

**BIHAR STATE HIGHWAYS PROJECT
BID DOCUMENT
FOR
CIVIL WORKS**

**Improvement/Upgradation, Widening and Strengthening of
Manjhway to Ch: 21.88 Km. of Manjhway-Govindpur Road
(SH-103) under Civil work Contract Package No. BSHP-
III(Phase-2)/Pkg-6/SH-103**

**Invitation No. – BSHP-III(Phase-2)/ Pkg-6/SH-103/ 2021-22,
Patna, Dated – 17.02.2022**



BIHAR STATE ROAD DEVELOPMENT CORPORATION LTD.

(A Government of Bihar Undertaking)

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ASIAN DEVELOPMENT BANK

**Improvement/Upgradation, Widening and Strengthening of Manjhway to Ch: 21.88 Km section of Manjhway-
Govindpur Road (SH-103) Under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-6/SH-103)**

SUMMARY SHEET

Sl. No.	Bill No.	Description	Amount (INR)	
			In Figure	In Word
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	Day work		
Total Amount (Bill No. 01 to 11)				
Provisional sum @ 13% on "A"				
Total Amount of Bill No.-01 including Provisional Sum				

BILL OF QUANTITIES

**Improvement/Upgradation, Widening and Strengthening of Manjhway to Ch: 21.88 Km section of Manjhway-Govindpur Road (SH-103) Under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-6/SH-103)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-1 SITE CLEARANCE AND DISMANTLING								
1.01	201	<p>Cleaning and Grubbing Road Land Cleaning & 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.</p>	Ha	20.54				
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 above 300 mm to 600 mm	No.	29.00				
		b) Girth above 600 mm to 900 mm	No.	15.00				
		c) Girth above 900 mm to 1800 mm	No.	50.00				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-1 SITE CLEARANCE AND DISMANTLING								
		d) Girth above 1800 mm	No.	4.00				
1.03		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 machineries 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 above 300 mm to 600 mm	No.	112.00				
		c) Girth above 600 mm to 900 mm	No.	58.00				
		d) Girth above 900 mm to 1800 mm	No.	191.00				
		f) Girth above 1800 mm	No.	25.00				

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					In Fig.	In Words	In Fig.	In Words
BILL No.-1 SITE CLEARANCE AND DISMANTLING								
1.04	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	151.00				
		b) Plain Concrete/ Reinforced Cement Concrete structures including clearing, straightening & cutting of bars and separating them out from RCC/PSC.						
		I) PCC/RCC	Cum	5598.00				
		c) Kilometer stone	No.	20.00				
		d) Hectometer stone / Guard Post	No.	120.00				
		e)Dismantling of guard rails	Rm	152.00				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-1 SITE CLEARANCE AND DISMANTLING								
1.05	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	6186.00				
1.06	202	Credit towards salvage value of dismantled materials from rigid pavements and structures as per Technical Specification Clause 202.						
		a) Brick/ Stone Masonry in cement mortar	Cum	151.00				
		b) PCC/RCC	Cum	2799.00				
		c) Kilometer Stone	No.	20.00				
		d) Hectometer Stone	No.	120.00				
		e) Guard Rails	Rm	152.00				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-1 SITE CLEARANCE AND DISMANTLING								
1.07	202	Credit towards salvage value of dismantling of Flexible pavements per Technical Specification Clause 202.						
		a) Bituminous Course	Cum	2474.40				
		Total of Bill no. 1						

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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-2 EARTHWORKS								
2.01	301	<p>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.</p>						
		(a) All type of soil	Cum	1,23,425.00				
2.02	305.4.3	<p>Scarifying the existing granular road surface to a depth of 50 mm and disposal of scarified material within all lifts and leads . By Mechanical Means using Motor Grader</p>	Sqm	61859.00				
2.03	305	<p>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.</p>	Cum	2,70,894.24				

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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-2 EARTHWORKS								
2.04	305	Construction of Embankment with Material Deposited from Roadway Cutting. Construction of embankment with approved material deposited at site from Roadway cutting and excavation from drain and foundation of the structures,graded and compacted to meet requirement of table 300-2, complete as per Technical Specifications Clause 305	Cum	30,099.36				
2.05	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	1,60,371.00				
		Total of Bill no. 2						

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
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, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with front end loader at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401	Cum	67,438.80				
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. Laying Using Mechanical Paver	Cum	33,766.00				
		Total of Bill no. 3						

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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-4 BITUMINOUS COURSE								
4.01	502	Providing and applying bituminous prime coat (cationic Bitumen Emulsion SS1 Grade conforming to IS: 8887) on prepared surface of granular base including clearing of road surface and spraying primer at the rate of mentioned in Table 500-3 of Technical Specification using mechanical means.	Sqm	1,35,063.00				
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) On granular surface treated with primer	Sqm	1,29,823.00				
		b) On bituminous surface	Sqm	1,29,823.00				
4.03	505	Dense Graded Bituminous Macadam Grading 2 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	13,480.40				

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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
4.04	507	Bituminous Concrete Grading 2 Providing and laying bituminous concrete with higher capacity batch type hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder at the rate mentioned 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	5,193.60				
		Total of Bill no. 4						

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-5 CEMENT CONCRETE PAVEMENT								
5.01	601	<p>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.</p>	Cum	4,236.00				
5.02	602	<p>Cement Concrete Pavement Construction of un-reinforced, dowel jointed, plain cement concrete pavement over a prepared sub base with approved grade cement @ 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. .</p>	Cum	6,976.00				
		Total of Bill no. 5						

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
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	6,714.00				
6.02	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.	Cum	314.00				
6.03	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. Using Batching plant and concrete pump						
		a) PCC M15 Grade	Cum	475.00				
		b) PCC M20 Grade	Cum	1,434.00				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-6 CROSS DRAINAGE WORK - CULVERT								
6.04	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. RCC M25 Using batching plant transit mixer & Concrete pump	Cum	514.00				
6.05	1600	Providing & fixing in position thermomechanically treated (TMT) Fe 500 grade HYSD reinforcement bars in foundations, substructures, superstructure etc. complete as per drawings and Technical Specifications Section 1600.						
		Complete for Box cell	MT	55.83				
6.06	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	240.00				
6.07	1500, 1600, 1700 & 2704	PCC M15 Grade levelling course below approach slab complete as per drawing and Technical Specification	Cum	120.00				
6.08	IRC 7	Providing and painting with Synthetic enamel paints of approved quality on culverts with culvert no. and span arrangements as per IRC - 7, 1971 .	No.	68.00				
6.09	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	501.00				

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					In Fig.	In Words	In Fig.	In Words
BILL No.-6 CROSS DRAINAGE WORK - CULVERT								
6.10	2706	Providing weep holes in Brick masonry/Plain/Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC/PVC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing face. Complete as per drawing and Technical Specifications	No.	220.00				
6.11	2500	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	1,541.00				
6.12	2505.00	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	186.00				
6.13	2705	Drainage Spouts complete as per drawing and Technical specification	No.	44.00				
6.14	2504	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	Cum	341.00				
6.15	2900, 1300, 1400 & 1700	Laying Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Single Row/Multiple 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 including excavation, protection works, backfilling, concrete and masonry works in head walls and parapets .						

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					In Fig.	In Words	In Fig.	In Words
BILL No.-6 CROSS DRAINAGE WORK - CULVERT								
		a) 1200 mm dia-Single Row	Lm	812.50				
6.16	2500	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification	Cum	171.00				
6.17	2703, 1500, 1600 & 1700	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.	Rm	67.00				
6.18	2605(v)	Providing & fixing 20 mm thick compressible fibre board in expansion joint complete as per drawing & Technical Specification.	sqm	69.00				
		Total of Bill no. 6						

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					In Fig.	In Words	In Fig.	In Words
BILL No.-7 BRIDGES								
7.01	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	949.00				
7.02	305, IRC 78	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. all complete as per Drawing and Technical Specifications clause 305, IRC 78. Granular Material	Cum	589.00				
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	80.00				
7.04	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation including cantering and shuttering complete as per Drawing and Technical Specifications.						
		a) M-15 Grade	Cum	69.00				
7.05	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation including cantering and shuttering but excluding steel reinforcement complete as per Drawing and Technical Specifications. M35 Using batching plant transit mixer & Concrete pump	Cum	291.00				

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					In Fig.	In Words	In Fig.	In Words
BILL No.-7 BRIDGES								
7.06	1500,1600,1700 & 2200	Plain Cement Concrete/ Reinforced Cement Concrete for substructure complete including cantering and shuttering but excluding steel reinforcement as per drawings and Technical Specifications Sections 1500, 1700 and 2200 Using batching plant transit mixer & Concrete pump (Height upto 5m)						
		a) M35 Grade	Cum	106.00				
7.07	1500, 1600,1700 & 2300	Furnishing and Placing Reinforced/ Prestressed cement concrete M-35 in super-structure including cantering and shuttering but excluding steel reinforcement as per drawing and Technical Specification Using batching plant transit mixer & Concrete pump (Height upto 5m)	Cum	335.00				
7.08	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, complete as per approved drawings and technical specifications.	Lm	78.00				
7.09	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	25.00				
7.10	1500, 1600, 1700 & 2704	PCC M15 Grade levelling course below approach slab complete as per drawing and Technical Specification	Cum	13.00				
		Providing & fixing in position thermomechanically treated (TMT) Fe 500 grade HYSD reinforcement bars in foundations, substructures, superstructure etc. complete as per drawings and Technical Specifications Section 1600 or as directed by Engineer.						
7.11	1600	a) In foundation	MT	29.00				

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BILL No.-7 BRIDGES								
		b) In substructure	MT	13.00				
		c) In super structure	MT	45.00				
7.12	2000	Providing and Laying Tar paper bearing on abutments/ piers as bearing for receiving RCC work in superstructure as per drawing and Technical Specifications	Sq.m	36.00				
7.13	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	36.00				
7.14	2705	Drainage Spouts complete as per drawing and Technical specification	No.	12.00				
7.15	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 face. Complete as per drawing and Technical Specifications	No.	111.00				

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**Improvement/Upgradation, Widening and Strengthening of Manjhway to Ch: 21.88 Km section of Manjhway-Govindpur Road (SH-103) Under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-6/SH-103)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-7 BRIDGES								
7.16	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	334.00				
		Total of Bill no. 7						

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-8 TRAFFIC SIGNS, MARKING AND OTHER APPURTENANCES								
8.01	304, 800, 802, 1500, 1600, 1700, 2100 & 2903	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 including excavation, levelling, concreting, Reinforcement/Steel & erection of Gantry.						
		Overhead sign gantry	No.	2.00				
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	2,640.00				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-8 TRAFFIC SIGNS, MARKING AND OTHER APPURTENANCES								
8.03	807 IRC-25	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.	109.00				
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.	4.00				
		b) Ordinary Kilometer stone (precast)	No.	18.00				
		c) Hectometer Stone (precast)	No.	88.00				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-8 TRAFFIC SIGNS, MARKING AND OTHER APPURTENANCES								
8.05	801	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.	66.00				
		b) 80cmx 60cm Rectangular (Informatory Sign Boards)	No.	66.00				
		c) 90 cm high Octagon (STOP Sign)	No.	38.00				
		d) 60cm x 45 cm rectangular (SH Marker)	No.	4.00				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-8 TRAFFIC SIGNS, MARKING AND OTHER APPURTENANCES								
		e) 60 cm Circular (Mandatory Sign Boards)	No.	40.00				
		f) 1200x900mm	No.	4.00				
		g) 1200x1800mm	No.	2.00				
		h) 900x300mm (Hazard Marker)	No.	2.00				
		Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous/Road Surface						
8.06	800, IRC 35	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 including lane/centre/edge line/Transverse marking/Zebra Crossing/Arrows marking etc.	Sqm	7,293.00				

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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-8 TRAFFIC SIGNS, MARKING AND OTHER APPURTENANCES								
8.07	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.	2,188.00				
8.08	806	Road Delineators Supplying and installation of object/ Hazard Markers , 80-100 cm high above ground level, 75 mm dia circular reflectorised panels at the top, buried or pressed into the ground and conforming to IRC-79 and the drawings.	No.	123.00				
Total of Bill no. 8								

**Improvement/Upgradation, Widening and Strengthening of Manjway to Ch: 21.88 Km section of Manjway-Govindpur Road (SH-103) Under BSHP-III
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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-9		DRAINAGE & PROTECTION WORKS						
9.01	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. For Drain and Retaining wall	Cum	19,306.00				
9.02	1500, 1700 & 2500	Plain/Reinforced Cement Concrete in Open Foundation including cantering and shuttering complete as per Drawing and Technical Specifications. M15 Using batching plant transit mixer & Concrete pump	Cum	1,023.00				
9.03	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in sub-structure including cantering and shuttering complete excluding Reinforcement as per Drawing and Technical Specifications. M20 Using batching plant transit mixer & Concrete pump (Height upto 5m)	Cum	853.00				
9.04	1500, 1700 & 2100	Plain/Reinforced Cement Concrete in Open Foundation including cantering and shuttering complete excluding Reinforcement as per Drawing and Technical Specifications. M25 Using batching plant transit mixer & Concrete pump	Cum	4,099.00				
9.05	2706	Providing weep holes in Brick masonry/Plain/Reinforced concrete abutment, wing wall/ return wall with 100 mm dia AC/PVC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing face. Complete as per drawing and Technical Specifications	No.	3,518.00				

**Improvement/Upgradation, Widening and Strengthening of Manjway to Ch: 21.88 Km section of Manjway-Govindpur Road (SH-103) Under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-6/SH-103)**

BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-9		DRAINAGE & PROTECTION WORKS						
9.06	1600	Supplying, fitting and placing TMT (Fe-500) grade HYSD bar reinforcement in foundation/ sub-structure/Drain complete as per drawing and technical specifications	MT	274.00				
9.07	2504	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	Cum	5,677.00				
9.08	305, 2500 IRC-78	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification	Cum	2,839.00				
9.09	1500, 1700 & 2500 IRC SP-42	Providing & Laying Plain cement concrete M-15 grade in drainage chute on slope as per drawing and Technical Specifications sections 1500, 1700 and 2500	Lm	1,892.00				
9.10	1500, 1700 & 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.	No.	264.00				
		Total of Bill no. 9						

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**Improvement/Upgradation, Widening and Strengthening of Manjhway to Ch: 21.88 Km section of Manjhway-Govindpur Road (SH-103) Under BSHP-III
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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-10 MISCELLANEOUS								
10.01		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	27.00				
10.02		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	78.00				
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.	33.00				
10.04		Providing passenger shelters for busbays complete as per drawing and Technical Specifications Clause A-1.	No.	6.00				
10.05		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	10.00				

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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-10 MISCELLANEOUS								
10.06		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				
10.07		Relocation / Enhancement of the Shrines / temples as per EMP and direction of Engineer.	Each	3.00				
10.08		Monitoring of Environmental Parameters as per EMP and as directed by Engineer.						
	(a) Air	Sample	15					
	(b) Noise	Sample	15					
	(c) Water	Sample	19					
	(d) Soil	Sample	8					
10.09		Construction of Chabutara (platform) of size 10x10x3 feet made of B/W and plastered and as per direction of Engineer.	No.	5.00				

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BOQ Item No.	Reference to MoRT&H/Technical Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-10 MISCELLANEOUS								
10.10	121	Supply of additional prints of coloured photographs of approved size as per Technical Specification Clause 121.	No.	65.00				
		Total of Bill no. 10						

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description of Items	Unit	Total Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL No.-11 DAY WORK								
11.01		Exacavator, face shovel, or dargline including operator , fuel etc Upto and includeing 1 Cum	hour	44.00				
11.02		Motor grader including operator , fuel etc	hour	35.00				
11.03		Crane - 5 tonne including operator , fuel etc	hour	31.00				
11.04		Diesel Road Roller or Vibratory Compactor upto 10Tonne	hour	39.00				
11.05		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	53.00				
11.06		Labour (semiskilled) for 8 hrs	No.	61.00				
		Total of Bill no. 11						

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