 800mm x 600mm	15.000	Each		0.00	INR Zero Only
7.15	e) Facility information signs 600mm x 450mm	15.000	Each		0.00	INR Zero Only
7.2	Direction and Place Identification Signs Board. Providing and erecting direction and place identification retro- reflectorised sign as per IRC :67 made of high intensity grade sheeting vide clause 801.3, fixed over aluminium sheeting, 2 mm thick with area exceeding 0.9 sqm supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm, 2 Nos. firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing reference to MORT&H's Specifications 801 and as directed by the Engineer					
7.21	a) 3700mm x 2500mm	3.000	Each		0.00	INR Zero Only
7.22	b) 2000mm x 1250mm	3.000	Each		0.00	INR Zero Only
7.3	Road Marking with Hot Applied Thermoplastic	1193.000	Sqm		0.00	INR Zero

	Compound with Reflectorising Glass Beads on Bituminous Surface. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes. Reference to MORT&H's Specifications 803 and as directed by the Engineer.					Only
7.4	Cast in Situ Cement Concrete M20 Kerb. Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 390 mm high in M 20 grade , kerb stone laid with kerb laying machine, all complete as per clause 409 and reference to MORT&H's Specifications 409 and as directed by the Engineer.					
7.41	Using Concrete Batching and Mixing Plant	2744.000	Rm		0.00	INR Zero Only
8	MISCELLANEOUS					
8.01	Supplying digital record of project events in digital format (DVD/Flash Drive) including coloured photographs both in digital format as well as mounted on albums to serve as a permanent record of work needed for an authentic documentation complete as per Technical Specification Clause 121and as directed by the Engineer.	2.000	Set		0.00	INR Zero Only
8.02	Construction of temporary diversion and providing traffic safety and control devices where necessary and as per direction of the Engineer including maintenance thereof complete as per drawing and Technical Specification Clause 112 and as directed by the Engineer.	300.000	Rm		0.00	INR Zero Only

8.03	Arrangement of temporary barricade of 2 m height with 6 mm thick MS plate & 50 mm X 50 mm MS Angle for enclosing the construction zone with traffic signals during construction at site, for day and night as per instruction of Engineer and as per drawings. The above barricade shall be shifted within work zone as per requirement to cover entire work site and above rate shall include cost of all such activity. Payment Schedule : (i) On completion of Piling, Pile cap, open foundation and piers as approved by Engineer- 50% of accepted amount. (ii) After completion of all activities of Viaduct including removal of barricades and restoration of site with latest specification and as per the instructions of the Engineer, 50 % of accepted amount. The rate shall include shifting as required within limit of project site throughout the construction period and measurement for payment shall be in running metre of Barricade actually deployed not later than 180 days from the Start Date of Project .	400.000	Rm		0.00	INR Zero Only
8.04	Construction of field laboratory of total 200 sqm floor area including storage yard, arrangeent and installation of laboratory equipments of latest relevant standards, dismantling and disposal of the field laboratory after issue of taking over certificate on completion of contract as per technical specification 121. The rates shall inclusive of mobilisation of laboratory equipments in new/ or working condition of all the laboratory equipments duly calibrated , mainainance /reclaibration during uses and demobilisation and disposal after completion of the contract. The land for the Laboratory to be arranged by the contractor at his own cost.	1.000	LS		0.00	INR Zero Only

8.05	Supply of Chemicals, re-agents, consumable for field laboratory including cost of trained manpower for running the field laboratories, periodic calibrations, maintenance, serving of laboratory equipments etc as per technical Clause no 121 and as directed by the engineer.	24.000	Month		0.00	INR Zero Only
8.06	Maintenance of Earthen Shoulder (filling with fresh soil). Making up loss of material/irregularities on shoulder to the design level by adding fresh approved soil and compacting it with appropriate equipment and reference to MORT&H's Specifications 3003 and as directed by the Engineer.	250.000	Sqm		0.00	INR Zero Only
8.07	Repair to pot holes by removal of failed material, trimming the sides to vertical and leveling the bottom, clearing the same with compressed air or any appropriate method filled with B.M. (thickness not more than 75mm in single layer) applying bitumen emulsion prime coat at the bottom and bitumen emulsion tack coat on side and on bottom as per technical specification clauses 502 and 503 for Rural Road of MORD and as directed by the Engineer.	250.000	Sqm		0.00	INR Zero Only
8.08	Crack Filling. Filling of crack using slow curing bitumen emulsion and applying crusher dust in case cracks are wider than 3 mm and reference to MORT&H's Specifications 3004.3.3 and as directed by the Engineer.	1000.000	Rm		0.00	INR Zero Only
8.09	Repairing pot-holes and making up small depressions using Cationic Bitumen Emulsion conforming to IS 8887- 1978 with stone metals / chips premixed with emulsion in concrete mixer or any other method approved by the Engineer-in-Charge, including cutting the pot-hole area in regular shapes with vertical edges, thorough cleaning & moistening of	100.000	Cum		0.00	INR Zero Only

	surface, applying tack coat, filling up the potholes with pre-mixed metals/chips in layer/layers as per specification and direction of the Engineer-in-charge, compacting by power roller, finishing the top of repaired surface levelled with adjoining area including cost and carriage of stone aggregates, blinding material & bitumen emulsion, hire & running charges of rollers and other tools & plants, cost of fuel & lubricants and other incidental charges excluding cost of applying tack coat. Using stone chips of size 22.4 mm and 11.2 mm in 60:40 proportion, premixing with bitumen emulsion @ 70.7 kg per m3 of loose net volume of stone chips and as directed by the Engineer.					
8.1	Close Graded Premix Surfacing/Mixed Seal Surfacing Providing, laying and rolling of close graded premix surfacing material of 20 mm thickness composed of 11.2 mm to 0.09 mm (Type a) or 13.2 mm to 0.09 mm (Type-b) aggregates using penetration grade bitumen to the required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a batch mix type plant, laying and rolling with a Smooth wheeled roller 8-10 tonne capacity, and finishing to required level and grade and as directed by the Engineer.	500.000	Sqm		0.00	INR Zero Only
8.11	Bituminous Macadam Providing and laying dense graded bituminous macadam with batch mix type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required	100.000	Cum		0.00	INR Zero Only

	grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 505 complete in all respects. Reference to MORT&H's specification clause 505 and as directed by the Engineer.					
8.12	Coordination with different department and owner of utilities, tree which shall include attending the various office in and around site and kolkata, attending meeting, etc , obtaining detailed cost estimate for shifting after site inspection , arranging sub-contractor approved by the respective department for executing the shifting of utilities , tree culling etc including cost of dedicated personnel for such coordination, transportation to different office, submission and correspondences to such departments, handling of materials and subcontractors etc. as per Technical Specification Clause 110 and as directed by the Engineer..(Refer Clause No 21.1 COPA/Volume -I)	24.000	Month		0.00	INR Zero Only
8.13	Structural Steel insert plate for 7m high single arm galvanised octagonal post etc.complete in all respect and as directed by the Engineer	10.000	MT		0.00	INR Zero Only
8.14	Construction of Temporary Level Crossing at LC Gate No 12.SPL/T during construction period including cost of civil, electrical and S&T works as per drawing and as directed by the Engineer.Diversion of existing Level Crossing is indicated in Drawing No RITES/HWD/KOL/RT 330-00003/ROB/ADIS/05 Rev R0 and Contractor to co-ordinate with all activities with Railways and any other relevant Department .Work will be executed as per Technical	1.000	LS		0.00	INR Zero Only

	Specification laid down in IRS Manual and relevant RDSO Drawing . Amount incurred in execution of work shall be reimbursed by WBHDCL as per Bill of Quantities approved by the Eastern Railway Authority and work must be got executed through specialised sub-agency approved/recommended by Eastern Railway authorities .Contractor to quote rate only for Co-ordination with Railways and other authorities , procurement of approval of drawings and management of the shifting work only but excluding the cost of execution which shall be re-imbursed as per approved estimate of the Eastern Railways .(Refer Clause No 21.1 COPA/Volume -I)					
Total in Figures					0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only				