SUMMARY SHEET

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)

Sl. No.	Bill No.	Description	Amount (INR)	
			In Figure	In Words
1	Bill No.1	Site Clearance and Dismantling		
2	Bill No.2	Earthwork		
3	Bill No.3	Granular Sub Base and Base Course		
4	Bill No.4	Bitumen Courses		
5	Bill No.5	Cement Concrete Pavement		
6	Bill No.6	Culverts		
7	Bill No.7	Bridges		
8	Bill No.8	Traffic Signs, Marking and other Appurtenances		
9	Bill No.9	Drainage and Protection works		
10	Bill No.10	Miscellaneous		
11	Bill No.11	ROB		
12	Bill No.12	Day work		
		Total Amount (Bill No. 01 to 12)		

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-1	**SITE CLEARANCE AND DISMANTLING**							
1.01	201	**Clearing and Grubbing Road Land** Clearing & grubbing road land including uprooting trunk, vegetation, grass, bushes, shrubs, sapling and trees having girth upto 300mm, including excavation & backfilling to the required density, removal of left over stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned with all leads and lifts including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Ha	117.00				
1.02	201	Cutting of trees, making into logs, including removal of stumps and roots, backfilling with suitable material to required compaction, cutting of trunks, branches and handling, stacking and disposal of cleared material along with carriage of wooden logs to forest stock yard / depot with all lifts & leads.						
		a) Girth from 300 mm to 600 mm	No.	882.00				
		b) Girth from 600 mm to 900 mm	No.	269.00				
		c) Girth from 900 mm to 1800 mm	No.	309.00				
		d) Girth above 1800 mm	No.	87.00				
1.03	SOR, GoB	Translocation of Trees of different girths including minimum pruning of the branches, uprooting of trees, transportation, applying required hormone/chemicals on roots, plantation and taking care of trees minimum upto one year, removal of serviceable branches stumps, carriage of serviceable materials and unserviceable materials to forest stock yard / depot with all leads and lift and backfilling with suitable material to required compaction in the depression/ pit including cost of all types of machinaries and labour all complete job as per direction of Engineer In-Charge. (Translocation of trees as per guide line of forest Department/ MOEF specification)						
		a) Girth Below 300 mm	No.	1500.00				
		b) Girth from 300 mm to 600 mm	No.	3529.00				
		c) Girth from 600 mm to 900 mm	No.	1079.00				
		d) Girth from 900 mm to 1800 mm	No.	1240.00				
		e) Girth above 1800 mm	No.	348.00				

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					In Fig.	In Words	In Fig.	In Fig.
BILL No.-1	**SITE CLEARANCE AND DISMANTLING**							
1.04	305.4.3	Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material within all lifts and leads.	Sqm	2114.00				
1.05	202	**Dismantling of Structures** Dismantling of existing structure like Culverts, Bridges, Retaining walls and other structures comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, including backfilling of holes & depressions caused by dismantling operations with approved material and compacted to required density as directed by Engineer, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead complete.						
		a) Brick/ Stone Masonry in cement mortar	Cum	1912.00				
		b) Plain Concrete/ Reinforced Cement Concrete structures including clearing, straightening & cutting of bars and separating them out from RCC/PSC.						
		I) P.C.C.	Cum	38.00				
		II) R.C.C.	Cum	229.00				
		c) Removing all type of Hume Pipes and stacking with all leads including earthwork.	Lm.	40.00				
		d) Kilometer stone	No.	45.00				
		e) 5th kilometer stone	No.	12.00				
		f) Hectometer stone / Guard Post	No.	180.00				
		g) Removal of existing asphaltic wearing coat comprising of 50 mm thick asphaltic concert laid over 12 mm thick mastic asphalt including disposal with all lift and lead.	Sqm	368.00				
1.06	202	Dismantling of Flexible Pavements						
		Dismantling of flexible pavements and disposal of dismantled materials with all leads and lifts, stacking serviceable and unserviceable materials separately by Mechanical means.						
		a) Bituminous Course	Cum	7207.00				
		b) Granular Course	Cum	12124.00				
1.07	202	Credit towards salvage value of dismantled materials from rigid pavements and structures as per Technical Specification Clause 202.						
		a) PCC	Cum	19.00				
		b) RCC	Cum	114.00				
		c) Hume Pipe	Lm.	40.00				
		d) Kilometer Stone	No.	45.00				
		e) 5th Kilometer Stone	No.	12.00				
		f) Hectometer Stone	No.	180.00				
		g) Hume pipe for from diversion	Lm.	60.00				
		h) Granular Material	Cum	200.00				
1.08	202	Credit towards salvage value of dismantling of Flexible pavements per Technical Specification Clause 202.						
		a) Bituminous Course	Cum	2883.00				
		b) Granular Course	Cum	12124.00				
				Total of Bill no. 1				

BOQ Item No.	Reference to MoRT&H/Tech.	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-2 EARTHWORKS								
2.01	301	**Excavation in Soil using Hydraulic Excavator and Tippers with Disposal.** Excavation for roadwork in soil with hydraulic excavator including cutting and loading in tippers, trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections and transporting suitable cut materials to the embankment location and disposing off unsuitable cut material with all lifts and leads complete as per Technical Specification Clause 301.	Cum	2,07,098.00				
		All type of soil						
2.02	305	**Construction of Embankment with Material obtained from Borrow pits** Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2 of MoRTH specification complete as per drawings and Technical Specification Clause 305.	Cum	2,10,105.00				
2.03	305	**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. with all lifts & lead	Cum	1,70,901.00				
2.04	305 & 408	**Construction of Subgrade and Earthen Shoulders** Construction of Subgrade and Shoulder with approved material obtained from borrow area with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2 of MoRTH specification complete as per drawings and Technical Specification Clause 305 and 408.	Cum	5,20,187.00				
2.05	408	**Filling of Median and Island with Soil Taken from Borrow Areas** Filling of median and Island above road level with approved material brought from borrow pits, spread, sloped and compacted as per clause 408	Cum	1,436.00				
2.06	305 & IRC SP-58	Embankment Construction with Flyash/Pond ash available from coal or lignite burning Thermal Plants as waste material. Construction of embankment with Flyash conforming to table 1 of IRC: SP: 58 obtained from coal or lignite burning thermal power stations as waste material, spread and compacted in layers at OMC, all as specified in IRC: SP: 58 and as per approved plans.	Cum	94,582.00				
2.07	305.3.4	**Compacting original ground supporting sub-grade** Loosening, laveling and compacting original ground supporting embankment/Subgrade & Recompacting : Loosening, leveling and compacting original ground supporting embankment/Subgrade to facilitate placement of first layer of embankment/Subgrade, scarified to the depth of 150mm, mixed with water at OMC and then compacted by rolling so as to achieve minimum dry density as given in Table 300-2 of Technical specification for embankment construction.	Cum	1,03,549.00				
		Total of Bill no. 2						

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
SECTION -3	**SUBBASE AND BASE COURSES**							
3.01	401	**Granular Sub-Base with Graded Material (Table:- 400-1)** **By Plant Mix Method (Grade V)** Construction of granular sub-base by providing close graded material, mixing in a mechanical mix plant at OMC, carriage of the mix material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401	Cum	2,25,404.00				
3.02	406	**Wet Mix Macadam (Plant Mix Method)** 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 Technical Specifications Clause 406 and Table 400-13	Cum	1,25,915.00				
		Total of Bill no. 3						

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-4	**BITUMEN COURSES**							
4.01	502	**Prime Coat over WMM/WBM** Providing and applying primer coat with SS1 grade bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying primer at the rate of 0.70 to 1.00 kg/sqm using mechanical means.	Sqm	4,87,220.00				
4.02	503	Providing tack coat (cationic Bitumen Emulsion RS1 Grade conforming to IS: 8887) using emulsion pressure distributor at the rate mentioned in Table 500-5 of Technical Specification on the prepared bituminous/granular surface cleaned with mechanical broom.						
		a) Tack Coat on Granular surfaces treated with primer Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surface cleaned with mechanical broom.	Sqm	4,87,220.00				
		b) Tack Coat on Bituminous surfaces Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 to 0.30 kg per sqm on the prepared bituminous surface cleaned with mechanical broom.	Sqm	9,40,898.00				
4.03	505	**Dense Graded Bituminous Macadam Grading 1** Providing and laying Dense Graded Bituminous Macadam (With Bitumen VG-30 Garde) with higher capacity batch type HMP using crushed aggregates of specified grading, premixed with bituminous binder at the rate mensioned in supplementary Technical specification, transporting the hot mix to work site, laying with a hydrostatic 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 and Table 500-10 complete in all respects.	Cum	53,594.00				
4.04	507	**Bituminous Concrete Grading 2** Providing and laying bituminous concrete (with CRMB-60) with higher capacity batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder at the rate mensioned in supplementary Technical specification, transporting the hot mix to work site, laying with a hydrostatic 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. 507 and Table No- 500-17 complete in all respects	Cum	19,489.00				
		Total of Bill no. 4						

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-5	**CEMENT CONCRETE PAVEMENT**							
5.01	601	**Dry Lean Cement Concrete Sub- base** Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 26.5 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing as per technical specification complete in all respect.	Cum	13,284.00				
5.02	602	**Cement Concrete Pavement** Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with approved grade cementcontent not less than @ 360 kg per cum, coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 31.5 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing and technical specification complete in all respect. .	Cum	24,520.00				
5.03	1500, 1600, 1700 & 2100	**Transition Section between Rigid and Flexible Pavement** Due to change in the properties of materials and type of construction, a gradual changeover from rigid pavement to flexible pavement is desirable to avoid any damage at the butting joint. After provision of an expansion joint in the cement concrete slab (M-40 Grade) including TMT (Fe-500) reinforcement bar, the thickness of slab should be tapered to 10 cm over a length of 3 m towards the flexible pavement. The deficiency of thickness caused due to tapering of the slab should be made up by the asphaltic layers and as per direction of Engineer In- Charge.	Cum	162.00				
		Total of Bill no. 5						

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-6	**CROSS DRAINAGE WORK - CULVERT**							
6.01	304 & 2903	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, backfilling with the approved material as per drawing and technical specification complete in all respect.	Cum	24,042.00				
6.02	710.1.4 of IRC 78 & 2200	Providing and laying Back filling behind abutments, wing walls and return walls or any other area with selected granular material of approved quality including all material, labour, equipment carriage etc. as per drawing and Technical Specification. complete in all respect.						
		Granular material	Cum	2,408.00				
6.03	2504.2 & 710.1.4 of IRC 78.	Providing and laying of filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of Technical 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 including all material, labour, equipment carriage etc. as per drawing and Technical Specification.Clauses 300, 2504 & IRC 78.	Cum	2,788.00				
6.04	1500, 1700 & 2100	Providng and laying Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. Using Batching plant and concrete pump						
		a) M15 Grade	Cum	1,460.00				
		b) M20 Grade	Cum	422.00				
6.05	1500, 1700 & 2100	Providng and laying Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M30 Using batching plant transit mixer & Concrete pump	Cum	2,334.00				
6.06	1500, 1700 & 2200	Providng and laying Plain/Reinforced Cement Concrete in sub-structure including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M20 Using batching plant transit mixer & Concrete pump	Cum	1,989.00				
6.07	1500,1700 & 2200	Plain/Reinforced Cement Concrete in sub-structure including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. Using batching plant transit mixer & Concrete pump						
		a) RCC Grade M25	Cum	12.00				
		b) RCC Grade M30	Cum	1,742.00				

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-6	**CROSS DRAINAGE WORK - CULVERT**							
6.08	1500, 1700 & 2300	Providing, laying and Placing Reinforced/ Prestressed cement concrete in super-structure including centering & shuttering but excluding Reinforcement as per drawing and Technical Specification Using batching plant transit mixer & Concrete pump						
		a) RCC Grade M25	Cum	42.00				
		b) RCC Grade M30	Cum	363.00				
6.09	811	Provision of a Reinforced cement concrete crash barrier at bridge/culvert deck and approaches to the structures, constructed with Reinforced Cement Concrete with HYSD reinforcement conforming MoRTH specifications and as per details given in IRC-5 (fig -5b) including dowel bars 25 mm dia, 450mm long at expansion joints filled with premoulded asphalt filler board etc. and approved drawing and at locations as directed by the Engineer, all as specified Crash Barrier for bridge/culvert as per details given in IRC-5 (fig-5,b)(Area-0.243 Sqm / Meter, single face)	Lm	220.00				
6.10	1600	Providing & fixing in position thermomechanically treated (TMT) Fe 500 D grade HYSD reinforcement bars in foundations, substructures, superstructure etc. complete as per drawings and Technical Specifications Section 1600.						
		a) In Foundation	tonne	172.00				
		b) In Sub Structure	tonne	151.00				
		c) In Super Structure	tonne	27.00				
6.11	1500, 1600, 1700 & 2704	Reinforced Cement Concrete of grade M 30 in approach slab including reinforcement and formwork complete as per drawing and Technical specification	Cum	705.00				
6.12	1500, 1600, 1700 & 2704	PCC M15 Grade levelling course below approach slab complete as per drawing and Technical Specification	Cum	353.00				
6.13	IRC 7	Providing and Painting with synthetic enamel paints of approved quality on Bridges with Bridge no. and span arrangements as per Technical Specifications IRC 7.	No.	176.00				
6.14	IRC SP 13	Providing and fixing Tar paper bearing complete as per drawing and Technical Specifications Section 2000.	Sq.m	53.00				
6.15	800	Painting on concrete surface 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 sqm.	Sq.m	199.00				

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					In Fig.	In Words	In Fig.	In Fig.
BILL No.-6	**CROSS DRAINAGE WORK - CULVERT**							
6.16	500 & 2700	Providing 65 mm thick wearing course (Type-2) consisting of 40 mm thick bituminous concrete overlaid with 25mm thick mastic asphalt in deck slab after applying Tack coat with paving grade bitumen meeting the requirements given in MORTH Specification Table 500-39, Table 500-40, Table 500-41, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of 9.5 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 816 of Technical Specification.) in deck slab after applying prime coat complete as per drawings and technical specifications section 500 and 2700 or as directed by Engineer.	Sq.m	533.00				
6.17	2706	Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC/PVC-U (IS:13952, Type B), AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing force, Complete as per drawing and Technical Specifications	No.	3,993.00				
6.18	2507.2	Curtain wall complete as per drawing and Technical specification Cement concrete M15 grade	Cum	1,985.00				
6.19	2504	Providing and laying stone boulder pitching (wt not less than 40kg) on slopes laid over prepared filter media including boulder apron laid in front of toe of the embankment complete as per drawing and technical specifications section 2504.	Cum	4,092.00				
6.20	2505	Providing and laying Flooring complete as per drawing and Technical specifications laid over cement concert bedding. Rubble stone laid in cement mortar 1:3	Cum	1,089.00				
6.21	2705	Providing and fixing drainage spouts as per drawings and Technical Specifications Clause 2705.	No.	32.00				
6.22	2900, 1300, 1400 & 1700	Laying Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Single Row. Providing ,Laying and jointing 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 excavation, protection works, backfilling, concrete and masonry works in head walls and parapets						
		a) 1000 mm dia-Multiple Row	Lm	30.00				
		b) 1200 mm dia-Single Row	Lm	800.00				
6.23	2504	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification 2504	Cum	84.00				
6.24	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications (Encasing the hume pipe). M20 Using batching plant transit mixer & Concrete pump	Cum	80.00				
		Total of Bill no. 6						

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BOQ Item No.	Reference to MoRT&H/Tech	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-7	**BRIDGES**							
7.01	304	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, backfilling with the approved material.	Cum	18,019.00				
7.02	305, IRC 78	Back filling behind abutments, wing walls and return walls with selected granular material of approved quality complete as per Drawing and Technical Specification. Granular Material	Cum	4,804.00				
7.03	305 & 2500 IRC 78	Providing and laying of filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of Technical 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 including all material, labour, equipment carriage etc. as per drawing and Technical Specification.Clauses 300, 2504 & IRC 78.	Cum	1,830.00				
7.04	1500, 1700 & 2100	Providng and laying Plain/Reinforced Cement Concrete in foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications.						
		a) M-15 Grade	Cum	1,254.00				
		b) M-20 Grade	Cum	660.00				
7.05	1500, 1700 & 2100	Providng and laying Plain/Reinforced Cement Concrete in foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M30 Using batching plant transit mixer & Concrete pump	Cum	3,325.00				
7.06	1500, 1700 & 2200	Plain/Reinforced Cement Concrete in sub-structure including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. Using batching plant transit mixer & Concrete pump						
		a) M20 Grade	Cum	803.00				
		b) M25 Grade	Cum	67.00				
		c) M30 Grade	Cum	2,139.00				
7.07	1500, 1700 & 2300	Providing & laying Reinforced cement concrete of M30 grade including centering and shuttering but excluding reinforcement in superstructure complete as per drawing and Technical Specifications, Sections 1500, 1600,1700 & 2300.	Cum	1,844.00				

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					In Fig.	In Words	In Fig.	In Fig.
BILL No.-7	**BRIDGES**							
7.08	811	Provision of a Reinforced cement concrete M40 crash barrier at bridge deck and approaches to the structures, constructed with Reinforced Cement Concrete with (TMT) Fe 500 D grade HYSD reinforcement conforming MoRTH specifications and as per details given in IRC-5 (fig -5b) including dowel bars 25 mm dia,450 mm long at expansion joints filled with premoulded asphalt filler board etc. and approved drawing and at locations as directed by the Engineer, all as specified Crash Barrier for bridge as per details given in IRC-5 (fig-5,b)(Area-0.243 Sqm / Meter, single face)	Lm	544.00				
7.09	2703, 1500, 1600 & 1700, 2703	Construction of RCC railing of M30 Grade in-situ with 20 mm nominal size aggregate, 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, including centering and shuttering, reinforcement complete as per approved drawings and technical specifications.	Lm	181.00				
7.10	1500, 1600, 1700 & 2704	Reinforced Cement Concrete of grade M 30 in approach slab including reinforcement and formwork complete as per drawing and Technical specification	Cum	338.00				
7.11	1500, 1600, 1700 & 2704	PCC M15 Grade levelling course below approach slab complete as per drawing and Technical Specification	Cum	168.00				
7.12	1600	Supplying, fitting and placing (TMT) Fe 500 D grade HYSD bar reinforcement in foundation/ sub-structure and super-structure complete as per drawing and technical specifications						
		a) In foundation	tonne	121.00				
		b) In substructure	tonne	119.00				
		c) In super structure	tonne	93.00				
7.13	IRC 7	Providing and painting with Synthetic enamel paint of approved quality on bridges with bridge no. and span arrangements complete as per IRC - 7, 1971 .	No.	26.00				
7.14	2000 IRC-SP-13	Providing and fixing Tar paper bearing complete as per drawing and Technical Specifications Section 2000.	Sq.m	126.00				
7.15	800	Painting on concrete surface 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 sqm.	Sq.m	524.00				
7.16	2604	Providing and fixing in position 20 mm thick premoulded joint filler in expansion joint for fixed ends of simply supported spans not exceeding 10 m to cater for a horizontal movement upto 20 mm, covered with sealant complete as per drawing and technical specifications.	Lm	442.00				
7.17	2705	Drainage Spouts complete as per drawing and Technical specification	No.	78.00				
7.18	2706	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 foce. Complete as per drawing and Technical Specifications	No.	2,845.00				

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					In Fig.	In Words	In Fig.	In Fig.
BILL No.-7	**BRIDGES**							
7.19	2507.2	Curtain wall complete as per drawing and Technical specification Cement concrete M15 grade	Cum	1,076.00				
7.20	2500 2504	Providing and laying boulders apron on river bed for protection against scour with stone boulders weighing not less than 40 kg each complete as per drawing and Technical specification. Boulder laid dry without wire crates	Cum	2,159.00				
7.21	2505	Providing and laying Flooring complete as per drawing and Technical specifications laid over cement concert bedding. Rubble stone laid in cement mortar 1:3	Cum	1,202.00				
7.22	500 & 2700	Providing 65 mm thick wearing course (Type-2) consisting of 40 mm thick bituminus concrete overlaid with 25mm thick mastic asphalt in deck slab after applying Tack coat with paving grade bitumen meeting the requirements given in MORTH Specification Table 500-39, Table 500-40, Table 500-41, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of 9.5 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 816 of Technical Specification.) in deck slab after applying prime coat complete as per drawings and technical specifications section 500 and 2700 or as directed by Engineer.	Sq.m	3,111.00				
7.23	2504	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification	Cum	153.00				
7.24	2504	Providing and laying Stone Boulder (having wt not less than 40Kg each) 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	Cum	425.00				
7.25	401	Providing and compacting Grandular material for soil improvement (SBC improvement) complete as per drawings and as directed by the Engineer.	Cum	5,264.00				
7.26	Additional Specification	Providing and installation stone column for ground improvement as per additional Technical Specification.	Cum	12,120.00				
7.27		Providing and laying sand filling clean medium to coarse sand (70%-80% relative density) underneath RCC Box complete as per drawings and as directed by the Engineer.	Cum	202.00				
		Total of Bill no. 7						

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-8		**TRAFFIC SIGNS, MARKING AND OTHER APPURTENANCES**						
8.01	800	providing, fabricating and fixing in position overhead Gantry structure fabricated with structural steel compelete as per Drawings and technical specification Section 800						
	304 & 2903	a) Earthwork in excavation of foundation for structures in all types of soil excluding rock, including setting out construction of shoring & bracing, removal of stumps & other deleterious matters, dressing of sides & bottom and backfilling with approved material.	cum	235.00				
	1500, 1700 & 2100	b)Providing and laying Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M-15 using batching plant & Concrete pump	cum	17.00				
	1500, 1700 & 2100	c) Providing and laying Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M-25 using batching plant & Concrete pump	cum	112.00				
	1600	d) Supplying, fitting and placing TMT (Fe 500D) Grade HYSD bar reinforcement in foundation/ sub-structure complete as per drawing and technical specifications	Tonne	6.00				
	802	e) Providing and erecting overhead signs with a corrosion resistant 2mm thick aluminium alloy sheet reflectorised with high intensity retro-reflective sheeting of encapsulated lense type with vertical and lateral clearance given in clause 802.2 and 802.3 and installed as per clause 802.7 over a designed support system of aluminium alloy or galvanised steel trestles and trusses of sections and type as per structural design requirements and approved plans & as per IRC:67						
		(i) Truss and Vertical Support	Tonne	43.00				
		(ii) Aluminium Alloy Plate for Over Head Sign	Sqm	272.00				
8.02	811	**Type - A, "W" : Metal Beam Crash Barrier** Providing and erecting a "W" 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 vertical post, 150 x 75 x 5 mm spaced 2 m centre to centre, 1.8 m high, 1.1 m below ground/road level, all steel parts and fitments to be galvanised by hot dip process, all fittings to conform to IS:1367 and IS:1364, metal beam rail to be fixed on the vertical post with a spacer of channel section 150 x 75 x 5 mm, 330 mm long complete as per clause 811	Lm	28,141.00				
8.03	807	**Boundary Pillar** Providing cement concrete M15 grade boundary pillar of standard design as per IRC:25 fixed in position including finishing and lettering but excluding painting.	No.	628.00				

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-8	**TRAFFIC SIGNS, MARKING AND OTHER APPURTENANCES**							
8.04	800	**Kilometer Stone** Reinforced cement concrete M15 grade kilometer stone of standard design as per IRC:8 fixing in position including painting and printing etc.						
		a) 5th Kilometer stone(precast)	No.	13.00				
		b) Ordinary Kilometer stone (precast)	No.	49.00				
		c) Hectometer Stone (precast)	No.	252.00				
8.05	801 IRC 25	Providing and fixing of retro- reflectorised cautionary, mandatory and informatory sign as per IRC :67 made of Class-B Type IV retro reflective sheeting fixed over 2mm thick Aluminium sheeting vide clause 801.3, 3mm/4mm thick Aluminum composite material sheet depending on the size of the sign fixed over back support frame of min 25x25x3mm Angle mounted on a mild steel circular pipe 65 NB ,3.2 mm thickness firmly fixed to the ground by means of properly designed foundation with M25 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing. The sign shall be maintained as per Secion 12 of IRC-67.						
		a) 90 cm Equilateral triangle (Cautionary Sign Boards)	No.	144.00				
		b) 80cmx 60cm Rectangular (Informatory Sign Boards)	No.	85.00				
		c) STOP Sign Octagonal (90 cm)	No.	53.00				
		d) Route Marker	No.	28.00				
		e) 60 cm Circular (Mandatory Sign Boards)	No.	55.00				
8.06	800,	**Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous** SurfaceProviding 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 inclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes. as per drawing and technical specification clause 800 and IRC 35.	Sqm	23,134.40				
8.07	409	Cast in Situ Cement Concrete M20 kerb Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409						
		Using Concrete Batching and Mixing Plant	Lm	8,743.00				
8.08	409	Cast in Situ Cement Concrete M20 kerb with Channel Construction of cement concrete kerb with channel with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M15 grade foundation 150 mm thick, kerb channel 300 mm wide, 50 mm thick in PCCM20 grade, sloped towards the kerb, kerb stone with channel laid with kerb laying machine, foundation concrete laid manually, all complete as per clause 409						
		Using Concrete Batching and Mixing Plant	Lm	190.00				

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-8	**TRAFFIC SIGNS, MARKING AND OTHER APPURTENANCES**							
8.09	800	Painting on new concrete sufaces						
		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 sqm.	Sqm	1,350.00				
8.10	803 & 804	Road Marker/Stud with Lense Reflector						
		Providing and fixing raised pavement marker (Road studs) made of polycarbonate body of approved quality, bidirectional micro-prismatic polycarbonate lense welded electronically to the body, installed in asphaltic or concrete surface by drilling hole 30mm upto a depth of 60mm and bedded in suitable bituminous grout or epoxy mortar all as per Technical Specification all complete as directed by the Engineer	No.	3,044.00				
8.11	803 & 804	Providing and fixing raised pavement marker (Road studs) made of polycarbonate body of approved quality, bidirectional micro-prismatic polycarbonate lense welded electronically to the body, installed in asphaltic or concrete surface by drilling hole 30mm upto a depth of 60mm and bedded in suitable bituminous grout or epoxy mortar all as per Technical Specification all complete as directed by the Engineer	No.	5,517.00				
8.12	410	Construction of footpath/ separator by providing a 150 mm compacted granular sub- base as per Clause 401 and 25 mm thick cement concrete grade M-15, over laid with precast concrete tiles (M-30) 300x300x25 mm in cement mortar 1:3 including provision of all drainage.	Sqm	9,222.00				
8.13	806	Road Delineators						
		(i) Supplying and installation of Road Delineators , 80-100 cm high above ground level, 75 mm dia circular reflactorised panels at the top, buried or pressed into the ground and conforming to IRC-79 and the drawings.	No.	3,214.00				
	806& IRC 79	(ii) Supplying and installation of road way indicators/ hazard markers/ object markers, 80-100 cm high above ground level, painted black and white in 15 cm wide strips,fitted with 80 x 100 mm rectangular reflactorised panels at the top, conforming to IRC-79 and the drawings.	No.	1,147.00				
8.14	1500 & 1700	Providing and fixing M-20 grade cement concrete guard post complete as per drawing and Technical Specifications	No.	4,149.00				
		Total of Bill no. 8						

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-9	**DRAINAGE & PROTECTION WORKS**							
9.01	304	Earth work in excavation of foundation for structure complete including setting out construction of shoring & bracing, removal of stumps & other deleterious matters, dressing of sides & bottom and backfilling with approved material including compaction by mechanical means with all leads and lifts as per drawing and technical specification clause 304.	Cum	90,174.00				
9.02	1500, 1700 & 2100	Providing and laying Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M15 Using batching plant transit mixer & Concrete pump	Cum	4,576.00				
9.03	1500, 1700 & 2100	Providing and laying Plain/Reinforced Cement Concrete in sub-structure including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M20 Using batching plant transit mixer & Concrete pump (Height upto 5m)	Cum	16,431.00				
9.04	1500, 1700 & 2100	Providing and laying Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M25 Using batching plant transit mixer & Concrete pump	Cum	11,722.00				
9.05	Clauses 300, 2504 & IRC 78.	Providing and laying of filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2504.2.2. of Technical 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 including all material, labour, equipment carriage etc. as per drawing and Technical Specification.Clauses 300, 2504 & IRC 78.	Cum	12,019.00				
9.06	2706	Providing weep holes in Brick masonry/Plain/ Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC pipe/ PVC-U, extending through the full width of the structure with slope of 1V :20H towards drawing force. Complete as per drawing and Technical Specifications	No.	27,095.00				

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-9		**DRAINAGE & PROTECTION WORKS**						
9.07	1600	Supplying, fitting and placing TMT (Fe 500D) Grade HYSD bar reinforcement in foundation/ sub-structure complete as per drawing and technical specifications	tonne	2,630.00				
9.08	2504	Providing and laying Stone Boulder (wt not less than 40Kg each) 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	Cum	7,708.00				
9.09	2500	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification	Cum	5,139.00				
9.10	2900	Laying Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Single Row (1200mm dia) 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 excavation, protection works, backfilling, concrete and masonry works in head walls and parapets .	Lm	220.00				
9.12	IRC-SP-42 and Additional Specification	Construction of drainage chute on high embankment slopes in cement concrete M-15 grade complete as per drawing and Technical Specification Sections 1500 and 1700.	Lm	968.00				
9.13	IRC-SP-42	Construction of Energy Dissipation Basin at toe of Chutes in cement concrete M-15 grade complete as per drawing and Technical Specification Sections 1500 and 1700 as directed by Engineer	No.	318.00				
		Total of Bill no. 9						

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-10	**MISCELLANEOUS**							
10.01	Additional Specification	Providing and maintaining of furnished base office accommodation including recurring expenses for office maintenance such as office security (Guard & gardening), stationary, telephone, Fax Courier, Reports, Documentation, Photocopy, printing, Power Support, DG etc for BSRDCL and his staff complete as per drawing and Technical specification clause 122.	Month	54.00				
10.02	124.00	Providing and maintaining vehicles for employer including providing driver, POL etc. complete as per technical Specifications Clause 124 (Approx. 3000 km per month), AC Passenger Cars (Scorpio, Innova or Equivalent) not more than three year old at any time	Month	324.00				
10.03	121	Supply of project records in digital format of Project records in Digital format (DVD/Flash Drive) including colour photographs both in digital format as approved by Engineer and as per Technical Specification Clause 121.	No.	600.00				
10.04	300,1000,1300,1500, 1600, 1700, 1900 & 2300	Construction of passenger shelter at bus bays complete as per Drawings and Technical Specifications Sections 300, 1000, 1300, 1500, 1600, 1700, 1900 and 2300.	No.	46.00				
10.05		Providing and Fixing litter bins as directed by the Engineer.	No.	46.00				
10.06	Additional Specification	Providing and placing highmast light complete as directed by the Engineer.	No.	6.00				
10.07	Additional Specification	Providing and placing Single Arm / Double Arm Lighting complete as directed by the Engineer.						
		(i) Single Arm	No.	307.00				
10.08	803	Painting on concrete surface 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 sqm.	Sqm	1,921.00				
10.09		Relocation/enhancement of hand pumps of IndiaMark-II or approved make and quality, complete with platform (1.5mX1.5 m) with drainage accessibility and soak pit for mitigation as per EMP and as directed by the Engineer						
		All Type of Hand pump	Each	45.00				
10.10		Enhancement measures and construction as per type design for well upto required depth and availability of potable water including testing of water as per EMP and direction of Engineer and Technical Specification.						
		All type of Well	Each	3.00				
10.11		(i) Relocation / Enhancement of the Shrines / temples as per EMP and direction of Engineer.	Sqm	1,131.00				
		(ii) Relocation / Enhancement Govt /Public building as per EMP and direction of Engineer.	Sqm	245.00				

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-10	**MISCELLANEOUS**							
10.12		Monitoring of Environmental Parameters as per EMP and as directed by Engineer.						
		(a) Ambient Air Quality monitoring as per Monitoring Plan (Total 4 locations in the interval of 3 months for 2 Years)	Sample	72.00				
		(b) Ambient Noise level monitoring as per Monitoring Plan (Total 4 locations in the interval of 3 months for 2 Years)	Sample	72.00				
		(c) Water Quality monitoring of surface water as per Monitoring Plan (Total 2 locations in the interval of 3 months for 2 Years)	Sample	36.00				
		(d) Soil Quality monitoring of Agricultural lands as per Monitoring Plan (2 locations in the interval of 3 months for 2 Years)	Sample	36.00				
		(e) Water Quality monitoring of drinking water from construction camp (Total 2 locations in the interval of 3 months for 2 Years)	Sample	48.00				
10.13		Provide the noise barrier at sensitive areas like schools and hospitals. The noisebarrier of hollow brick wall/reinforced concrete panels with height of 3.5 m. The design of the noise barrier shall be approved by the engineer in charge.	Lm	680.00				
10.14	3004.2	**Filling Pot- holes and Patch Repairs with - Bituminous concrete**, 40mm. Removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per clause 503, back filling the pot holes with hot bituminous material as per clause 504, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per clause 3004.2	Sqm	5,282.00				
10.15	511 & 3004	**Close Graded Premix Surfacing/Mixed Seal Surfacing** Providing, laying and rolling of open - graded premix surfacing of 20 mm thickness composed of 13.2 mm to 0.09 mm (Type-b) aggregates using Viscocity grade bitumen to required line, grade and level to serve as wearing course on a previously prepared base, including mixing in a suitable hot mix plant of appropriate capacity not less than 200 tonnes/hour, laying and rolling with a smooth wheeled roller, finished to required level and grades.	Sqm	18,000.00				
10.16	503	**Tack Coat on Bituminous surfaces** Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 to 0.30 kg per sqm on the prepared bituminous surface cleaned with mechanical broom.	Sqm	27,000.00				
		Total of Bill no. 10						

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-11	ROB							
11.01	304	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, backfilling with the approved material.	Cum	3,473.00				
11.02	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M15 Using batching plant transit mixer & Concrete pump	Cum	151.00				
11.03	1100 & 1700	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. Pile diameter-1200 mm	Lm	3,389.00				
11.04	1100, 1500 &1700	Cement Concrete for Reinforced Concrete in Pile Cap complete as per Drawing and Technical Specification RCC Grade M35 using batching plant & Concrete pump	Cum	2,553.00				
11.05	500, 1700 & 220	Providing and laying in position Plain/Reinforced Cement Concrete in Sub-structure including centering & shuttering but excluding Reinforcement complete as per Drawings and Technical Specifications using batching plant & Concrete pump -(Height up to 5m)						
a)		RCC M35	Cum	1,790.00				
b)		RCC M40	Cum	216.00				
c)		RCC M45		201.00				
11.06	1500, 1600, 1700 & 2300	Providing and laying in position cast-in-situ reinforced cement concrete in super-structure including centering & shuttering but excluding Reinforcement complete as per drawing and Technical Specification using batching plant & Concrete pump -(height 5m to 10m)						
a)		RCC M35	Cum	911.00				
b)		RCC M40	Cum	1,744.00				
11.07	1500, 1600, 1700 & 2300	Furnishing and Placing Reinforced/ Prestressed cement concrete in super-structure including centering & shuttering but excluding Reinforcement complete as per drawing and Technical Specification using batching plant & Concrete pump -(height 5m to 10m)						
a)		PSC M50	Cum	229.00				
11.08	1600	Supplying, fitting and placing TMT (Fe 500D) Grade HYSD bar reinforcement in foundation/ sub-structure and super-structure complete as per drawing and technical specifications						
a)		In Foundation	tonne	629.00				
b)		In Sub Structure	tonne	375.00				
c)		In Super Structure	tonne	267.00				

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-11	**ROB**							
11.09	1200 & 1900	Providing structural steel for super-structure complete as per drawing and technical specifications	tonne	2,211.00				
11.10	1800	High tensile steel wires/strands including all accessories for stressing, stressing operations and grouting complete as per drawing and Technical Specifications	tonne	11.00				
11.11	500, 516 & 2700	Providing 65 mm thick wearing course (Type-2) consisting of 40 mm thick bituminus concrete overlaid with 25mm thick mastic asphalt in deck slab after applying Tack coat with paving grade bitumen meeting the requirements given in MORTH Specification Table 500-39, Table 500-40, Table 500-41, prepared by using mastic cooker and laid to required level and slope after cleaning the surface, including providing antiskid surface with bitumen precoated fine grained hard stone chipping of 9.5 mm nominal size at the rate of 0.005cum per 10 sqm and at an approximate spacing of 10 cm center to center in both directions, pressed into surface when the temperature of surfaces not less than 100 deg. C, protruding 1 mm to 4 mm over mastic surface, all complete as per clause 816 of Technical Specification.) in deck slab after applying prime coat complete as per drawings and technical specifications section 500 and 2700 or as directed by Engineer.	Sqm	7,147.00				
11.12	2705	Drainage Spouts complete as per drawing and Technical specification	No.	204.00				
11.13	2000	Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or unreinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel/fabricated structural steel, metal and elastomer elements to be as per IRC: 83 part-I & II respectively and other parts conforming to BS: 5400, section 9.1 & 9.2 and clause 2006 of MoRTH Specifications complete as per drawing and approved Technical Specifications.						
A		**Span - 10m - Solid Slab**						
i)		Free - V143 Tone : HL14.30 Tone	No.	6.00				
ii)		Transversely Guided - V143 Tone : HL20.00 Tone	No.	6.00				
iii)		Metallic Guide - HT 33 Tone	No.	3.00				
iv)		PIN - HL 59.50 Tone : HT 33 Tone	No.	3.00				
B		**Span - 20m - RCC Girder**						
i)		Free - V117.50 Tone	No.	5.00				
ii)		Longitudanal Guided - V145.00 Tone : HT 54 Tone	No.	2.00				
iii)		Transversely Guided - V117.50 Tone : HL 26 Tone	No.	5.00				

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-11	**ROB**							
iv)		PIN - V145 Tone : HL 26 Tone : HF 54 Tone	No.	2.00				
C		**Span - 24.m/25m - PSC Girder**						
i)		Free - V113.00 Tone	No.	9.00				
ii)		Longitudanal Guided - V110.00 Tone : HT 52 Tone	No.	3.00				
iii)		Transversely Guided - V129.50 Tone : HL 25 Tone	No.	9.00				
iv)		PIN - V142.50 Tone : HL 25 Tone : HF 52 Tone	No.	3.00				
D		**Bow string 45.400**						
i)		Free, V235 Ton	No.	6.00				
ii)		Transverse guided, V235Ton : HL80.00 Ton	No.	6.00				
iii)		Longitudinal guided,V235.00 Ton : HT 70 Ton	No.	6.00				
iv)		PIN - ,HL80.00 Ton : HT 70 Ton	No.	6.00				
E		**Span - 36.90m - Composite Girder**						
i)		Free - V136 Tone	No.	4.00				
ii)		Longitudanal Guided - V122 Tone : HT52.50Tone	No.	1.00				
iii)		Transversely Guided - V136 Tone : HL 20.5 Tone	No.	4.00				
iv)		PIN - V 122.50 Tone : HL 205Tone : HT 52.5Tone	No.	1.00				
F		**Bow string 63.48m**						
i)		Free - V 474 Tonne	No.	1.00				
ii)		Longitudanal Guided - V 474 Tonne	No.	1.00				
iii)		Transversely Guided - V 474 Tonne	No.	1.00				
iv)		PIN - V 474 Tonne	No.	1.00				
G		**Span - 25.00m - Composite Girder**						
i)		Free - V 130.00 Tonne	No.	28.00				
ii)		Longitudanal Guided - V130.00 Tonne	No.	7.00				
iii)		Transversely Guided - V130.00 Tone	No.	24.00				
iv)		PIN - V 130.00 Tonne	No.	6.00				
11.14	2700	PCC M15 Grade levelling course below approach slab complete as per drawing and Technical Specification	Cum	60.00				
11.15	1500, 1600, 1700 & 2704	Reinforced Cement Concrete of grade M 30 in approach slab including reinforcement and formwork complete as per drawing and Technical specification	Cum	120.00				

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-11	**ROB**							
11.16	811	Provision of a Reinforced cement concrete M40 crash barrier at bridge deck and approaches to the structures, constructed with Reinforced Cement Concrete with TMT (Fe 500D) Grade HYSD reinforcement conforming MoRTH specifications and as per details given in IRC-5 (fig -5b) including dowel bars 25 mm dia,450mm long at expansion joints filled with premoulded asphalt filler board etc. and approved drawing and at locations as directed by the Engineer, all as specified Crash Barrier for bridge as per details given in IRC-5 (fig-5,b)(Area-0.243 Sqm / Meter, single face)	Lm	1,361.00				
11.17	2607	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 authorised representative ensuring compliance to the manufacturer's instructions for installation.	Lm	300.00				
11.18	2604	Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & Technical Specification.	Lm	24.00				
11.19	IRC - 7	Providing and painting with Synthetic enamel paints of approved quality on bridges with bridge no. and span arrangements complete as per IRC - 7, 1971 .	No.	10.00				
11.20	3100	Construction of Reinforced Earth retaining structures together with construction of selected granular material in layers,assembling and erection of reinforcing elements and placing of cement concrete facia panels and all associated components and including sub-soil investigations and ground improvement as per Technical Specifications.	Sqm	61,496.00				
11.21	3106.7	Provision of an reinforced cement concrete crash barrier with friction slab at the approaches to bridge structure, constructed with M-40 grade concrete with TMT (Fe 500D) Grade HYSD reinforcement confirming to IRC:112 and as per dimensions in the approved drawing and at locations directed by the engineer, all as specified (Area -0.185 sqm/Meter) Below friction slab and (1.032 sqm./meter) Crash Barrier with Friction slab	Lm	8,940.00				
11.22		Providing and placing in position downtake pipe in RE wall approaches to carry run-off water to ground level as directed by the Engineer.	Lm	6,012.00				
11.23	803	Painting on concrete surface 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 sqm.	Sqm	3,226.00				
11.24		**Staircase**						

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)								
BOQ Item No.	**Reference to MoRT&H/Tech. Specification**	**Description of Items**	**Unit**	**Quantity**	**Rate (INR)**		**Amount (INR)**	
					In Fig.	**In Words**	**In Fig.**	**In Fig.**
BILL No.-11	**ROB**							
i)	304	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, backfilling with the approved material.	Cum	1,300.00				
ii)	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M15 Using batching plant transit mixer & Concrete pump	Cum	52.00				
iii)	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation including centering & shuttering but excluding Reinforcement complete as per Drawing and Technical Specifications. M25 Using batching plant transit mixer & Concrete pump	Cum	137.00				
iv)	1500, 1700 & 2200	Plain/Reinforced Cement Concrete M25 in sub-structure including centering & shuttering but excluding Reinforcement complete complete as per Drawing and Technical Specifications. Using batching plant transit mixer & Concrete pump (Height upto 5m)	Cum	981.00				
v)	1600	Supplying, fitting and placing TMT (Fe 500D) Grade HYSD bar reinforcement in sub-structure complete as per drawing and technical specifications	MT	152.00				
vi)	808	Tubular Steel Railing on Medium Weight Steel Channel (ISMC series) 100 mm x 50 mm Providing, fixing and erecting 50 mm dia steel pipe railing in 3 rows duly painted on medium weight steel channels (ISMC series) 100 mm x 50 mm, 1.2 metres high above ground, 2 m centre to centre, complete as per approved drawings	Rm	1,160.00				
		Total of Bill no. 11						

Improvement /Upgradation of Katihar-Balrampur Road of SH-98 (Ch. 0+000 to Ch. 62+485, L=62.882 km)

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Fig.
BILL No.-12	**DAY WORK**							
12.01		Exacavator, face shovel, or dargline including operator , fuel etc Upto and includeing 1 Cum	hour	150.00				
12.02		Motor grader including operator , fuel etc	hour	60.00				
12.03		Crane - 5 tonne including operator , fuel etc	hour	60.00				
12.04		Diesel Road Roller or Vibratory Compactor upto 10Tonne	hour	60.00				
12.05		Trucks, or Truck tipper,or Truck with mounted water tank or truck with crane for removal of accidental Vehicles (upto 10 tonne)including operator , fuel etc	hour	60.00				
12.06		Labour (semiskilled) for 8 hrs	No.	240.00				
		Total of Bill no. 12						