

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
1.00	BILL NO. 1 : SITE CLEARANCE AND DISMANTLING				
1.01	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, including removal and disposal of top organic soil not exceeding 150 mm in thickness complete as per drawing and Technical Specification No. 201 and in accordance to the MISP and C-ESMP	Hectare	6.400		
1.02	Dismantling of flexible pavements of Bituminous courses and disposal of dismantled materials upto a lead of 1000 meters, stacking serviceable and unserviceable materials separately including all labour, hire charges of all machineries complete as per drawing and Technical Specification No. 202 and in accordance to the MISP and C-ESMP	Cum	2,529.600		
1.03	Dismantling of flexible pavements of Granular courses and disposal of dismantled materials upto a lead of 1000 meters, stacking serviceable and unserviceable materials separately including all labour, hire charges of all machineries, the recovery of dismantled stone aggregates shall be made @ rate Rs. 600/- per cum for a minimum quantity of 2,976 cum from total dismantled granular layer on pro rata basis as per increase or decrease in the quantity of actual work carried out. the recovery shall be done on pro-rata basis from contractor each running bill along with this item. Rate of Stone Recovery is Exclusive of Royalty as applicable, complete as per drawing and Technical Specification No. 202 and in accordance to the MISP and C-ESMP	Cum	7,440.000		
1.04	Dismantling of Plain cement concrete in existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per drawing and Technical Specification No.. 202 and Section 2800 and in accordance to the MISP and C-ESMP	Cum	532.000		
1.05	Dismantling of Stone / brick structures in existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per drawing and Technical Specification No.. 202 and Section 2800 and in accordance to the MISP and C-ESMP	Cum	1,803.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
1.06	Dismantling of Reinforced concrete in existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per drawing and Technical Specification No.. 202 and Section 2800 and in accordance to the MISIP and C-ESMP	Cum	1,830.000		
1.07	Dismantling of Guide Rails / Fencing / Kerb / Gutters / Pipes in existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per drawing and Technical Specification No.. 202 and Section 2800 and in accordance to the MISIP and C-ESMP	Lm	173.000		
2.00	BILL NO. 2 : EARTHWORK				
2.01	Roadway excavation and drainage in all kinds of soil in all heights and depths in all kinds of soil by manual /mechanical means including saturated soil comprising of ordinary soil , soft rocks, hard rocks, chiseling/wedging out of rock and other intermediate classification of soil, setting out true to the required line, grade width cutting and trimming of side slopes and level as shown on the drawings including dressing trimming and compacting the cut formation in accordance with requirement of lines grades and cross fall, cross sections and cut material transportation to the embankment location within all lifts and leads complete as per drawing and Technical Specification No. 301 and all cut material except stone (which can be recovered) will be the property of contractor and disposal of excess material & un-usable material shall be disposed with lead upto 1000m in accordance to the MISIP and C-ESMP. The recovery of stone shall be made @ rate Rs. 500/- per cum for a minimum quantity of 18,103 cum from total excavated quantity on pro rata basis as per increase of decrease in the quantity of actual earthwork carried out. the recovery shall be done on pro-rata basis from contractor each running bill along with this item. Rate of Stone Recovery is Exclusive of Royalty as applicable.	Cum	1,20,690.500		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
2.02	Construction of Embankment with approved material obtained from borrow pits in layers not exceeding 250mm loose thickness, spreading, breaking clods, removal of roots and other organic materials to the required line, grade and cross section including watering, consolidation by vibratory roller with desired field density not less than 95% of maximum dry density including all leads, all lifts, loading, unloading, all labour, hire charges of all machineries etc., complete as per table no. 300-2 and complete as per drawing and Technical Specification No. 305 and in accordance to the MISP and C-ESMP	Cum	1,479.600		
2.03	Construction of sub-grade with suitable material deposited at site from roadway and drainage excavation and foundation of other structures graded and compacted to to required slope and compacted to meet requirement of table no. 300-2 in compacting it by mechanical means after adding water to its OMC, so as to achieve 97% , complete as per drawing and Technical Specification No. 305 and in accordance to the MISP and C-ESMP.	Cum	37,262.600		
2.04	Construction of hard shoulders with required CBR (more than 20%) material obtained from approved borrow pits with all lifts & leads including excavation, transporting to site, spreading, grading to required level & Camber and compacting using vibratory roller and as per MORTH Specification no. 408. and in accordance to the MISP and C-ESMP.	Cum	3,075.600		
2.05	Construction of raised median / Island fill above road level with approved material deposited at site from roadway cutting and excavation for drain and foundation of other structures, spread graded and compacted with all leads and lifts complete as per MORTH Technical specification no. 305 & 408.and in accordance to the MISP and C-ESMP.	Cum	420.000		
2.06	Construction of embankment with approved material deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of Table 300-2 complete as per specifications. Which includes, watering charges & compaction by vibratory roller) complete as per drawing and Technical Specification No. 305 and in accordance to the MISP and C-ESMP.	Cum	32,386.600		
2.07	Scarifying bituminous course along with premix carpet / surface dressing by power roller attached with scarified without disturbing the base and stacking the debris including cost of all labour charges and machineries and including disposal of scarified material with in all lifts and lead upto 1000 meters complete as per specifications and in accordance to the MISP and C-ESMP.	Sqm	5,100.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
2.08	Loosening and re-compaction of existing subgrade and shoulder ground upto a level of 500 mm below the sub-grade level, watered, graded and compacted in layers to meet requirement of table 300-2 for sub-grade construction and in accordance to the MISP and C-ESMP.	Cum	14,880.000		
2.09	Transportation and disposal of surplus material/ un-suitable material/debris with all leads and lifts beyond initial lead of 1000m which is already covered in above item no. 2.01 and in accordance to the MISP and C-ESMP.	Cum	54,122.500		
2.10	Compaction of the disposed surface area using adequate quantity of water at the disposal location by road roller and other required men and machinery in accordance to the MISP and C-ESMP.	Cum	2,706.200		
2.11	Striping and storing of top soil by road side at specified internal and reapplication on embankment slopes, cut slopes and other areas in localities where the available embankment material is not conducive to plant growth and disposal of unsuitable soil with all lifts and leads as per Technical specifications clauses 301 and 305 and in accordance to the MISP and C-ESMP.	Sqm	2,400.000		
3.00	BILL NO. 3 : SUB BASE & BASE COURSE				
3.01	Construction of granular sub-base (GSB) with approved materials conforming to Grading -1 (Table -400-1) with all lifts and by mixing in a mechanical mixed plant at OMC, complete as per drawing and Technical Specification No. 401 and in accordance to the MISP and C-ESMP.	Cum	12,575.200		
3.02	Construction of wet mix Macadam (WMM) base course and profile correcting course with approved material 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 drawing and Technical Specification No. 406 and in accordance to the MISP and C-ESMP.	Cum	19,454.900		
4.00	BILL NO. 4 : BITUMINOUS COURSE & RIGID PAVEMENT				
4.01	Providing and applying primer coat with bitumen emulsion (SS1 grade) 7 kg to 10 kg/10 sqm (Slow Setting)on prepared surface of granular Base with low porosity (WMM or WBM) including clearing of road surface and spraying primer at the rate of minimum 0.6 kg/sum with pressure distributor and as per drawing and Technical Specification relevant Section-502 and in accordance to the MISP and C-ESMP.	Sqm	77,819.600		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
4.02	Providing and applying tack coat with bitumen(RS-1 grade) emulsion @ 2.5 kg to 3 kg/10 sqm over granular surface using emulsion pressure distributor on the prepared granular surface cleaned with mechanical broom and as per drawing and Technical Specification relevant sections of Section-503 and in accordance to the MISP and C-ESMP.	Sqm	82,219.600		
4.03	Providing and applying tack coat with bitumen(RS-1 grade) emulsion @ 2.0 kg to 3.0 kg/10 sqm over bituminous surface using emulsion pressure distributor on the prepared bituminous surface cleaned with mechanical broom and as per drawing and Technical Specification relevant sections of Section-503 and in accordance to the MISP and C-ESMP.	Sqm	92,721.600		
4.04	Providing and laying dense bituminous macadam with hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder, transporting the hot mix to work site, laying with sensor paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction (Only cement will be used as filler) for Grading 1(75-100mm thickness)with VG 30 grade bitumen, and complete in all respects as per drawings and Technical Specifications Section-505 and in accordance to the MISP and C-ESMP.	Cum	5,043.400		
4.05	Providing and laying bituminous concrete with hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder, transporting the hot mix to work site, laying with a sensor paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects (Only cement will be used as filler) for Grading 2 (30-40 mm thickness) with VG 30 grade bitumen and as per drawing and Technical Specifications Section- 507 and in accordance to the MISP and C-ESMP.	Cum	2,781.700		
5.00	BILL NO. 5 : CULVERTS				

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
5.01	Earthwork in excavation of foundation of structures in all kinds of soil such as pick work, jumper work, soft and hard rock including chilling, wedging out of rock and saturated soil and their intermediate classification in all heights and depths includes dressing, trimming, compacting the cut formation in accordance with requirement with lines grades as per drawing and Technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material including all lifts and leads. The recovery of stone shall be made @ rate Rs. 500/- per cum for a minimum quantity of 272 cum from excavated quantity on pro rata basis as per increase or decreases in the quantity of actual earthwork carried out, the recovery shall be done on pro-rata basis from contractor each running bill along with this item, complete as per drawings and Technical Specifications No. 304 and in accordance to the MISP and C-ESMP.. Rate of Stone Recovery is Exclusive of Royalty as applicable	Cum	1,916.300		
5.02	Providing and laying back filling independent retaining wall ,median wall & box type abutment wall or any other area with selected imported granular materials of approved quality complete as per drawings and Technical Specifications No. 305 and Appendix-6 of IRC:78-2014 and in accordance to the MISP and C-ESMP.	Cum	1,433.800		
5.03	Providing and laying filter media behind abutment, median wall, Independent retaining wall and return wall complete as per drawings and Technical Specification No. 305 and Section 2500 and in accordance to the MISP and C-ESMP..	Cum	946.200		
5.04	Providing and laying in position Plain Cement Concrete grade M15 for pipe bedding and cradle concrete, leveling course for culvert foundations, head wall, below approach slab etc. including formwork complete as per drawing and Technical Specifications Sections , 1500, 1700, 1900 and 2100. and in accordance to the MISP and C-ESMP..	Cum	881.000		
5.05	Providing and laying in position Plain Cement Concrete grade M20 for abutments foundation, headwalls , curtain wall, floor protection etc. including formwork complete as per drawing and Technical Specifications Nos 1500, 1700 and 2100 and in accordance to the MISP and C-ESMP.	Cum	1,885.900		
5.06	Providing and laying reinforced cement concrete for box culverts including centering and shuttering all complete as per drawing and Technical Specifications Nos 1500, 1700, 2100, 2200 & 2300. (M30 Grade Concrete) and in accordance to the MISP and C-ESMP.	Cum	900.700		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
5.07	Providing & fixing in position High Yield Strength Deformed (TMT) Fe 415 grade reinforcement bars in culverts etc. complete as per drawings and Technical Specifications Section 1600 and in accordance to the MISP and C-ESMP.	MT	71.300		
5.08	Providing and laying in position 65 mm thick wearing coat consisting of 40 mm thick bituminous concrete overlaid with a 25mm thick layer of mastic asphalt over deck slab after applying prime coat complete as per drawings and Technical Specifications section Nos. 502, 507, 516 and Section 2700 and in accordance to the MISP and C-ESMP.	Sqm	63.000		
5.09	Providing and laying Reinforced Cement Concrete M30 grade using crushed stone aggregates in Approach slab including reinforcement etc. complete as per drawings and Technical Specification Sections 1500, 1600, 1700 and 2704 and in accordance to the MISP and C-ESMP.	Cum	3.500		
5.10	Providing and laying in position Reinforced Cement Concrete grade M40 in crash barriers including reinforcement & 150mm dia HDPE Pipe, including providing bituminous fibber board and polysulphide joint filler at expansion joints/gap locations complete as per drawings and Technical Specifications section Nos. 811 and Sections 1500, 1600, 1700 and 2700 and in accordance to the MISP and C-ESMP.	Lm	142.500		
5.11	Providing, laying and jointing NP-4 600 mm Dia Reinforced Cement Concrete Hume Pipe conforming to the requirements of IS :458 including testing of joints all complete as per drawings and Technical Specifications No 2900 and IRC : SP 13-2004 and in accordance to the MISP and C-ESMP..	Lm	10.000		
5.12	Providing, laying and jointing NP-4 1000 mm Dia Reinforced Cement Concrete Hume Pipe conforming to the requirements of IS :458 including testing of joints all complete as per drawings and Technical Specifications No 2900 and IRC : SP 13-2004 and in accordance to the MISP and C-ESMP..	Lm	337.500		
5.13	Providing and laying 300mm thick concrete (M15) including 150mm thick flat stone Rigid Apron embedded in complete as per drawings and Technical specification and in accordance to the MISP and C-ESMP..	Cum	108.000		
5.14	Providing and laying Pitching on slopes laid over prepared filter media, Dry boulder toe wall complete as per drawing and Technical specifications and as per relevant sections of Section 2500 and in accordance to the MISP and C-ESMP..	Cum	24.000		
5.15	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification and as per relevant sections of Section 2500 and in accordance to the MISP and C-ESMP..	Cum	12.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
5.16	Providing and laying in position Plain Cement Concrete grade M15 for toe wall and curtain wall including formwork complete as per drawing and Technical Specifications Nos 1500, 1700, 1900 and 2100 and in accordance to the MISIP and C-ESMP..	Cum	48.700		
5.17	Providing and laying Flexible Apron complete as per drawing and Technical Specifications section No. 2503 and in accordance to the MISIP and C-ESMP.	Cum	112.400		
5.18	Providing and fixing weep holes in abutments, median wall, independent retaining wall or any other earth retaining structure complete as per drawings and Technical Specifications section No. 2706 and in accordance to the MISIP and C-ESMP..	No.	743.000		
5.19	Providing and fixing in position 20 mm thick remoulded 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 and in accordance to the MISIP and C-ESMP..	Sqm	19.600		
5.20	Providing and fixing in position drainage spouts in bridges complete as per drawings and Technical Specifications section No. 2705 and in accordance to the MISIP and C-ESMP.	No.	26.000		
5.21	Providing and painting with Synthetic enamel paint of approved quality for Crash Barrier and as directed by Project Manager and in accordance to the MISIP and C-ESMP.	Sqm	860.200		
5.22	Painting of Structure No. and span arrangement on bridge ends including all labour, materials, all leads and lifts etc. complete as per drawing, Technical Specifications Section 800 and in accordance to the MISIP and C-ESMP..	No.	86.000		
5.23	Providing and laying in position Plain Cement Concrete grade M15 for Chute Arrangements including formwork complete as per drawing and Technical Specifications Sections 1500, 1700, 1900 and 2100 and in accordance to the MISIP and C-ESMP..	Cum	192.500		
5.24	Providing and Construction of Stone masonry work in cement mortar 1:6 in foundation complete as drawing and Technical Specification for chute arrangements on downstream side for culvert locations at height and any depth complete as per drawings and specifications section 1400 and in accordance to the MISIP and C-ESMP..	Cum	188.400		
6.00	BILL NO. 6 : BRIDGES				

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
6.01	Earthwork in excavation of foundation of structures in all kinds of soil such as pick work, jumper work, soft and hard rock including chilling, wedging out of rock and saturated soil and their intermediate classification in all heights and depths includes dressing, trimming, compacting the cut formation in accordance with requirement with lines grades as per drawing and Technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material including all lifts and leads. The recovery of stone shall be made @ rate Rs. 500/- per cum for a minimum quantity of 186 cum from excavated quantity on basis as per increase or decreases in the quantity of actual earthwork carried out, the recovery shall be done on pro-rata basis from contractor each running bill along with this item, complete as per drawings and Technical Specifications No. 304 and in accordance to the MISP and C-ESMP, Rate of Stone Recovery is Exclusive of Royalty as applicable	Cum	1,291.200		
6.02	Providing and laying Plain Cement Concrete M15 grade in leveling course below open foundations, pile cap, approach slabs, floor protection works and annular filling around foundation in rock including shuttering complete as per drawings and Technical Specifications Nos, 1100, 1500, 1700 and 2700 and in accordance to the MISP and C-ESMP..	Cum	61.000		
6.03	Providing and laying in position Reinforced Cement Concrete of M 35 grade in Open Foundations, Raft foundation, and pile cap excluding reinforcement including centering and shuttering complete as per drawings and Technical Specifications Nos 1100, 1500, 1700, 2100 and in accordance to the MISP and C-ESMP..	Cum	395.800		
6.04	Providing and laying in position Reinforced Cement Concrete of M35 grade in Substructure excluding reinforcement including centering and shuttering complete as per drawings and Technical Specifications Nos 1500, 1700, 2200 and in accordance to the MISP and C-ESMP..	Cum	291.000		
6.05	Providing and laying in position Reinforced Cement Concrete of M35 grade in Superstructure excluding reinforcement including centering and shuttering complete as per drawings and Technical Specifications Nos 1500, 1700, 2300 and in accordance to the MISP and C-ESMP..	Cum	81.700		
6.06	Providing, cutting, bending fabrication and erection of Composite structural steel girders in superstructure complete as per drawings and Technical Specification Section and in accordance to the MISP and C-ESMP.	MT	43.300		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
6.07	Providing & fixing in position High Yield Strength Deformed (TMT) Fe 500 grade reinforcement bars in Foundations complete as per drawings and Technical Specifications Section 1600 and in accordance to the MISP and C-ESMP..	MT	47.500		
6.08	Providing & fixing in position High Yield Strength Deformed (TMT) Fe 500 grade reinforcement bars in Sub-structure complete as per drawings and Technical Specifications Section 1600 and in accordance to the MISP and C-ESMP..	MT	43.700		
6.09	Providing & fixing in position High Yield Strength Deformed (TMT) Fe 500 grade reinforcement bars in superstructures complete as per drawings and Technical Specifications Section 1600 and in accordance to the MISP and C-ESMP..	MT	16.400		
6.10	Providing and laying in position 65 mm thick wearing coat consisting of 40 mm thick bituminous concrete overlaid with a 25mm thick layer of mastic asphalt over deck slab after applying prime coat complete as per drawings and Technical Specifications section Nos. 502, 507, 516 and Section 2700 and in accordance to the MISP and C-ESMP..	Sqm.	542.200		
6.11	Providing and fixing in position bearings true to line and level complete for Free / Pinned bearing of horizontal load carrying capacity in longitudinal direction and transvers direction 360t capacity as per drawings and Technical Specifications Section 2000 and in accordance to the MISP and C-ESMP.	No.	6.000		
6.12	Providing and fixing in position Strip Seal Expansion Joints complete as per drawings and Technical Specifications Section 2600 and in accordance to the MISP and C-ESMP..	Lm	10.400		
6.13	Providing and fixing in position drainage spouts in bridges complete as per drawings and Technical Specifications section No. 2705 and in accordance to the MISP and C-ESMP..	No.	20.000		
6.14	Providing and laying Reinforced Cement Concrete M30 grade using crushed stone aggregates in Approach slab including reinforcement etc. complete as per drawings and Technical Specification Sections 1500, 1600, 1700 and 2704 and in accordance to the MISP and C-ESMP..	Cum	11.900		
6.15	Providing and laying in position Reinforced Cement Concrete grade M40 in crash barriers including reinforcement & 150mm dia HDPE Pipe, including providing bituminous fiber board and polysulphide joint filler at expansion joints/gap locations complete as per drawings and Technical Specifications section No. 811 and Sections 1500, 1600, 1700 and 2700 and in accordance to the MISP and C-ESMP..	Lm	59.700		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
6.16	Providing, fabrication and fixing Structural steel Railing with MS steel vertical post and horizontal steel hollow pipe rail on above the edge of the bridge slab complete finished item of work including materials, labour, fixing position and providing three or more coats of epoxy paint of approved color, make and quality over a coat of epoxy primer complete as per drawings and Technical Specifications Sections 809, 810, 1900 and 2700 and in accordance to the MISP and C-ESMP.	Lm	92.100		
6.17	Providing and fixing weep holes in abutments, median wall, independent retaining wall or any other earth retaining structure complete as per drawings and Technical Specifications section No. 2706 and in accordance to the MISP and C-ESMP..	No.	523.000		
6.18	Providing and laying back filling independent retaining wall ,median wall & box type abutment wall or any other area with selected imported granular materials of approved quality complete as per drawings and Technical Specifications No. 305 and Appendix-6 of IRC:78-2014 and in accordance to the MISP and C-ESMP.	Cum	1,345.200		
6.19	Providing and laying filter media behind abutment, median wall, Independent retaining wall and return wall complete as per drawings and Technical Specifications section No. 305 and Section 2500 and in accordance to the MISP and C-ESMP..	Cum	341.400		
6.20	Providing and laying Pitching on slopes laid over prepared filter media, Dry boulder toe wall complete as per drawing and Technical specifications and as per relevant sections of Section 2500 and in accordance to the MISP and C-ESMP..	Cum	1,171.700		
6.21	Providing and laying Filter material underneath pitching in slopes complete as per drawing and Technical specification and as per relevant sections of Section 2500 and in accordance to the MISP and C-ESMP..	Cum	511.800		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
7.00	BILL NO 7 : DRAINAGE AND PROTECTION WORKS				
7.01	Earthwork in excavation of foundation of structures in all kinds of soil such as pick work, jumper work, soft and hard rock including chilling, wedging out of rock and saturated soil and their intermediate classification in all heights and depths includes dressing, trimming, compacting the cut formation in accordance with requirement with lines grades as per drawing and Technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material including all lifts and leads. The recovery of stone shall be made @ rate Rs. 500/- per cum for a minimum quantity of 4,359 cum from excavated quantity on basis as per increase or decreases in the quantity of actual earthwork carried out, the recovery shall be done on pro-rata basis from contractor each running bill along with this item, complete as per drawings and Technical Specifications No. 304 and in accordance to the MISP and C-ESMP, Rate of Stone Recovery is Exclusive of Royalty as applicable	Cum	32,511.900		
7.02	Providing and laying side drain as per TCS with Plain Cement Concrete M15 grade including shuttering complete as per drawings and Technical Specifications Sections, 1100, 1500, 1700 and 2700 and in accordance to the MISP and C-ESMP..	Cum	1,206.900		
7.03	Providing and laying Plain Cement Concrete M15 grade in leveling course below drain foundation including shuttering complete as per drawings and Technical Specifications Sections, 1100, 1500, 1700 and 2700 and in accordance to the MISP and C-ESMP..	Cum	1,091.100		
7.04	Providing and laying reinforced cement concrete M 25 grade for drain raft, walls and cover including centering and shuttering all complete as per drawing and Technical Specification Clause 1500, 1700, 2100, 2200 & 2300 and in accordance to the MISP and C-ESMP..	Cum	8,036.600		
7.05	Providing & fixing in position High Yield Strength Deformed (TMT) Fe 500 grade reinforcement bars in drain foundation, walls and cover slab complete as per drawings and technical Specifications Section 1600. for RCC drains and in accordance to the MISP and C-ESMP..	MT	562.200		
7.06	Providing and fabrication MS structural Steel Gratings in RCC Drain including fabrication, fixing in position and weather proof coating as per drawing and relevant technical specifications and as directed by the Project Manager and in accordance to the MISP and C-ESMP.	MT	3.900		
7.07	Providing and fabrication MS structural Steel Gratings cover on RCC Drain including fabrication, fixing in position and weather proof coating as per drawing and relevant technical specifications and as directed by the Project Manager and in accordance to the MISP and C-ESMP.	MT	16.200		

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7.08	Providing and laying of a reinforced cement concrete pipe Utility duct of 450 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 complete as per Drawings and Technical Specifications and in accordance to the MISP and C-ESMP.	Lm	200.000		
7.09	Providing, laying and jointing 900mm dia NP-4 Reinforced Cement Concrete pipe for cross drains on junction cross roads conforming to the requirements of IS :458 including testing of joints all complete as per Technical Specifications Sections 2900 and IRC : SP 13-2004. and complete as per Drawings and Technical Specifications and in accordance to the MISP and C-ESMP.	Lm	40.000		
7.10	Providing, laying and jointing 600mm dia NP-4 Reinforced Cement Concrete pipe for cross drains on junction cross roads conforming to the requirements of IS :458 including testing of joints all complete as per Technical Specifications Sections 2900 and IRC : SP 13-2004. and complete as per Drawings and Technical Specifications and in accordance to the MISP and C-ESMP.	Lm	230.000		
7.11	Providing and laying Plain cement concrete of M 15 grade in levelling course for foundation for Breast Wall, retaining walls, toe wall, gabion wall as per drawing and Technical Specifications Section 1500,1700, 2100 & 2200 and in accordance to the MISP and C-ESMP.	Cum	3,093.200		
7.12	Providing and Construction of Stone masonry work in cement mortar 1:6 for Breast Wall /retaining wall complete as drawing and Technical Specification Section 1400 and in accordance to the MISP and C-ESMP.	Cum	4,521.200		
7.13	Providing and Construction of dry stone masonry in breast wall / retaining wall complete as drawing and Technical Specification section 1400 as directed by the project manager and in accordance to the MISP and C-ESMP.	Cum	2,701.300		
7.14	Providing, laying and compacting filter material behind retaining walls / toe wall complete as per drawing and Technical specifications Clauses 305 & 2504 and in accordance to the MISP and C-ESMP.	Cum	5,370.000		
7.15	Providing and laying Plain cement concrete of M 15 grade in for Parapet wall, retaining walls, toe wall etc., as per drawing and Technical Specifications Section 1500,1700, 2100 & 2200 and in accordance to the MISP and C-ESMP.	Cum	754.100		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
7.16	Providing and laying in position Plain Cement Concrete grade M20 for retaining walls / toe wall etc. including formwork complete as per drawing and Technical Specifications Sections , 1500, 1700 and 2100 and in accordance to the MISP and C-ESMP.	Cum	10,951.400		
7.17	Providing and laying M 30 grade Reinforced cement concrete complete for retaining walls / toe wall as per drawing and Technical Specifications Section 1500, 1700, 2100 and 2200	Cum	2,260.300		
7.18	Providing and laying back filling independent retaining wall ,median wall & box type abutment wall or any other area with selected imported granular materials of approved quality complete as per drawings and Technical Specifications No. 305 and Appendix-6 of IRC:78-2014 and in accordance to the MISP and C-ESMP.	Cum	6,397.900		
7.19	Providing, Cutting, Bending and Fixing of TMT reinforcement (TMT bars) Fe 500 for Retaining walls foundation, Structure complete as per Drawings and Technical Specifications Section 1600 and in accordance to the MISP and C-ESMP.	MT	198.200		
7.20	Construction of subsurface drain with Geosynthetic lining of trench & perforated pipe of 100mm internal diameter of PVC, closely jointed, perforations ranging from 3 mm to 6 mm depending upon size of material surrounding the pipe with 150 mm bedding below the pipe and 500 mm cushion above the pipe, cross section of excavation 450 x 750 mm excavated material to be utilised in roadway at site, complete as per technical specification clause 309.	Rmt	500.000		
7.21	Providing and fixing weep holes in retaining walls as per Drawings and Technical Specifications Section 2700 and in accordance to the MISP and C-ESMP..	No..	4,985.000		
7.22	Providing and construction of a gabion structure for retaining earth of required height and width with segments of wire crates divided into 1 m compartments by cross netting, made from 4 mm galvanized steel wire @ 32 kg per 10 Sqm having minimum tensile strength of 300 Mpa conforming to IS:280 and galvanizing coating conforming to IS:4826, woven into mesh with double twist, mesh size not exceeding 100 x 100 mm, filled with boulders with least dimension of 200 mm with all leads and lifts complete as per drawing and Technical specifications and as per relevant sections of Section 2500 and in accordance to the MISP and C-ESMP.	Cum	28,259.500		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
7.23	Shotcreting with approved design concrete mix of cement concrete M25 with minimum cement content not less than 330 kg per cum as per specifications & drawings using 10 mm to 4.76 mm aggregate including preparation of surface cleaning and leveling of the undulations by providing guniting the raw surface with Cement Mortar (1:3) proportion with required thickness where ever required below the concrete shotcrete layers and including providing and fixing of Mild steel wire mesh of square size 20mm with wire diameter of 2.50mm (in the two layers) as per Annexure A-1 of IS 4948-2002 placing of the wire mesh with nailing to keep in position as specified in the drawing including all materials, labor, equipment, raking out and cleaning joints, centering, scaffolding wherever required, curing and all other ancillary operations, drilling of weep holes in hardened concrete etc., complete with all leads and all lifts. etc, required for complete job for 100mm thickness (In two layers of 50mm each) and complete as per the f Stone Recovery is Exclusive of Royalty as applicablelicableetro Reflective Sheeting from the	Sqm	4,975.000		
8.00	BILL NO. 8 : MITIGATION MEASURES AT ASSOCIATED FACILITIES				
8.01	Earthwork in excavation of foundation of structures in all kinds of soil such as pick work, jumper work, soft and hard rock including chilling, wedging out of rock and saturated soil and their intermediate classification in all heights and depths includes dressing, trimming, compacting the cut formation in accordance with requirement with lines grades as per drawing and Technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material including all lifts and leads., complete as per drawings and Technical Specifications No. 304 and in accordance to the MISP and C-ESMP	Cum	300.000		
8.02	Providing, laying and compacting filter material behind retaining walls / toe wall complete as per drawing and Technical specifications Clauses 305 & 2504 and in accordance to the MISP and C-ESMP.	Cum	72.000		
8.03	Providing and laying Plain cement concrete of M 15 grade in leveling course for foundation for retaining walls / toe wall as per drawing and Technical Specifications Section 1500,1700, 2100 & 2200 and in accordance to the MISP and C-ESMP.	Cum	15.000		
8.04	Providing and laying M 30 grade Reinforced cement concrete complete for retaining walls / toe wall as per drawing and Technical Specifications Section 1500, 1700, 2100 and 2200	Cum	145.050		
8.05	Providing and laying back filling independent retaining wall ,median wall & box type abutment wall or any other area with selected imported granular materials of approved quality complete as per drawings and Technical Specifications No. 305 and Appendix-6 of IRC:78-2014 and in accordance to the MISP and C-ESMP.	Cum	199.950		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
8.06	Providing, Cutting, Bending and Fixing of TMT reinforcement (TMT bars) Fe 500 for Retaining walls foundation, Structure complete as per Drawings and Technical Specifications Section 1600 and in accordance to the MISP and C-ESMP.	MT	11.604		
8.07	Providing and fixing weep holes in retaining walls as per Drawings and Technical Specifications Section 2700 and in accordance to the MISP and C-ESMP..	No	120.000		
8.08	Filling, leveling, rolling and compaction in disturbed river bed with earth of approved material deposited at site from already cut and excavated materials from foundation of other structures ,removal of debris coming out from bed made for staging grading and compacted to achieve the bed profile and meet requirement of Table 300-2 and complete as per specifications. Which includes, watering charges & compaction by vibratory roller) MORTH Specification No. 305	Cum	4,050.000		
8.09	Dismantling structures and pavement including disposal of resulting material and / or salvaging useful materials complete as per Technical Specifications Clause 202 (If required and Found damaged) Bitumenious Pavement courses	Cum	130.440		
8.10	Dismantling structures and pavement including disposal of resulting material and / or salvaging useful materials complete as per Technical Specifications Clause 202 (If required and Found damaged) Granular Course	Cum	882.470		
8.11	Dismantling of exsiting PCC Approach slab if required/damaged and as per descretion of Project Manager(CSC)/HPRIDC	Cum	23.625		
8.12	Dismantling of exsiting RCC Approach slab if required/damaged and as per descretion of Project Manager(CSC)/HPRIDC	Cum	47.250		
8.13	Providing and laying in position Plain Cement Concrete grade M15 for leveling course for culvert foundations, head wall, below approach slab etc. including formwork complete as per drawing and Technical Specifications Nos 1500, 1700, 1900 and 2100 and in accordance to the MISP and C-ESMP if required.	Cum	24.300		
8.14	Providing and laying Reinforced Cement Concrete M30 grade using crushed stone aggregates in Approach slab including reinforcement etc. complete as per drawings and Technical Specification Sections 1500, 1600, 1700 and 2704 and in accordance to the MISP and C-ESMP.if required	Cum	47.250		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
8.15	Filling Pot- holes and Patch Repairs with bituminous mix compatible with existing layer including removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per section 503, back filling the pot holes with hot bituminous material as per section 510, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per technical specifications section 3004.2.(For maintenance of road only). if required and as per directions from Project Manager(CSC)/HPRIDC	Sqm	476.000		
8.16	Providing and laying bituminous concrete with hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder, transporting the hot mix to work site, laying with a sensor paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects and as per Technical Specifications Section- 507. (Only cement will be used as filler) for Grading 2 (30-40 mm thickness) with VG 30 grade bitumen .if required and as per directions from Project Manager(CSC)/HPRIDC	Cum	71.400		
8.17	Providing and laying in position 65 mm thick wearing coat consisting of 40 mm thick bituminous concrete overlaid with a 25mm thick layer of mastic asphalt over deck slab after applying prime coat complete as per drawings and Technical Specifications section Nos. 502, 507, 516 and Section 2700. if required and as per directions from Project Manager(CSC)/HPRIDC	Sqm	1,215.000		
9.00	BILL NO. 9 : TRAFFIC SIGNS, MARKINGS & OTHER APPURTENANCES				
9.01	Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 325 mm high in M 20 grade Plain Cement Concrete on M-10 grade foundation 100 mm thick, foundation having 50 mm projection beyond kerb stone, all complete as per drawings and Technical Specifications Clause No. 408. complete as directed by the Project Manager and in accordance to the MISP and C-ESMP.	Rmt	400.000		
9.02	Providing and applying two coats of ready mix water proof exterior paint of approved brand on Concrete Kerb/Crash Barrier surface after through cleaning of surface to give an even shade (Including Primary two Coat) as per specification 803 and IRC:35:2015. Kerb Painting complete as directed by the Project Manager and in accordance to the MISP and C-ESMP.	Sqm	160.000		
9.03	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 and in accordance to the MISP and C-ESMP. for Lane/Centre line/Edge marking/ Traverse marking and any other marking	Sqm	3,744.300		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.04	Providing, laying, rumble strips of 300 mm wide and 5mm thick as traffic calming measures as per drawing at specified intervals with hot applied thermoplastic compound 5mm thick including reflectorising glass beads as per IRC:35, the finished top surface to be level, uniform and free from streaks and holes. complete as directed by the Project Manager and in accordance to the MISIP and C-ESMP..	Sqm	207.900		
9.05	Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical	No.	20.000		
9.06	Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical	No.	26.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.07	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical Specifications clause 801 and as directed by Project Manager and in accordance to the MISP and C-ESMP. for Advance Direction / Destination / Reassurance / Place Identification signs of 1200mm x 750mm</p>	No.	3.000		
9.08	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical</p>	No.	2.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.09	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical Specifications clause 801 and as directed by Project Manager and in accordance to the MISP and C-ESMP. for Route marker signs of rectangular plate of 450mm x 600mm</p>	No.	3.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.10	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical Specifications clause 801 and as directed by Project Manager and in accordance to the MISP and C-ESMP. for Cautionary Sign of Size 600mm (Triangle)</p>	No.	136.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.11	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical Specifications clause 801 and as directed by Project Manager and in accordance to the MISP and C-ESMP. for cautionary signs of Two Chevrons Markings boards with single post at Curve (Size 600x500mm).</p>	No.	214.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.12	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical Specifications clause 801 and as directed by Project Manager and in accordance to the MISP and C-ESMP. for cautionary signs of Thriple Chevron Markings at Curve (Size 2300x600mm).</p>	No.	4.000		
9.13	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical Specifications clause 801 and as directed by Project Manager and in accordance to the MISP and C-ESMP. for Mandatory signs of Circular of size 600mm.</p>	No.	62.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.14	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical Specifications clause 801 and as directed by Project Manager and in accordance to the MISP and C-ESMP. for Mandatory signs of Octagonal of size 750mm.</p>	No.	8.000		
9.15	<p>Providing and fixing Retro-Reflectorised cautionary, mandatory and informatory signs as per IRC:67:2012, reflectorised with micro prismatic grade retro reflectivesheeting of Type-11 as per ASTM D-4956 and as per latest codes specification & fixed over 4 mm thick Aluminium Composite Panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25x25x 3mm MS angle and mounted on 75 mm dia pipe OR 75X75X6MM Mild steel angle of Total height 2.70 M with clear height of not less than 2.10 M from the ground level to the bottom of the Sign board & 60 cm below ground level. The sign post should be painted with one coat of red oxide paint and two coats of synthetic enamel paint of black and white colour with bands of 30 cm height alternatively firmly fixed to the ground by means of foundation with M15 grade cement concrete of 45 cm x 45 cm x 60 cm including cost & conveyance of all materials, equipment, machinery & Labour with all leads and lifts, Loading charges necessary for satisfactory completion of the work. 10 years warranty for Retro Reflective Sheeting from the original sheeting manufacturer, complete as per drawings and Technical</p>	No.	204.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.16	Rigid Retro reflective / Standard Delineator : Providing and fixing of post delineators made of ABS round body fitted with 2 nos 100mm dia high reflective reflectors conforming with IRC 67 2012 and meeting the coefficient of retro reflection values as per ASTM D 4956 Type XI table specification and mounted on MS Pipe of 65mm dia duly powder coated anti-rust and anti theft steel to be installed as per The delineator is meant for application on gaps in median, traffic islands, dangerous bends, roundabouts, narrow bridges etc. as directed by Project Manager and in accordance to the MISP and C-ESMP	No.	214.000		
9.17	Providing and fixing in position for cautionary measures at specified locations with Convex Mirror of standard quality	No.	2.000		
9.18	Supply, fabrication, fixing and erection of supporting structural steel frame for over-head Direction / Advance Information Signboard of required size made out of MS structural steel sections to support the sign board with back support frame of required sizes and up required height above ground level and complete as specified in the drawing, the grade of steel YST 240 shall be used for the steel tubes as per IS 1161 (2014) and anchor bolts shall be class 4.6 and as per IS: 4736 all structural member shall be hot dip galvanized with zinc coating confirm and the including cost of all materials, labour, fabrication, painting, loading, unloading, lead, lift, transportation etc., (civil foundation cost will paid in respective items) complete as per MORTH technical specification clause no 802 and as per approved drawing and as directed by the Project Manager and in accordance to the MISP and C-ESMP.	MT	5.496		
9.19	Supply and fixing of Over-Head Direction / Advance Information Signboard of required size made out of retro reflective sheeting of Cube Corner Micro prismatic grade conforming to IRC-67: 2010 & Type XI standards of ASTM D 4956 . 09 fully covered over 2mm. thick aluminum sheeting (Aluminium sheet shall be fixed to back support frame using 2.3mm 3M VHB adhesive tape or equivalent) . The background color of retro-reflective material shall be in Blue and text shall be in white or as directed by the project manager. complete as per MORTH technical specification clause no 802 and as per approved drawing and as directed by the Project Manager and in accordance to the MISP and C-ESMP.	Sqm	54.000		
9.20	Providing and fixing of road stud 100x 100 mm, die-cast moulded from ASA (Acrylic styrene acrylonitrile) High impact poly styrene or ABS body resistant to minimum support a load of 13635 Kg and Fitted with micro prismatic lens Reflector installed in concrete or asphaltic surface by drilling hole 30 mm upto a depth of 60 mm and bedded in a suitable bituminous grout or epoxy mortar, all as per MORTH latest circulars and as directed by the Project Manager	No.	3,244.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.21	Providing and fixing RCC Hectometer stones complete as per drawing and Technical Specifications clause 804 (including cost of reinforcement, painting and marking)	No.	44.000		
9.22	Providing and fixing RCC Kilometer stones complete as per drawing and Technical Specifications clause 804 (including cost of reinforcement, painting and marking)	No.	8.000		
9.23	Providing and fixing RCC 5th Kilometer stones complete as per drawing and Technical Specifications clause 804 (including cost of reinforcement, painting and marking)	No.	3.000		
9.24	Reinforced cement concrete M15 grade boundary pillars of standard design as per IRC:25-1967, fixed in position including finishing and lettering, marking painting and including cost of reinforcement, complete as directed by the engineer and approved drawings etc., for finished item of work and in accordance to the MISP and C-ESMP.	No.	110.000		
9.25	Providing and fixing M.S. Railing for traffic islands/ median/Footpath including foundation concrete (M-15) and painting with approved paint etc. all complete job as per drawing and Technical Specifications Nos 300, 1500, 1700 & 1900. and in accordance to the MISP and C-ESMP.	Lm	10,630.000		
9.26	Providing and erecting a "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 0.8 m above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m center to center, total 1.80 m high, 1m below ground/road level embeded in foundation of size 0.35x0.35x1.1m with PCC M15, all steel parts and fitments to be galvanized 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 Technical Specifications including cost and conveyance of all materials, equipment, machinery, and labour with all leads and lifts, loading and unloading charges as directed by the engineer and as per approved drawings etc., complete for finished item of work and in accordance to the MISP and C-ESMP.	Lm	1,200.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
9.27	Providing and erecting a Double (Two) Rail "W" metal beam crash barrier comprising of 3 mm thick corrugated sheet metal beam rail, 1.230 m above road/ground level, fixed on ISMC series channel vertical post, 150 x 75 x 5 mm spaced 2 m center to center, total 2.23 m high, 1m below ground/road level embeded in foundation of size 0.35x0.35x1.1m with PCC M15, all steel parts and fitments to be galvanized 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 Technical Specifications including cost and conveyance of all materials, equipment, machinery, and labour with all leads and lifts, loading and unloading charges as directed by the engineer and as per approved drawings etc., complete for finished item of work and in accordance to the MISP and C-ESMP.	Lm	800.000		
10.00	BILL NO. 10 : MISCELLANEOUS & TRAFFIC SAFETY				
10.01	Providing and laying 80 mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design / shape laid in Ordinary Grey Colour & Dark fast colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc, all complete as per directions of Engineer-in-Charge for Light Traffic Areas such as Pedestrian plazas, shopping complexes, ramps, car parks, office driveways, housing colonies, office complexes, rural roads with low volume traffic, farm houses, beach sites, tourist resorts, local authority footways, residential roads, etc., complete for finished item of work and as directed by the Project Manager and in accordance to the MISP and C-ESMP	Sqm	1,000.000		
10.02	Construction of 3.5m wide carriageway temporary diversion and providing traffic safety like temporary barricades with retro reflective taps, sign boards, delineators & blinkers and control where necessary and as per direction of the Engineer including maintenance thereof complete as per drawing and technical specification clause 112.	Lm	1,700.000		
10.03	Providing, laying, spreading and compacting stone aggregates of specific sizes to Water Bound Macadam specification including spreading in uniform thickness, hand packing, rolling with 3 wheeled steel/ vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density. grading -III complete as per Technical Specification section no. 404. for repair of existing road as directed by the Engineer.	Cum	1,362.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
10.04	Construction of Wet Mix Macadam Base Course by providing Coarse graded crushed aggregates (Table 400-13) complete as per Technical Specifications section No. 406. for repair of existing road as directed by the Project Manager and in accordance to the MISP and C-ESMP..	Cum	2,269.000		
10.05	Filling Pot- holes and Patch Repairs with bituminous mix compatible with existing layer including removal of all failed material, trimming of completed excavation to provide firm vertical faces, cleaning of surface, painting of tack coat on the sides and base of excavation as per section 503, back filling the pot holes with hot bituminous material as per section 510, compacting, trimming and finishing the surface to form a smooth continuous surface, all as per technical specifications section 3004.2.(For maintenance of road only).	Sqm	8,250.000		
10.06	Providing and applying tack coat with bitumen (RS-1 grade)emulsion using emulsion pressure distributor on the prepared bituminous / granular surface cleaned with mechanical broom and as per relevant sections of Section-503 '@ 2.0 kg to 2.5 kg/10 Sqm over not primed granular surface or bituminous surface and in accordance to the MISP and C-ESMP..	Sqm	6,600.000		
10.07	Providing and laying renewal coat over existing surface with bituminous concrete with hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder, transporting the hot mix to work site, laying with a sensor paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects and as per Technical Specifications Section- 507. (Only cement will be used as filler) for Grading 2 (30-40 mm thickness) with VG 30 grade bitumen and in accordance to the MISP and C-ESMP.	Cum	198.000		
10.08	Providing and Maintaining Safety barricading during construction with necessary markings, warning lights, sign boards, flags etc. complete as per drawing and technical specification clause A15 and as per the direction of the Project Manager and in accordance to the MISP and C-ESMP..	Lm	1,000.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
10.09	Bus Shelter cum Rain Shelter: Construction RCC framed structure and walls with brick masonry structure and roofing with structural steel truss roofing including fixing in position for bus shelter cum rain shelter of clear plan size 6m x 2.4m of height 3m including RCC framed structure of M25 grade RCC footings, columns, plinth beam and roof & lintel beams, walls with brick masonry and smooth plastering and internal & external approved water proof cement color painting and providing and fabrication of MS structural steel truss roofing and 0.5mm thick galvalume roof sheeting including top corner ridge roof sheets, 0.5mm thick GI or white metal false ceiling, including construction disabled entry ramp with both sides MS railing and entry MS tubular guard rail to prevent stray animal entry complete as per drawing and technical specification and as directed by Engineer and in accordance to the MISIP and C-ESMP (Finished complete Lumpsum rate)	No.	9.000		
10.10	Supply and fixing, pasting over selected objects like W Beam crash barrier, trees girths, crash barriers, retaining walls and any other specified locations with retro reflective sheet of approved brand High Intensity Prismatic Reflective Sheeting 3930 Series with self adhesive sheet complete as per technical specification and as directed by Engineer and in accordance to the MISIP and C-ESMP	Sqm	680.000		
10.11	Providing, installing, commissioning and testing of single Arm street lighting system of 9m height octagonal GI pole with all brackets and fixtures, 150W LED luminaries, pillar box, photo cell timer cum contactor, cabling, earthing and all other necessary accessories and arrangement for making street lighting system complete and functional as shown in drawing and technical specification and as directed by Engineer and in accordance to the MISIP and C-ESMP.	No.	185.000		
10.12	Providing, installing, commissioning and testing of single Arm solar powered lighting system of 10m height GI pole with all brackets and fixtures, 100Watt LED Solar Street Light including all fixtures and fittings, pillar box, photo cell timer cum contactor, cabling, earthing including all incidental civil works and all other necessary accessories and arrangement for making street lighting system complete in functional from approved reputed manufacturer for which source approval shall be obtained from CSC /HPRIDC and as directed by Engineer and in accordance to the MISIP and C-ESMP.	No.	22.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
10.13	Supplying, fixing, testing and commissioning of Highmast Light of 16m height with 6 lights of 400W LED luminaries system, with all brackets, pillar box, photo cell timer cum contactor, power cabling, earthing and all other necessary accessories and arrangement for complete commissioning and functional of Highmast lighting system as shown in drawing and technical specifications and as directed by Engineer. and in accordance to the MISIP and C-ESMP.	No.	2.000		
10.14	Providing and fixing in position Reinforced Cement Concrete three person Seating Garden Benches with neat smooth cement colour finishing of approved colour in aesthetic design as approved by the CSC and HPRIDC complete finished item	No.	30.000		
10.15	Design, drawing and construction of permanent masonry structure with RCC roofing 6 number of bio toilets each blocks having 3 toilet rooms sperate for 3 toilets for Men and 3 toilets for Women at specified location of each toilet plan area size 2.5mx2.5 and with 2.5m inside clear height including masonry foundation, masonry walls, RCC roof, inside and out side cement plastering, with water proof cement based painting, Rigid PVC lockable door and Rigid PVC Ventilators with glass louvers, approved brand bio water closet with flush cistern, wash basin, required CP brass fixers for water supply, including providing drainage and water supply system complete finished item of work as directed by the Project Manager and as per CPWD specifications and approved drawing	No's	6.000		
10.16	Construction of Water Harvesting System units including fixing of perforated pipes, channels, drainage filte, etc. complete as per drawings and as per CPWD or CGWB norms and relevant Technical specifications. (Locations shall be decided later in consultation with Project Manager)	No.	11.000		
11.00	BILL NO. 11 : SCHEDULE OF DAY WORKS				
A	A) LABOUR:				
11.01	Mate	Man day	122.000		
11.02	Mazdoor	Man day	1,290.000		
11.03	Mason	Man day	30.000		
11.04	Operator	Man day	200.000		
11.05	Blacksmith	Man day	90.000		
11.06	Carpenter	Man day	90.000		
11.07	Fabricator /Fitter /Welder	Man day	90.000		
11.08	Blaster	Man day	12.000		
11.09	Bitumen Labour	Man day	60.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
B	B) MATERIALS:				
11.10	Cement OPC 43g/53g	MT	8.400		
11.11	HYS (TMT) Reinforcement steel	MT	8.400		
11.12	Bitumen 60/70 grade	MT	5.900		
11.13	Coarse aggregates 10mm to 20mm size	Cum	347.300		
11.14	Wet Mix Macadam materials	Cum	719.500		
11.15	Coarse sand as per Specification	Cum	250.000		
C	C) CONTRACTORS EQUIPMENT (with Operator, POL & etc.,)				
11.16	Deployment of truck mounted utility crane (8-10 MT capacity)	Hour	320.000		
11.17	Deployment of JCB (0.9 Cum capacity)	Hour	610.000		
11.18	Dozer size upto 200 KW	Hour	200.000		
11.19	Mobile concrete batching plant/mixing plant	Hour	25.000		
11.20	Motor Grader	Hour	385.000		
11.21	Pumping Set (5HP) - for Dewatering	Hour	22.000		
11.22	Pumping Set (10HP) - for Dewatering	Hour	22.000		
11.23	Static Roller (8 -10 tonne capacity)	Hour	22.000		
11.24	Vibratory Roller (1-2 tonne capacity)	Hour	35.000		
11.25	Vibratory Roller (8-10 tonne capacity)	Hour	280.000		
11.26	Truck (10/12 tonnes capacity)	Hour	450.000		
11.27	Truck mounted Water Tanker (10 tonne capacity)	Hour	35.000		
11.28	Wheel Loader (1.5 cum)	Hour	580.000		
12.00	BILL NO. 12 : ESMP MEASURES				
12.01	Providing and Construction of Environmental Enhancement and /Cultural Heritage Conservation Measures along Project Road as detailed below: (a) Conservation/renovation/enhancement measures for natural water source (all season) at chainage KM 3+700- Refer Fig 7-1 (b) Conservation/renovation/enhancement measures for religious shrine/structure at chainage KM 3+999- Refer Fig 7-2 (c) Conservation/renovation/enhancement measures for open dug well at chainage KM 4+297 - Refer Fig 7-3 (d) Conservation/renovation/enhancement measures for religious shrine/structure (peepal tree with platform) at chainage KM 5+321 - Refer Fig 7-6 (e) Conservation/renovation/enhancement measures for relocation of religious shrine at chainage KM 5+989 - Refer Fig 7-7 (f) Conservation/renovation/enhancement measures for religious shrine/structure (peepal tree with platform) at chainage KM 8+275 - Refer Fig 7-8	Job	1.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
12.02	Providing and Construction of Environmental Enhancement and /Cultural Heritage Conservation Measures along Project Road as detailed below: (g) Conservation/renovation/enhancement measures for natural drinking resource at chainage KM 8+280 - Refer Fig 7-9 (h) Conservation/renovation/enhancement measures for natural water resource at chainage KM 10+416 - Refer Fig 7-10 (i) Conservation/renovation/enhancement measures for religious shrine/structure at chainage KM 10+725 - Refer Fig 7-11	Job	1.000		
12.03	Construction of crash barrier for primary health centre at chainage KM 4+515 - Refer Fig 7-4 complete as per drawing and technical specifications and as directed by Project Manager.	Lm	15.000		
12.04	Construction of noise barrier for private school at chainage KM 4+773 - Refer Fig 7-5 complete as per drawing and technical specifications and as directed by Project Manager.	Sqm	50.000		
12.05	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Construction of hedge brush layer.	Lm	15,550.000		
12.06	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Construction of brush layer.	Lm	15,150.000		
12.07	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Construction of live palisade.	Lm	600.000		
12.08	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Construction of live Fascine.	Lm	1,100.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
12.09	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Grass slip plantation on slope <45° @ 100 drills/Sqm.	Sqm	3,400.000		
12.10	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Grass slip plantation on slope 45°-60° @ 100 drills/Sqm.	Sqm	1,300.000		
12.11	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Grass slip plantation on >60° slope @ 100 drills/Sqm.	Sqm	500.000		
12.12	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Plantation of large sized stature grass slips at slope of <45° @ 20 slips/Sqm.	Sqm	3,000.000		
12.13	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Bamboo crib wall.	Cum	600.000		
12.14	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Tree plantation in plains within RoW.	No.	1,300.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
12.15	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Shrub Plantation in plains Within Row.	No.	570.000		
12.16	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Agave plantation in slopes.	No.	80.000		
12.17	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Group plantation of shrubs.	Sqm	80.000		
12.18	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Hedge Plantation (2 plants/RM).	Lm	200.000		
12.19	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Hedge Plantation (4 plants/RM).	Lm	200.000		
12.20	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Bamboo plantation within RoW.	No.	200.000		
12.21	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Grass seed sowing<40°.	Sqm	12,300.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
12.22	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Grass seed sowing<40° with mulch.	Sqm	12,400.000		
12.23	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager. for Grass seed sowing on slope 40-45d with mulch and jute netting.	Sqm	15,300.000		
12.24	Carrying out Bio Engineering (nature based solutions) Interventions at selected locations along the project road including Muck Disposal Sides and reclaimed vacant areas within RoW Vacant low lying in accordance with HP manual on Specifications for bioengineering in slope stabilization and protection and relevant specifications by IRC) and approval as directed by Project manager for Hydro seeding including dressing/trimming of slope including removing of fractured material and maintenance with watering 2 to 3 times after 12hrs of hydro seeding @ 1 Litre/Sqm (each time) for six months/propagation of grasses and shrubs under supervision of hydro seeding provider	Sqm	14,050.000		
12.25	Clearance or Removal of Invasive Species like Lantana and Sea Ruthenium etc. from the project road corridor in accordance with the procedures stipulated by the Department of Forests, GoHP as approved and directed by Project manager as given in Appendix -24 in ESMP.	Sqm	33,000.000		
12.26	Provide plantation and maintenance (tree gaurd) of 3000 avenue tress along the road and within RoW and maintenance of the same during entire construction period with 90% survival rate as decided by the Environmental Specialist of CSC.	No.	1,200.000		
12.27	Carryout samples for Environmental Monitoring through an NABL accredited laboratory at operational sites/sensitive receptors/work camp sites/HMP sites/ Concrete Batch Plants as per CPCB Standard Procedures as directed by the Environmental Specialist of CSC. including one year O&M during DLP for Ambient Air Quality Monitoring.	No.	120.000		
12.28	Carryout samples for Environmental Monitoring through an NABL accredited laboratory at operational sites/sensitive receptors/work camp sites/HMP sites/ Concrete Batch Plants as per CPCB Standard Procedures as directed by the Environmental Specialist of CSC. including one year O&M during DLP. for Water quality Monitoring.	No.	60.000		

Item No.	Description of Item	Unit	Quantity	Rate in Figures and Words	Amount
12.29	Carryout samples for Environmental Monitoring through an NABL accredited laboratory at operational sites/sensitive receptors/work camp sites/HMP sites/Concrete Batch Plants as per CPCB Standard Procedures as directed by the Environmental Specialist of CSC. including one year O&M during DLP. for Noise level Monitoring.	No.	120.000		
12.30	Carryout samples for Environmental Monitoring through an NABL accredited laboratory at operational sites/sensitive receptors/work camp sites/HMP sites/Concrete Batch Plants as per CPCB Standard Procedures as directed by the Environmental Specialist of CSC during pre and post monsoon every year. for Soil Quality Monitoring.	No.	60.000		

Grand Total in Rs.