

Volume - II

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

**Improvement/Upgradation, Widening and Strengthening of
Baisi-Bahadurganj-Dighalbank Road (SH-99) under Civil work
Package No. BSHP-III(Phase-2)/Pkg-2/SH-99**

**Invitation No. – BSHP-III(Phase-2)/ Pkg-2/SH-99/ 2021-22,
Patna, Dated - 17.02.2022**



BIHAR STATE ROAD DEVELOPMENT CORPORATION LTD.

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ASIAN DEVELOPMENT BANK

SUMMARY SHEET

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Park Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

S No.	Bill No.	Description	Amount (INR)	
			In Figure	In Words
1	Bill No-01	Site Clearance and Dismantling		
2	Bill No-02	Earthwork		
3	Bill No-03	Granular Sub - Base and Base Course		
4	Bill No-04	Bituminous Course		
5	Bill No-05	Cement Concrete Pavement		
6	Bill No-06	Culverts		
7	Bill No-07	Bridges		
8	Bill No-08	Traffic Signs, Markings and other Appurtenances		
9	Bill No-09	Drainage and Protection works		
10	Bill No-10	Miscellaneous		
11	Bill No-11	Day work		
		Total Amount of Bill No.-01 to Bill No. -11 (A)		
		Provisional sum @ 13% on "A"		
		Total Amount of Bill No.-01 including Provisional Sum		

BILL OF QUANTITIES

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
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	51.62				
1.02(i)	201	Cutting of trees, making into logs including removal of stumps and roots of trees girth above 300 mm, 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 lift & leads.						
	(a)	Above 300mm up to 600mm	No.	979				
	(b)	Above 600mm up to 900mm	No.	1419				
	(c)	Above 900mm up to 1800mm	No.	2007				
	(d)	Above 1800mm	No.	348				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
1.02 (ii)		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) Above 300mm up to 600mm	No.	979				
		(b) Above 600mm up to 900mm	No.	1419				
		(c) Above 900mm up to 1800mm	No.	2007				
		(d) Above 1800mm	No.	348				
		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.						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
1.03		(a) Plain Concrete/ Reinforced Cement Concrete structures including clearing, straightening & cutting of bars and separating them out from RCC/PSC.						
		(i) PCC	Cum	5212.89				
		(ii) RCC	Cum	849.62				
		(b) Brick/ Stone Masonry in cement mortar	Cum	1062.52				
		(c) Stone Pitching	Cum	5040.00				
		(d) Dry brick pitching or brick soling	Cum	1800.00				
		(e) Guard rails	Meter	120.00				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
		(f) Edging Kerbs and Gutters etc.	Meter	32.00				
		(g) Kerb Stone	Meter	400.00				
		(h) Barbed wire fencing/wire mesh fencing including posts, foundations, back filling etc.	Meter	220.00				
		(i) 5th kilometer stone	No.	13				
		(j) Ordinary Km stone	No.	50				
		(k) Hectometer stones	No.	260				
		(l) Hume Pipe						
		(i) Upto 600 mm dia	Meter	13				
		(ii) Above 600 mm to 900 mm dia	Meter	17				
1.04	202	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	25525.20				
		(b) Granular Course	Cum	53662.75				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
1.05	202	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials with all lifts & leads, stacking serviceable and unserviceable materials separately	Cum	1633.00				
	202	Credit towards salvage value of dismantled materials from rigid pavements and structures as per Technical Specification Clause 202.						
		(a) i) PCC/Cement Concrete Pavement	Cum	5212.29				
		ii) RCC	Cum	850				
		(b) Brick/ Stone Masonry in cement mortar	Cum	1063				
		(C) Stone Pitching	Cum	5040				
		(d) D. brick pitching or brick soling	Cum	1800				
		(e) Guard rails	Meter	120				
		(f) Edging Kerbs and Gutters etc.	Meter	32				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
1.06		(g) Kerb Stone	Meter	400				
		(h) Barbed wire fencing/wire mesh fencing including posts, foundations, back filling etc.	Meter	220				
		(i) 5th kilometer stone	Nr	13				
		(j) Ordinary Km stone	Nr	2				
		(k) Hectometer stones	Nr	260				
		(l) Hume Pipe						
		1. Upto 600 mm dia	Meter	13				
		2. Above 600 mm to 900 mm dia	Meter	17				
		Total of Bill no. 1						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
Bill No. 2 EARTH WORK								
2.01	301	Excavation in Soil using Hydraulic Excavator and Tipplers with Disposal. Excavation for roadwork in soil with hydraulic excavator including cutting and loading in tipplers, 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.						
		(a) All type of soil	Cum	3,92,727.51				
2.02	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. By Mechanical Means using Motor Grader	Sqm	2,400.00				
2.03	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	2,67,560.46				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
2.04	305	Construction of Embankment with Material Deposited from Roadway Cutting. Construction of embankment with approved material with all lifts and leads, 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	1,01,214.28				
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	2,93,649.67				
2.06	305	Compacting original ground supporting sub-grade Loosening, leveling and compacting original ground supporting embankment. & Recompacting : Loosening, leveling and compacting original ground supporting embankment to facilitate placement of first layer of embankment, 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	92,793.81				

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(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
2.07	408	Filling in Median and Island with Soil Taken from Borrow Areas Filling in median and Island above road level with approved material brought from borrow pits, spread, sloped and compacted as per clause 408	Cum	676.18				
		Total of Bill no. 2						

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(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL NO. 3 GRANULAR SUB-BASE 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	1,93,272.440				
		For reuse of GSB material obtained from dismantling of existing pavement materials	Cum	15,337.590				
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	1,50,082.830				
		Total of Bill no. 3						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL NO. 4 BITUMINOUS COURSES								
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 cleaning of road surface and spraying primer at the rate of mentioned in Table 500-3 of Technical Specification using mechanical means.	Sqm	5,79,323.24				
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.						
		i. On granular surface	Sqm	5,79,323.24				
		ii. On bituminous surface	Sqm	7,19,533.24				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
4.03 (i)	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 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. 505 and Table 500-10 complete in all respects.	Cum	57,924.28				
4.03 (ii)	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 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. 505 and Table 500-10 complete in all respects.	Cum	3,505.25				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	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 CRMB 60) 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	25,977.25				
		Total of Bill no. 4						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	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	9,936.00				
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 content not to be 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.</p>	Cum	14,428.80				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
5.03	1500, 1600, 1700 & 2100	<p>Transition Section between Rigid and Flexible Pavement</p> <p>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.</p>	Cum	144.00				
		Total of Bill no. 5						

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(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL NO. 6 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 Clause 304 & 2903.	Cum	2,834.72				
6.02	305, 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 Clause 305, IRC 78 & 2200.						
		Granular material	Cum	1,841.20				
6.03	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	273.21				
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. Using Batch plant and concrete pump						
		i) M-20 Grade	Cum	2,040.67				
		ii) M-20 Grade	Cum	461.41				

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(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
6.05	1500, 1700 & 2200	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)						
		M-20 Grade	Cum	1,138.79				
6.06	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						
		RCC Grade M-25	Cum	40.78				
6.07	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						
		(i) In Foundation / Sub Structure	tonne	28.98				
		(iii) In Super Structure	tonne	38.42				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
6.08	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.	Sqm	239.31				
6.09		Providing and Laying Tar paper bearing on abutments/ piers as bearing for receiving RCC work in superstructure as per drawing and Technical Specifications.	Sqm	32.64				
6.10	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 : 2 H towards drawing force, Complete as per drawing and Technical Specifications	No.	526.00				
6.11	2500	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	162.01				
6.12	2500	Providing and laying stone boulder pitching on slopes laid over prepared filter media including boulder apron laid in front of toe of embankment complete as per drawing and technical specifications section 2500.	Cum	226.16				
6.13	2703, 1500, 1600 & 1700	Construction of Cast In-Situ RCC railing of M-30 grade for parapet walls complete as per approved drawings and Technical Specifications 2703, 1500, 1600 & 1700.	Lm	44.84				

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BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
6.14	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 .						
		(i) 900 mm Dia	Lm.	132.50				
		(i) 1000 mm Dia	Lm.					
		(ii)1200 mm Dia	Lm.	1,665.00				
6.15		Laying Reinforced Cement Concrete Pipe NP4 / Prestressed Concrete Pipe on First Class Bedding in Double Row. Providing ,Laying and jointing Reinforced cement concrete pipe NP4/prestressed concrete pipe for culverts on first class bedding of granular material in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets .						
		(i) 900 mm Dia	Lm.	21.25				
		(i) 1000 mm Dia	Lm.	7.50				
		(ii) 1200 mm Dia	Lm.	1,263.00				
6.16	2705	Providing and fixing drainage spouts as per drawings and Technical Specifications Clause 2705.	No.	42.00				
6.17	2805	Providing and Laying Epoxy bonding of new concrete to old concrete Complete as per Technical Specifications Clause 2805.	Sqm	196.13				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
6.18	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.	514.00				
6.19	2600	Providing and laying of asphaltic plug joint to provide for horizontal movement of 25 mm and vertical movement of 2 mm, depth of joint varying from 75 mm to 100 mm, width varying from 500 mm to 750 mm (in traffic direction), covered with a closure plate of 200mm x 6mm of weldable structural steel conforming to IS: 2062, asphaltic plug to consist of polymer modified bitumen binder, carefully selected single size aggregate of 12.5 mm nominal size and a heat resistant foam caulking/backer rod, all as per approved drawings and specifications.	Lm	180.00				
6.20	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	17.73				
		Total of Bill no. 6						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					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.						
		In All type of Soil.	Cum	9,672.79				
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.	Cum	6,328.40				
7.03	305 & 2500 IRC 78	Providing and laying of filter media with granular materials/stone crushed aggregate satisfying the requirements laid down in clause 2504.2. of Technical Specifications to a thickness of not less than 600 mm with smaller size towards the soil and larger 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	1,245.94				
7.04	1500, 1700 & 2100	Providing & laying plain cement concrete complete for levelling course as per drawing and technical specification section 1500, 1700 & 2100.						
		M-15 Grade	Cum	777.91				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
7.05	1100 & 1700	Providing Bored Cast-in-situ vertical piles including initial and routine tests complete excluding steel reinforcement as per drawings and technical specifications sections 1100 and 1700						
		M-35 Grade (Pile Diameter-1200 mm)	Meter	3,447.60				
7.06	1100,1500, 1700 & 2100	Providing and laying Reinforced Cement Concrete in Pile caps including centering and shuttering but excluding steel Reinforcement complete as per Drawings and Technical Specifications Section 1100,1500, 1700 and 2100 (Using batching plant, Transit Mixture and concrete pump)						
		Grade M-35	Cum	2,526.69				
7.07	1500, 1700 & 2100	Plain Cement Concrete/ Reinforced Cement Concrete for foundation complete including centering and shuttering but excluding steel reinforcement as per drawings and Technical Specifications Section 1500, 1700 and 2100 (Using batching plant, Transit mixture and concrete pump)						
		i) M-20 Grade	Cum	806.44				
		ii) M-35 Grade	Cum	408.85				
	1500, 1700 & 2200	Plain Cement Concrete/ Reinforced Cement Concrete for substructure complete including centering and shuttering but excluding steel reinforcement as per drawings and Technical Specifications Sections 1500, 1700 and 2200 (Using batching plant, Transit Mixture and concrete pump)						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
7.08		i) Grade M-20	cum	2,256.160				
		ii) Grade M-30	cum	1,564.270				
		iii) Grade M-35	cum	16.890				
7.09	1500, 1700, 1800 & 2300	Prestressed Cement Concrete in Superstructure complete including centering and shuttering but excluding steel reinforcement as per drawing and technical specifications 1500, 1700, 1800 and 2300 (Using batching plant, Transit Mixture and concrete pump)						
		ii) Grade M-25	cum	1,490.950				
		iii) M-25T-Beam &slab	cum	432.790				
7.10	1600	Providing & fixing in position thermomechanically treated (TMT) Fe 500 grade HYSD reinforcement bars in foundations, substructures, superstructure etc. complete as per drawing and Technical Specifications Section 1600 or as directed by Engineer.						
		(i) in foundation	tonne	1,057.760				
		(ii) in substructure	tonne	246.760				
		(iii) in super structure	tonne	334.790				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
7.11	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.	Sqm	6,465.02				
7.12	2705	Providing and fixing Drainage Spouts complete as per drawing and Technical specification	m	216.00				
7.13	2000	Providing and Laying Tar paper bearing on abutments/piers as bearing for receiving RCC work in superstructure as per drawing and Technical Specifications	sqm	73.89				
	2000	Supplying, fitting & fixing of bearings in position true to line & level, complete as per drawings and Technical Specifications MORT&H 2006 Part 11 CS						
		POT cum PTFE Bearings						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
7.14		POT cum PTFE Bearing						
		(i) Free Bearing	Tonne	11,440.00				
		(ii) Metallic Guided Bearing	Tonne	679.00				
		(iii) Pin Bearing	Tonne	679.00				
7.15	2607	(i) Strip Seal Expansion Joint (Providing and laying of strip seal expansion joint catering to maximum horizontal movement upto 70 mm, complete as per approved drawings and Technical Specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.)	Lm	279.21				
	2600	(ii) Asphaltic Plug joint (Providing and laying of asphaltic plug joint to provide for horizontal movement of 25 mm and vertical movement of 2 mm, depth of joint varying from 75 mm to 100 mm, width varying from 500 mm to 750 mm (in traffic direction), covered with a closure plate of 200mm x 6mm of weldable structural steel conforming to IS: 2062, asphaltic plug to consist of polymer modified bitumen binder, carefully selected single size aggregate of 12.5 mm nominal size and a heat resistant foam caulking/backer rod, all as per approved drawings and specifications)	Lm	223.08				
7.16	1500, 1600, 1700, 2700, 509	Provision of a Reinforced cement concrete crash barrier at bridge deck and approaches to the structures, constructed with Reinforced Cement Concrete including 15% 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)						
		M-40 Grade	Lm	775.07				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
7.17	1500, 1700 & 2704	PCC M15 Grade levelling course below approach slab complete as per drawing and Technical Specification	Cum	114.51				
7.18	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						
		M-30 grade	Cum	251.69				
7.19	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 force. Complete as per drawing and Technical Specifications	No.	2,680.00				
7.20	2500	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification	Cum	362.58				
7.21	2500	Providing and laying stone boulder pitching on slope laid over prepared filter media including boulder apron laid in front of toe of the embankment complete as per drawing and technical specifications section 2500.	Cum	1,044.17				
7.22	2805	Eproxy bonding of new concrete to old concrete Complete as per Technical Specifications Clause 2805.	Sqm	896.83				
7.23	2806	Providing and inserting nipples with approved fixing compound after drilling holes for grouting as per Technical specifications including subsequent cutting/removal and sealing of the hole as necessary of nipples after completion of grouting with Cement/Epoxy.	No.	1,594.00				
7.24	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.	22.00				
7.25	09 & 1700	Construction of cement concrete L type kerb in M-20 grade including foundation all complete as per drawing and technical specifications Clause 409, 1700	Lm	774.36				
7.26	709 of IRC:78	Providing steel liner 8mm thick for piles including fabricating and setting out as per detailed drawing and technical specification.	tonne	37.36				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
7.27	1900&2703	Providing,fixing,erecting and painting 65 NB GI pipe on concrete crash barrier as per approved drawing and Technical Specification Section1900,2703	Lm	775.07				
Repairing and Rehabilitation of Existing Bridges and Structures								
7.28	2800	Repair /Reconstruction of railing/ parapet / crash barrier to match the existing in part or entire length of structures as per site condition.	Lm	505.55				
7.29	2605	Filler type Expansion Joint (Providing and laying of Filer type expansion joint, complete as per approved drawings and Technical Specifications to be installed by the manufacturer/supplier or their authorised representative ensuring compliance to the manufacturer's instructions for installation.) Dismantling of Filler type Expansion Joint and disposal of dismantled material with all lifts & leads.	Lm	438.20				
7.30	2809	Removal of existing asphaltic wearing coating consisting of 50mm thick asphaltic concrete laid over 12mm thick mastic asphalt including disposal with all lift and leads as per technical specification clause no. 2809.	sqm	3,962.25				
7.31	2500	Providing and laying stone /boulder pitching 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 2500.	cum	766.00				
7.32	2804	Applying epoxy mortar over leached, honey combed and spalled concrete surface and exposed steel reinforcement complete as per Technical Specification clause no 2804	sqm	46.80				
7.34		Providing and laying Pointing of Masonry in Cement Mortar 1:3 complete as per drawings and Technical Specifications Section .	Sqm	4.80				
Total of Bill no. 7								

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL NO. 8 Traffic Signs, Markings and other Appurtenances.								
8.01	800	Providing and fixing reinforced cement concrete M-20 grade boundary stones, hectometer, km and 5th km Stones including excavation, foundation concrete in M-15 Grade, centering and shuttering and reinforcement including all inscriptions etc. complete as per drawings and Technical Specifications Section 800						
		i)5th Kilometer stone(precast)	No.	13				
		ii)ordinary Kilometer stone (precast)	No.	55				
		iii) Hectometer Stone (precast)	No.	261				
	807	iv) Boundary Pillar Providing cement concrete M20 grade boundary pillar of standard design as per IRC:21 fixed in position including finishing and shuttering but excluding painting.	No.	653				
8.02	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 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.						
		(i) Lane/ Centre line/edge line/transverse marking/ Zebra Crossings etc.	Sqm	4993				
		(ii) Rumble Strips (10mm height at centre, 200mm wide placed at 300mm centre to centre as per drawing)	Sqm	2660				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
8.03	IRC 35	Directional Arrows, lettering etc. as per Drg. No.61 of MoRTH "Type Design for Inter-sections on National Highways".	Sqm	343				
8.04	801 & IRC 67	Providing and fixing of retro- reflectorised cautionary, mandatory and inforatory 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 Aluminium 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 Section 12 of IRC-67.						
		i) 90 cm equilateral triangle	No.	158				
		ii) 60 cm circular	No.	104				
		iii) 80 cm x 60 cm rectangular	No.	57				
		iv) 60cm x 45 cm rectangular	No.	8				
		v) 50 cm high octagon	No.	57				
8.05		Providing, fabricating and fixing in position Overhead Gantry structure fabricated with structural steel complete as per Drawings and Technical Specification Section 800.						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
i)	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	69.34				
ii)	1500,1700,& 2100	b)Providing and laying Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications. M-15 using batching plant & Concrete pump						
		M-15 Grade	Cum	4.60				
iii)	1500,1700,& 2100	c) Providing and laying Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications. M-20 using batching plant & Concrete pump	Cum	11.02				
iii)	1600	d) Supplying, fitting and placing TMT (Fe 500) Grade HYSD bar reinforcement in foundation/sub-structure complete as per drawing and technical specifications	tonne	3.04				
iv)	802	e) Providing and erecting over head 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						
	A	Truss and Vertical Support	Tonne	12.00				
	B	Aluminium Alloy Plate for Over Head Sign	Sqm	155.00				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
8.06	801	Providing and erecting(including PCC M15 foundation and support system) direction and place identification retro reflectorized sign board as per IRC-67 including all materials, installing at site with complete job as per MORTH Specification.						
		(i) Upto 0.9 sqm sign boards with double iron post 75mm x 75mm x 6mm	Sqm	314.62				
		(ii) Above 0.9 sqm sign boards with double iron post 75mm x 75mm x 6mm	Sqm	605.66				
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-15 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	Meter	22995.30				
8.08	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	26270.94				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
8.09	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.	3575.00				
8.10	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	5194.00				
8.11	800	Painting Two Coats on New Concrete Surfaces						
		Providing and applying 2 coat after filling the surface with synthetic enamel paint to unplastered concrete surface after cleaning the surface of dirt, dust, oil, grease, efflorescence etc.	Sqm	7463.94				
8.12	809	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 drawing and technical specification clause no 809.	Metre	16540.00				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
8.13	806	Road Delineators (i) Supplying & installation of Road Delineators , 80-100 cm high above ground level, 75 mm dia circular reflectorised panels at the top, burried or pressed into the ground and conforming to IRC-79 & drawings	No.	3500.00				
	806 & IRC-79	Hazard Markers (ii) Supplying & installation of Roadw way Indicators/ Hazard Markers , 80-100 cm high above ground level painted black & white in 15cm wide stripsfitted with 80x100mm rectangular reflectorised panels at the topand conforming to IRC-79 & drawings	No.	1150.00				
8.14	1500 & 1700	Providing & fixing M-20 grade cement concrete guard post complete as per drawings & Technical Specifications.	No.	430.00				
		Total of Bill no. 8						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bani Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL NO. 9 DRAINAGE AND 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.	43,791.36				
9.02	1500, 1700 & 2500	Providing & Laying Plain cement concrete M-15 grade below drain/ Retaining Wall as per drawing and Technical Specifications sections 1500, 1700 and 2500	Cum	4,160.37				
9.03		RCC Grating of size 60cm x 60 cm as per drawing and direction of Engineer in-charge	No.	1,666.00				
9.04	1500, 1700 & 2100	Providing & Laying RCC M-20 in drain complete including centering and shuttering complete excluding Reinforcement as per drawing and Technical Specification Section 1500, 1700 & 2100	Cum	22,528.50				
9.05	1600	Supplying, cutting and placing TMT (Fe-500) grade HYSD bar reinforcement in foundation/ sub-structure/Drain complete as per drawing and technical specifications	tonne	1,239.07				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bani Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
9.06	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	14,348.40				
9.07	2500	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	27,761.64				
9.08	2500	Dry stone flooring with boulders of not less than 40 kg each in weight, hand packed with surface levelled off to the correct section with hammer dressing as necessary on the ground including filling the gaps with quarry spalls and ordinary sand complete including the cost of supply of all materials, labour, lead, lift, tools, plants, crossing of tracks and the like as per drawing and technical specification as directed by Engineer	Cum	935.17				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bani Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
9.09	1500, 1700 & 2500	Providing & Laying Plain cement concrete M-15 grade in drainage chute on slope as per drawing and Technical Specifications sections 1500, 1700 and 2500 and as directed by Engineer	Lm	4,957.26				
9.10	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.	997.00				
9.11		Construction of RCC Retaining / CC Toe Wall as per Technical specification						
i	304	Earth work in excavation of foundation for structure complete including setting out construction of shoring & bracing, removal of stumps & other detritious 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	4,761.36				
ii	1000, 1500	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, 2100 and 2200. (Using batching plant, Transit Mixture and concrete pump)						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bani Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
ii. a		PCC M-15	Cum	472.20				
ii. b		PCC M-20	Cum	934.56				
iii. c		RCC M-30	Cum	2,795.00				
iii	1600	Providing & fixing in position thermomechanically treated (TMT) Fe 500 grade HYSD reinforcement bars in Retaining wall etc. complete as per drawings and Technical Specifications Section 1600 or as directed by Engineer.	tonne	209.67				
iv	305 & 2500 IRC 78	Providing and laying of filter media with granular materials/stone crushed aggregates satisfying the requirements laid down in clause 2.04.2.2. 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 completed to a firm condition complete including all material, labour, equipment carriage etc. as per drawing and Technical Specification. Clauses 300, 2504 & IRC 78.	Cum	1,062.00				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Barui Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
v	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 force. Complete as per drawing and Technical Specifications	No.	1,860.00				
vi	305, IRC 78	Providing and Laying Back filling behind Retaining walls 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.	Cum	252.00				
		Total of Bill no. 9						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
A. Bus Bay and Junction Improvement								
10.01	401	Granular Sub Base						
		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	9992.28				
10.02	406	Wet Mix Macadam						
		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	8115.62				
10.03	502	Prime Coat						
		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	35597.46				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
10.04	503	Tack Coat						
		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..						
		i. On granular surface	Sqm	35597.46				
		ii. On bituminous surface	Sqm	56616.14				
10.05	505	Dense graded Bituminous Macadam						
		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 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 wheel, 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	4033.61				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
		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 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. 505 and Table 500-10 complete in all respects.		814.00				
		Bituminous Concrete						
10.06	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 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	2101.84				
B. Others								
10.07		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	36.00				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
10.08		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	Vehicle Month s.	144.00				
10.09		Providing and maintaining vehicles for employer including providing driver, POL etc. complete as per technical Specifications Clause 124 (Approx. 1500 km per month), AC Passenger Cars (indigo/Dezire or Equivalent) not more than three year old at any time	Vehicle Month s.	48.00				
10.10		Providing passenger shelters for busbays complete as per drawing and Technical Specifications Clause A-1.	No.	21.00				
10.11	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.	1338.00				
10.12	121	Supply of additional prints of coloured photographs of approved size as per Technical Specification Clause 121.	No.	108.00				
10.13		Relocation/enhancement of hand pumps of 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	142.00				
10.14		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.						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
		All type of Well	Each	1.00				
10.15	Additional Specification A-5	Providing and placing high mast light complete as directed by the Engineer.	No..	3.00				
10.16	Additional Specification A-4	Providing and placing Single Arm Lighting complete as directed by the Engineer.	No..	277.00				
10.17	IRC-98-1997	Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings.						
		Triple Row for three utility services	Lm	505.00				
10.18		(i)Relocation / Enhancement of the Shrines / temples as per EMP and direction of Engineer.	Sqm	631.80				
		(ii) Relocation / Enhancement Govt /Public Building as per EMP and direction of Engineer.	Sqm	793.00				
		Relocation / Enhancement of the Religious Structure Compound Wall as per EMP and direction of Engineer.	RM	450.00				

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
		Relocation / Enhancement of the Community Property Compound Wall as per EMP and direction of Engineer.	RM	691.00				
10.19		Monitoring of Environmental Parameters as per EMP and as directed by Engineer.						
		(a) Air	Sample	100.00				
		(b) Water	Sample	30.00				
		(c) Noise	Sample	20.00				
		(d) Soil	Sample	30.00				
		Total of Bill no. 10						

**Improvement/Upgradation, Widening and Strengthening of Baysi-Bahadurganj-Dighal Bank Road (SH-99) under BSHP-III
(Contract Package No. BSHP-III (Phase-2)/Pkg-2/SH-99)**

BOQ Item No.	Reference to MoRT&H/Tech. Specification	Description	Unit	Quantity	Rate (INR)		Amount (INR)	
					In Fig.	In Words	In Fig.	In Words
BILL NO. 11 Day work								
11.01		Excavator, face shovel, or dragline including operator , fuel etc Upto and including 1 Cum	hour	180				
11.02		Motor grader including operator , fuel etc	hour	150				
11.03		Crane - 5 tonne including operator , fuel etc	hour	120				
11.04		Diesel Road Roller or Vibratory Compactor upto 10Tonne	hour	165				
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	225				
11.06		Labour (semiskilled) for 8 hrs	nos.	255				
		Total of bill no. 11						