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NIT No.: WAP/ENVT/H-3082/CSEZ/2018-19/31; Dated 7<sup>th</sup> Feb. 2019

**VOLUME – III**

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**FINANCIAL BID**

NIT No.: WAP/ENVT/H-3082/CSEZ/2018-19/31; Dated 7<sup>th</sup> Feb. 2019

**LETTER OF TRANSMITTAL FOR FINANCIAL BID**

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**LETTER OF TRANSMITTAL FOR FINANCIAL BID**

**To**  
**The Team Leader,**  
**WAPCOS Limited CSEZ Project Office, CSEZ Admin. Building,**  
**Kakkanad, Cochin, Kerala—682037; Phone: +91-484-2413544**

**Subject: Financial Bid for the work of “Repair and Maintenance Works of Roads inside Cochin Special Economic Zone, Kakkanad (Phase 1)”**

Sir,

With reference to your NIT document dated ....., I/we, having examined the Bidding Documents and understood their contents, hereby submit my/our Bid for the aforesaid Project.

The Bid is unconditional and unqualified.

1. I / We acknowledge that the WAPCOS will be relying on the information provided in the BID and the documents accompanying the BID for selection of the Contractor for the aforesaid Project, and we certify that all information provided in the Bid are true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the BID are true copies of their respective originals.
2. The BID Price has been quoted by me / us after taking into consideration all the terms and conditions stated in the NIT, draft Agreement, our own estimates of costs and after a careful assessment of the site and all own the conditions that may affect the project cost and implementation of the project.
3. I/ We acknowledge the right of the Authority to reject our BID without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.
4. In the event of my/ our being declared as the Selected Bidder, I/we agree to enter into an Agreement in accordance with the draft that has been provided to me/us prior to the BID Due Date. We agree not to seek any changes in the aforesaid draft and agree to abide by the same.
5. I / We shall keep this offer as specified in the NIT.
6. I / We hereby submit our BID and offer a BID Price of Rs. ....excluding Goods and Services Tax (Rs..... in words) for undertaking the aforesaid Project in accordance with the Bidding Documents and the Agreement.

Yours faithfully,

Date: (Signature, name and designation of the Authorized signatory)

Place: Name and seal of Bidder

## **SUMMMARY OF COST**

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**SUMMARY OF COST**

**Name of Work: Repair and Maintenance Works of Roads inside Cochin Special Economic Zone, Kakkanad (Phase 1)**

Particulars	Total Quoted Amount (INR)	
	In Figures	In words
<b>Total cost for the work of Repair and Maintenance Works of Roads inside Cochin Special Economic Zone, Kakkanad (Phase 1) as per BoQ</b>		

**Note:-**

- Rates quoted should be exclusive of GST, CSEZ Authority, being a developer is exempted from payment of GST.
- The rate quoted in Bill of Quantities, included all costs associated with the project including any out of pocket / mobilization expenses, indirect Taxes if any applicable as per Govt. terms, to be paid by the Contractor
- The tenderer shall quote rates up to zero decimal and as well as in words. In case of any discrepancy, the lowest rate quoted shall prevail.
- In case of any discrepancy in the total amount, the lowest rate quoted shall prevail.
- The payment will be done based upon the actual quantity of work done at site certified by site in charge, within the quantity mentioned in BoQ.

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**BILL OF QUANTITIES (BOQ)**

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## ABSTRACT OF BILL OF QUANTITIES

**NAME OF WORK : REPAIR AND MAINTENANCE WORKS OF ROADS INSIDE COCHIN SPECIAL ECONOMIC ZONE, KAKKANAD (PHASE 1)**

**NAME OF THE BIDDER :**

SL No.	DESCRIPTION	AMOUNT
I	SAVERI ROAD TOTAL AMOUNT (1)	
II	ASWATHA ROAD TOTAL AMOUNT (2)	
III	VISWA ROAD TOTAL AMOUNT (3)	
	<b>Sub. Total (A)=(1)+(2)+(3)</b>	
	<b>Contingency (B) = 5% on (A)</b>	
	<b>G. Total =(A)+(B)</b>	

**I. SAVERI ROAD**

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
<b>I</b>	<b>Clearing and Tree Cutting</b>					
1.1	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, up to a lead of 1000 meters including removal and disposal of top organic soil not exceeding 150 mm in thickness as per the direction of Engineer-In-Charge in the new road and drain alignment area including setting out of the alignment.	sq.m	720			
1.2	Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material and disposal of unserviceable material with all lifts and up to a lead of 1000 meters and earth filling in the depression/pit.					
	Beyond 30 cm girth up to and including 60 cm girth	Nos.	3			
	Beyond 60 cm girth up to and including 120 cm girth	Nos.	4			
	Beyond 120 cm girth up to and including 240 cm girth	Nos.	2			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
<b>II</b>	<b>Shifting Utilities</b>					
1.3	Dismantling and re-installation of existing 8 meter MS <b>street light pole</b> including single arm light fitting and placing in the location as specified by Engineer-in-charge in CSEZ site. The concrete foundation of the pole shall also be dismantled & placed in the location as specified by Engineer-in-charge. The item include all required labour, material & logistics for the same.	Nos.	4			
1.4	Supply, laying, testing & commissioning of 'C' class 150 mm dia heavy duty MS pipe conforming to IS 1239 including fittings like elbows, tees flanges, tapers, nuts bolts, gaskets etc. in ground including excavation & providing cement concrete blocks as supports, anticorrosive wrapping coating as per IS 10221, backfilling the trench etc. of following sizes complete as required. Including dismantling existing <b>fire hydrant</b> valve and 150 mm dia pipes as specified by Engineer-in-charge.	m	15			
1.5	Supply of 4C x 10 sq.mm. Size 1.1kV grade XLPE insulated, PVC sheathed armoured aluminum conductor <b>power cable</b> conforming to relevant standards as specified by Engineer-in-charge.	m	250			
1.6	Supplying & making <b>cable end termination</b> with and aluminum lugs for cable of 1.1kV grade as required and as specified by Engineer-in-charge. The glands shall be earthed with sizes of XLPE insulated PVC sheathed aluminum conductor cable of 1.1kV grade as required and as specified by Engineer-in-charge. The glands shall be earthed with suitable size earthing clip & 14 SWG Cu wire to nearest earth	Nos	8			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	conductor.					
1.7	Laying of one number PVC insulated and PVC sheathed armoured power cable of 1.1kV grade for the 4C*10 Sq. mm sizes in ground including excavation of trench of size 15x50cm and cable laying through 1.5" PVC medium pipe, refilling the trench etc. as required and as specified by Engineer-in-charge, cable size not exceeding 35Sq mm.	m	250			
<b>III</b>	<b>DISMANTLING &amp; DEMOLISION</b>					
1.8	Earth work in all kinds of soil in surface excavation <b>not exceeding 30 cm</b> in depth but exceeding 1.5 m in width including getting out and disposal of excavated earth up to 1000 m and lift up to 1.5 m, as directed by Engineer-in- Charge.	Sq. m	600			
1.9	Earth work in excavation in all kinds of soil by mechanical means (Hydraulic excavator)/manual means over areas ( <b>exceeding 30 cm in depth</b> , 1.5 m in width) including getting out and disposal of excavated earth lead up to 1000 m and lift up to 1.5 m, as directed by Engineer-in-charge.	Cu. m	360			
1.10	Dismantling the existing road including bituminous macadam and water bound macadam up to subgrade manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 1000 meter lead, as per direction of Engineer-in-charge.	Sq. m	840			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.11	Chipping of RCC side walls of valve chambers of average 250mm tk with manual and/ or by standard power driven percussion type or of approved make Chisel to reduce the height for an average depth of 250 mm without damage to the valves/pipes inside the chamber, including cleaning the exposed concrete surface with wire brush, levelling the top surface with 1:2 cement mortar mix, including cutting the reinforcement, removing and re-fixing the covering slab to suite the finished surface level and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge without affecting the remaining structure.	Cu. m	1.13			
<b>IV</b>	<b>ROAD FORMATION</b>					
1.12	Construction of <b>sub-grade</b> and earthen shoulders with approved material obtained from <b>borrow pits</b> with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2, MoRTH 5 <sup>th</sup> Revision and as per direction of Engineer-In-Charge.	Cu. m	432			
1.13	Collection and supply of <b>quarry muck</b> for raising the low laying portion of the road and parking areas, spreading, watering, ramming, compacting with power roller etc. including cost and conveyance of all material, hire charges incidental expenses etc. complete as per standard specification if found wherever required to achieve required gradient as per direction of Engineer-In-Charge.	Cu. m	270			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.14	Construction of granular <b>sub-base</b> by providing close graded Material conforming to specifications (material conforming to Grade-I {size range 75 mm to 0.075 mm} having CBR Value-30), mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per standard specifications and directions of Engineer-in-Charge.	Cu. m	216			
1.15	Providing, laying, spreading and compacting graded stone aggregate to <b>wet mix macadam</b> 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 as per standard specifications and directions of Engineer-in-Charge.	Cu. m	216			
1.16	Providing and applying <b>tack coat</b> using medium setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on W.B.M / W.M.M. @ 0.4kg/sq.m	Sq. m	1440			
1.17	Providing and laying surface dressing as <b>wearing course</b> in single coat using crushed stone aggregates of specified size on a layer of bituminous binder (VG 30) laid on prepared surface and rolling with 8-10 ton smooth wheeled steel roller.	sq.m	1440			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.18	Providing and applying <b>tack coat</b> using rapid setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on bituminous surface @ 0.25kg/Sq. m	Sq. m	1440			
1.19	Providing and laying <b>bituminous macadam</b> using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge, 50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cu. m	72			
1.20	Providing and applying <b>tack coat</b> using rapid setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on bituminous surface @ 0.25kg/sq.m	Sq. m	1440			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.21	Providing and laying <b>Bituminous concrete</b> using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge, 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cu.m	57.6			
<b>V</b>	<b>DRAINS/DUCTS</b>					
1.22	<b>Earth work in excavation</b> in all kinds of soil by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 3.5 m), including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 1000 m, including back filling after construction of drain.	Cu. m	330			
1.23	Providing and laying in position PCC, 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size) - <b>M10</b> of specified grade including the cost of centering and shuttering - All work up to plinth level	Cu. m	41.25			



Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.24	<b>Centering and shuttering</b> including strutting, propping etc. and removal of form for all heights					
	(a) Foundations, footings, bases of columns, etc. for mass concrete	Sq. m	50			
	(b) Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sq. m	1350			
	(c) Suspended floors, roofs, landings, balconies and access platform	Sq. m	275			
1.25	<b>Steel</b> reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level. Thermo-Mechanically Treated bars of grade Fe-500D or more, as per the drawing and as per the direction of Engineer-In-Charge.	kg	22494			
1.26	Providing and laying in position specified grade of <b>RCC</b> 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size) - <b>M20</b> , excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level.	Cu. m	180.1			
1.27	Providing and laying in position specified grade of <b>RCC precast slab</b> , 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size) - <b>M20</b> , including the cost of centering, shuttering, finishing and reinforcement and necessary hook, including lead and laying in position to cover the drain - All work up to plinth level as per the direction of Engineer-In-Charge.	Cu. m	14.63			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.28	6 mm thick cement plastering with cement mortar of mix 1:3 (1 cement: 3 fine sand) including all cost of materials, applying, finishing etc. as per the direction of Engineer-In-Charge.	Sq. m	475			
1.29	Construction of rainwater catch of size .50m x .50m x .45m using M20 grade RCC (0.3 m3) with Fe 500D TMT steel (@110kg/m3 of RCC) including all form works on M10 PCC (0.075m3), covered with specially fabricated anticorrosive steel grill made of 8mm x 75mm plates (45kg) including all material, fabrication, formwork, plastering, Epoxy painting, back filling the cut portion and making good the road portion, fixing the grill to the correct lines and levels with the top level of road etc. as per direction of Engineer in Charge and as per the drawing.	Nos.	3			
<b>VI</b>	<b>ROAD FURNISHING</b>					
1.30	Providing and applying 2.5 mm thick <b>road marking</b> strips (retro-reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi-automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable standard specifications.	Sq. m	105			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.31	Providing and fixing <b>Glow studs</b> of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite ) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 (+/-5) degrees to base .The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4 : 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge.	Nos.	150			
1.32	Providing and Fixing 40mm NB <b>G I hand rail</b> including all cost of materials, labour charges for fixing, necessary PCC and RCC foundation, and welding charges, epoxy painting (two coats) on epoxy priming coat after proper cleaning using wire brush etc., complete. (vertical 1.5m spacing and horizontal 3 nos), as per the drawing and as per the direction of Engineer-in-charge	R. m	100			
1.33	Manufacturing, supplying and fixing retro reflective <b>sign boards</b> made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated					

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours). Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing , specification and direction of Engineer--in-charge.					
	(a) Mandatory/ Regulatory sign boards of 900 mm diametre with support length of 3750 mm	Nos.	2			
	(b) Cautionary /warning sign boards of equilateral triangular shape having each side of 900 mm with support length of 3650 mm	Nos.	2			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.34	Providing and fixing of direction and place identification retroreflectorised sign with 7 years warranty manufactured as per IRC 67 made of Type IV micro prismatic grade sheeting fixed over aluminium sheeting, 2mm thick-aluminium composite material sheeting 4mm thick with area not exceeding 0.9 Sq. m, with suitable back supporting frame of MS angle 40x40x6 and supported on GI pipe pole 50mm NB, ~2m height conforming to IS 1239 firmly fixed to ground by means of properly designed foundation with M15 grade Cement concrete minimum size 45cmx45cmx60cm, 60cm below ground level including painting all exposed surface with two coats of epoxy painting over epoxy primer and as per approved drawing and clause 801 including lettering symbols etc.	Sq. m	1.08			
1.35	Providing and laying at or near ground level <b>factory made kerb stone</b> of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge). At road side (including providing suitable foundation for fixing the above factory made kerb stone with M-10 grade concrete as per the direction of the Engineer-in-charge).	Cu. m	28.8			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
1.36	Providing and laying in position <b>PCC</b> , 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size) - <b>M10</b> of specified grade for kerb stones including necessary excavation not exceeding 15cm depth - All work up to plinth level	cum	6			
1.37	Taking out existing kerb stones/walls of all types from footpath/central verge/road side, including removal of mortar etc., disposal of unserviceable material to the dumping ground and stacking of serviceable material all within 1000 meter lead as per direction of Engineer-in-Charge.	R. m	70			
1.38	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge, wherever, if required.	Sq. m	347.5			
1.39	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade, two or more coats on new plastered or concrete surfaces including necessary surface preparations	Sq. m	240			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
<b>VII</b>	<b>HUME PIPES</b>					
1.40	<b>Excavating</b> trenches of required width for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, in all kinds of soil, with requisite slope if required, including getting out the excavated soil, and then backfilling the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 1000 m, for Hume pipes exceeding 300 mm dia but not exceeding 600 mm	R m	72			
1.41	<b>Extra for excavating</b> trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth up to 1.5 metre).	R m	72			
1.42	<b>Providing and laying</b> 600 mm dia Non-Pressure NP-4 class (Heavy duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete	R m	72			
1.43	Supplying and fixing PVC cap specially made to cover the end of 600 mm dia RCC pipes including handling and fabrication etc. all as per direction of Engineer -In- Charge	Nos.	18			
<b>SAVERI ROAD TOTAL AMOUNT (1)</b>						

**II. ASWATHA ROAD**

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	<b>CLEARING AND TREE CUTTING</b>					
2.1	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, up to a lead of 1000 meters including removal and disposal of top organic soil not exceeding 150 mm in thickness as per the direction of Engineer-In-Charge in road drain, footpath area including setting out of the alignment.	Sq. m	7325			
2.2	Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material and disposal of unserviceable material with all lifts and up to a lead of 1000 meters and earth filling in the depression/pit.					
	Beyond 30 cm girth up to and including 60 cm girth	Nos.	30			
	Beyond 60 cm girth up to and including 120 cm girth	Nos.	30			
	Beyond 120 cm girth up to and including 240 cm girth	Nos.	10			



Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	<b>DISMANTLING</b>					
2.3	Scarifying the existing bituminous road surface to a maximum depth of 50 mm and disposal of scarified material within all lifts and lead up to 1000m (by mechanical means only for receiving the new layer).	Sq. m	10150			
2.4	Dismantling the existing road including bituminous macadam and water bound macadam up to subgrade manually (for locations wherever pipelines or gas lines are present)/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 1000 meters lead, as per direction of Engineer-in-charge.	Sq. m	6540			
2.5	Earth work in all kinds of soil in surface excavation <b>not exceeding 30 cm</b> in depth but exceeding 1.5 m in width including getting out and disposal of excavated earth up to 1000 m and lift up to 1.5 m, as directed by Engineer-in- Charge.	Sq. m	6540			
2.6	Earth work in excavation in all kinds of soil by mechanical means (Hydraulic excavator)/manual means over areas ( <b>exceeding 30 cm in depth</b> , 1.5 m in width) including getting out and disposal of excavated earth lead up to 1000 m and lift up to 1.5 m, as directed by Engineer-in-charge.	Cu. m	1600			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
2.7	Chipping of RCC side walls of valve chambers of average 250mm tk with manual and/ or by standard power driven percussion type or of approved make Chisel to reduce the height for an average depth of 250 mm without damage to the valves/pipes inside the chamber, including cleaning the exposed concrete surface with wire brush, levelling the top surface with 1:2 cement mortar mix, including cutting the reinforcement, removing and re-fixing the covering slab to suite the finished surface level and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge without affecting the remaining structure.	Cu. m	1.50			
2.8	Taking out existing kerb stones/walls of all types from footpath/ central verge/road side, including removal of mortar etc., disposal of unserviceable material to the dumping ground and stacking of serviceable material all within 1000 meter lead as per direction of Engineer-in-Charge.	R. m	3000			
<b>HUME PIPES</b>						
2.9	<b>Excavating</b> trenches of required width for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, in all kinds of soil, with requisite slope if required, including getting out the excavated soil, and then backfilling the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 1000 m, for Hume pipes exceeding 300 mm dia but	R. m	900			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	not exceeding 600 mm					
2.10	<b>Extra for excavating</b> trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth up to 1.5 metre).	R m	900			
2.11	<b>Providing and laying</b> Non-Pressure NP-4 class (Heavy duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete					
	(a) 450 mm dia RCC pipes.	R m	300			
	(b) 600 mm dia RCC pipes.	R m	600			
2.12	Supplying and fixing PVC cap specially made to cover the end of RCC pipes including handling and fabrication etc. all as per direction of Engineer -In- Charge					
	(c) For 600 mm dia RCC pipes.	Nos.	68			
	(d) For 450 mm dia RCC pipes.	Nos.	34			
2.13	Providing and laying in position <b>PCC</b> , 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size) - <b>M10</b> of specified grade for kerb stones including necessary excavation not exceeding 15cm depth - All work up to plinth level	cum	3.46			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
2.14	<b>Centering and shuttering</b> including strutting, propping etc. and removal of form for all heights					
	(d) Foundations, footings, bases of columns, etc. for mass concrete	Sq. m	7.28			
	(e) Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sq. m	119			
2.15	<b>Steel</b> reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level. Thermo-Mechanically Treated bars of grade Fe-500D or more, as per the drawing and as per the direction of Engineer-In-Charge.	kg	3676			
2.16	Providing and laying in position specified grade of <b>RCC</b> 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size) - <b>M20</b> , excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level.	Cu. m	19.56			
2.17	Providing and laying in position specified grade of <b>RCC precast slab</b> , 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size) - <b>M20</b> , including the cost of centering, shuttering, finishing and reinforcement and necessary hook, including lead and laying in position to cover the drain - All work up to plinth level as per the direction of Engineer-In-Charge.	Cum	12.27			
2.18	6 mm thick cement plastering with cement mortar of mix 1:3 (1 cement: 3 fine sand) including all cost of materials, applying,	Sq. m	29.28			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	finishing etc. as per the direction of Engineer-In-Charge.					
	<b>ROAD FORMATION</b>					
2.19	Construction of <b>sub-grade</b> and earthen shoulders with approved material obtained from <b>borrow pits</b> with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2, MoRTH 5 <sup>th</sup> Revision and as per direction of Engineer-In-Charge.	Cu. m	2104			
2.20	Collection and supply of <b>quarry muck</b> for raising the low laying portion of the road and parking areas, spreading, watering, ramming, compacting with power roller etc. including cost and conveyance of all material, hire charges incidental expenses etc. complete as per standard specification if found wherever required to achieve required gradient as per direction of Engineer-In-Charge.	Cu. m	500			
2.21	Construction of granular <b>sub-base</b> by providing close graded Material conforming to specifications (material conforming to Grade-I {size range 75 mm to 0.075 mm} having CBR Value-30), mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per standard specifications and directions of Engineer-in-Charge.	Cu. m	654			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
2.22	Providing, laying, spreading and compacting graded stone aggregate to <b>wet mix macadam</b> 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 as per standard specifications and directions of Engineer-in-Charge.	Cu. m	981			
2.23	Providing and applying <b>tack coat</b> using medium setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on W.B.M / W.M.M. @ 0.4kg/sq.m	Sq. m	6540			
2.24	Providing and laying surface dressing as <b>wearing course</b> in single coat using crushed stone aggregates of specified size on a layer of bituminous binder (VG 30) laid on prepared surface and rolling with 8-10 ton smooth wheeled steel roller.	Sq. m	6540			
2.25	Providing and applying <b>tack coat</b> using rapid setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on bituminous surface @ 0.25kg/Sq. m	Sq. m	6540			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
2.26	Providing and laying <b>bituminous macadam</b> using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge, 50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cu. m	327			
2.27	Providing and applying <b>tack coat</b> using rapid setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on bituminous surface @ 0.25kg/Sq. m	Sq. m	16690			
2.28	Providing and laying <b>Bituminous concrete</b> using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge, 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cu. m	668			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	<b>ROAD FURNISHING</b>					
2.29	Providing and applying 2.5 mm thick <b>road marking</b> strips (retro-reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi-automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil,grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	Sq. m	690			
2.30	Providing and fixing <b>Glow studs</b> of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 (+/-5) degrees to base .The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4: 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge.	Nos.	800			



Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
2.31	Manufacturing, supplying and fixing retro reflective <b>sign boards</b> made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours).Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing , specification and direction of Engineer--in-charge.					
	(a) Mandatory/ Regulatory sign boards of 900 mm diameter with support length of 3750 mm	Nos.	20			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	(b) (b) Cautionary /warning sign boards of equilateral triangular shape having each side of 900 mm with support length of 3650 mm	Nos.	20			
2.32	Providing and fixing of direction and place identification retroreflectorised sign with 7 years warranty manufactured as per IRC 67 made of Type IV micro prismatic grade sheeting fixed over aluminium sheeting, 2mm thick-aluminium composite material sheeting 4mm thick with area <b>not exceeding 0.9 sq.m</b> , with suitable back supporting frame of MS angle 40x40x6 and supported on GI pipe pole 50mm NB, ~2m height conforming to IS 1239 firmly fixed to ground by means of properly designed foundation with M15 grade Cement concrete minimum size 45cmx45cmx60cm, 60cm below ground level including painting all exposed surface with two coats of epoxy painting over epoxy primer and as per approved drawing and clause 801 including lettering symbols etc.	Sq. m	18			
2.33	Providing and laying at or near ground level <b>factory made kerb stone</b> of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge). At road side (including providing suitable foundation for fixing the above factory	Cu. m	100.8			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	made kerb stone with M-10 grade concrete as per the direction of the Engineer-in-charge).					
2.34	6mm thick cement plastering with cement mortar of mix 1:3 (1 cement: 3 fine sand) including all cost of materials, applying, finishing etc. as per the direction of Engineer-In-Charge.	Sq. m	1680			
2.35	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	Sq. m	1600			
2.36	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade, two or more coats on new plastered or concrete surfaces including necessary surface preparations	Sq. m	3360			
2.37	Providing and laying in position <b>PCC</b> , 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size) - <b>M10</b> of specified grade for kerb stones including necessary excavation not exceeding 15cm depth - All work up to plinth level	Cu. m	29.40			
2.38	Brick work with common burnt clay modular bricks of class designation 7.5 in kerb in cement mortar 1:4 (1 cement : 4 coarse sand)	Cu. m	168			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
2.39	Cement concrete pavement with 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size), including finishing complete.	Cu. m	69.3			
2.40	Extra for making chequers of approved pattern on cement concrete floors, steps, landing, pavements etc.	Sq. m	1386			
2.41	Removing and relaying the existing RCC slab on drain and duct with proper re-fixing on 1:3 mix cement mortar as per the direction of Engineer-In-Charge, including disposal of damaged slabs up to a lead of 200m, including cleaning the duct and drain without damaging the drain structure and the existing cables.	Sq. m	1386			
2.42	Construction of rainwater catch of size .25m x .25m x .45m using M20 grade RCC (0.08 m <sup>3</sup> ) with Fe 500D TMT steel (@110kg/m <sup>3</sup> of RCC) including all form works on M10 PCC (0.02m <sup>3</sup> ), covered with specially fabricated anticorrosive steel grill made of 8mm x 75mm plates (15kg) including all material, fabrication, formwork, plastering, Epoxy painting, back filling the cut portion and making good the road portion, fixing the grill to the correct lines and levels with the top level of road etc. as per direction of Engineer in Charge and as per the drawing.	Nos.	10			
<b>ASWATHA ROAD TOTAL AMOUNT (2)</b>						

**III. VISWA ROAD**

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	<b>CLEARING AND TREE CUTTING</b>					
3.1	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, up to a lead of 1000 meters including removal and disposal of top organic soil not exceeding 150 mm in thickness as per the direction of Engineer-In-Charge in road drain, footpath area including setting out of the alignment.	Sq. m	5850			
3.2	Cutting of trees, including cutting of trunks, branches and removal of stumps, roots, stacking of serviceable material and disposal of unserviceable material with all lifts and up to a lead of 1000 meters and earth filling in the depression/pit.					
	Beyond 30 cm girth up to and including 60 cm girth	Nos.	10			
	Beyond 60 cm girth up to and including 120 cm girth	Nos.	25			
	Beyond 120 cm girth up to and including 240 cm girth	Nos.	15			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	<b>DISMANTLING</b>					
3.3	Scarifying the existing bituminous road surface to a maximum depth of 50 mm and disposal of scarified material within all lifts and lead up to 1000m (by mechanical means only for receiving the new layer).	Sq. m	1705			
3.4	Dismantling the existing road including bituminous macadam and water bound macadam up to subgrade manually (for locations wherever pipelines or gas lines are present)/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 1000 meters lead, as per direction of Engineer-in-charge.	Sq. m	5735			
3.5	Earth work in all kinds of soil in surface excavation <b>not exceeding 30 cm</b> in depth but exceeding 1.5 m in width including getting out and disposal of excavated earth up to 1000 m and lift up to 1.5 m, as directed by Engineer-in- Charge.	Sq. m	5735			
3.6	Earth work in excavation in all kinds of soil by mechanical means (Hydraulic excavator)/manual means over areas ( <b>exceeding 30 cm in depth</b> , 1.5 m in width) including getting out and disposal of excavated earth lead up to 1000 m and lift up to 1.5 m, as directed by Engineer-in-charge.	Cu. m	630			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
3.7	Chipping of RCC side walls of valve chambers of average 250mm tk with manual and/ or by standard power driven percussion type or of approved make Chisel to reduce the height for an average depth of 250 mm without damage to the valves/pipes inside the chamber, including cleaning the exposed concrete surface with wire brush, levelling the top surface with 1:2 cement mortar mix, including cutting the reinforcement, removing and re-fixing the covering slab to suite the finished surface level and disposal of debris for all lead and lifts all complete as per direction of Engineer-In-Charge without affecting the remaining structure.	Cu. m	1.50			
3.8	Taking out existing kerb stones/walls of all types from footpath/ central verge/road side, including removal of mortar etc., disposal of unserviceable material to the dumping ground and stacking of serviceable material all within 1000 meter lead as per direction of Engineer-in-Charge.	R. m	1560			
<b>HUME PIPES</b>						
3.9	<b>Excavating</b> trenches of required width for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, in all kinds of soil, with requisite slope if required, including getting out the excavated soil, and then backfilling the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 1000 m, for Hume pipes exceeding 300 mm dia but	R. m	324			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	not exceeding 600 mm					
3.10	<b>Extra for excavating</b> trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth up to 1.5 metre).	R m	324			
3.11	<b>Providing and laying</b> Non-Pressure NP-4 class (Heavy duty) R.C.C. pipes including collars/spigot jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete					
	(e) 450 mm dia RCC pipes.	R m	108			
	(f) 600 mm dia RCC pipes.	R m	216			
3.12	Supplying and fixing PVC cap specially made to cover the end of RCC pipes including handling and fabrication etc. all as per direction of Engineer -In- Charge					
	(g) For 600 mm dia RCC pipes.	Nos.	36			
	(h) For 450 mm dia RCC pipes.	Nos.	18			
3.13	Providing and laying in position <b>PCC</b> , 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size) - <b>M10</b> of specified grade for kerb stones including necessary excavation not exceeding 15cm depth - All work up to plinth level	cum	3.46			



Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
3.14	<b>Centering and shuttering</b> including strutting, propping etc. and removal of form for all heights					
	(f) Foundations, footings, bases of columns, etc. for mass concrete	Sq. m	7.28			
	(g) Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sq. m	119			
3.15	<b>Steel</b> reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level. Thermo-Mechanically Treated bars of grade Fe-500D or more, as per the drawing and as per the direction of Engineer-In-Charge.	kg	3676			
3.16	Providing and laying in position specified grade of <b>RCC</b> 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size) - <b>M20</b> , excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level.	Cu. m	19.56			
3.17	Providing and laying in position specified grade of <b>RCC precast slab</b> , 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size) - <b>M20</b> , including the cost of centering, shuttering, finishing and reinforcement and necessary hook, including lead and laying in position to cover the drain - All work up to plinth level as per the direction of Engineer-In-Charge.	Cum	12.27			
3.18	6 mm thick cement plastering with cement mortar of mix 1:3 (1 cement: 3 fine sand) including all cost of materials, applying,	Sq. m	29.28			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	finishing etc. as per the direction of Engineer-In-Charge.					
<b>ROAD FORMATION</b>						
3.19	Construction of <b>sub-grade</b> and earthen shoulders with approved material obtained from <b>borrow pits</b> with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2, MoRTH 5 <sup>th</sup> Revision and as per direction of Engineer-In-Charge.	Cu. m	1700			
3.20	Collection and supply of <b>quarry muck</b> for raising the low laying portion of the road and parking areas, spreading, watering, ramming, compacting with power roller etc. including cost and conveyance of all material, hire charges incidental expenses etc. complete as per standard specification if found wherever required to achieve required gradient as per direction of Engineer-In-Charge.	Cu. m	365			
3.21	Construction of granular <b>sub-base</b> by providing close graded Material conforming to specifications (material conforming to Grade-I {size range 75 mm to 0.075 mm} having CBR Value-30), mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per standard specifications and directions of Engineer-in-Charge.	Cu. m	538			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
3.22	Providing, laying, spreading and compacting graded stone aggregate to <b>wet mix macadam</b> 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 as per standard specifications and directions of Engineer-in-Charge.	Cu. m	806			
3.23	Providing and applying <b>tack coat</b> using medium setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on W.B.M / W.M.M. @ 0.4kg/sq.m	Sq. m	5735			
3.24	Providing and laying surface dressing as <b>wearing course</b> in single coat using crushed stone aggregates of specified size on a layer of bituminous binder (VG 30) laid on prepared surface and rolling with 8-10 ton smooth wheeled steel roller.	Sq. m	5735			
3.25	Providing and applying <b>tack coat</b> using rapid setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on bituminous surface @ 0.25kg/Sq. m	Sq. m	5735			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
3.26	Providing and laying <b>bituminous macadam</b> using crushed stone aggregates of specified grading premixed with bituminous binder, transported to site by tippers, laid over a previously prepared surface with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge, 50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 3.50% (percentage by weight of total mix) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cu. m	269			
3.27	Providing and applying <b>tack coat</b> using rapid setting bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom, on bituminous surface @ 0.25kg/Sq. m	Sq. m	7080			
3.28	Providing and laying <b>Bituminous concrete</b> using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge, 40/50 mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	Cu. m	284			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
<b>ROAD FURNISHING</b>						
3.29	Providing and applying 2.5 mm thick <b>road marking</b> strips (retro-reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi-automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil,grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	Sq. m	406.8			
3.30	Providing and fixing <b>Glow studs</b> of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro-reflective surface shall be 35 (+/-5) degress to base .The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4: 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge.	Nos.	592			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
3.31	Manufacturing, supplying and fixing retro reflective <b>sign boards</b> made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours).Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing , specification and direction of Engineer--in-charge.					
	(c) Mandatory/ Regulatory sign boards of 900 mm diameter with support length of 3750 mm	Nos.	6			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	(d) (b) Cautionary /warning sign boards of equilateral triangular shape having each side of 900 mm with support length of 3650 mm	Nos.	6			
3.32	Providing and fixing of direction and place identification retroreflectorised sign with 7 years warranty manufactured as per IRC 67 made of Type IV micro prismatic grade sheeting fixed over aluminium sheeting, 2mm thick-aluminium composite material sheeting 4mm thick with area <b>not exceeding 0.9 sq.m</b> , with suitable back supporting frame of MS angle 40x40x6 and supported on GI pipe pole 50mm NB, ~2m height conforming to IS 1239 firmly fixed to ground by means of properly designed foundation with M15 grade Cement concrete minimum size 45cmx45cmx60cm, 60cm below ground level including painting all exposed surface with two coats of epoxy painting over epoxy primer and as per approved drawing and clause 801 including lettering symbols etc.	Sq. m	5.4			
3.33	Providing and laying at or near ground level <b>factory made kerb stone</b> of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge). At road side (including providing suitable foundation for fixing the above factory	Cu. m	93.6			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	made kerb stone with M-10 grade concrete as per the direction of the Engineer-in-charge).					
3.34	6mm thick cement plastering with cement mortar of mix 1:3 (1 cement: 3 fine sand) including all cost of materials, applying, finishing etc. as per the direction of Engineer-In-Charge.	Sq. m	1560			
3.35	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	Sq. m	1050			
3.36	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade, two or more coats on new plastered or concrete surfaces including necessary surface preparations	Sq. m	3120			
3.37	Providing and laying in position <b>PCC</b> , 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone aggregate 20 mm nominal size) - <b>M10</b> of specified grade for kerb stones including necessary excavation not exceeding 15cm depth - All work up to plinth level	Cu. m	66.3			
3.38	Brick work with common burnt clay modular bricks of class designation 7.5 in kerb in cement mortar 1:4 (1 cement : 4 coarse sand)	Cu. m	156			



Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
3.39	Cement concrete pavement with 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size), including finishing complete.	Cu. m	64.35			
3.40	Extra for making chequers of approved pattern on cement concrete floors, steps, landing, pavements etc.	Sq. m	1287			
3.41	Removing and relaying the existing RCC slab on drain and duct with proper re-fixing on 1:3 mix cement mortar as per the direction of Engineer-In-Charge, including disposal of damaged slabs up to a lead of 200m, including cleaning the duct and drain without damaging the drain structure and the existing cables.	Sq. m	1287			
3.42	Construction of rainwater catch of size .50m x .50m x .45m using M20 grade RCC (0.3 m <sup>3</sup> ) with Fe 500D TMT steel (@110kg/m <sup>3</sup> of RCC) including all form works on M10 PCC (0.075m <sup>3</sup> ), covered with specially fabricated anticorrosive steel grill made of 8mm x 75mm plates (45kg) including all material, fabrication, formwork, plastering, Epoxy painting, back filling the cut portion and making good the road portion, fixing the grill to the correct lines and levels with the top level of road etc. as per direction of Engineer in Charge and as per the drawing.	Nos.	5			
3.43	Construction of rainwater catch of size .25m x .25m x .45m using M20 grade RCC (0.08 m <sup>3</sup> ) with Fe 500D TMT steel (@110kg/m <sup>3</sup> of RCC) including all form works on M10 PCC (0.02m <sup>3</sup> ), covered with specially fabricated anticorrosive steel grill made of 8mm x 75mm	Nos.	6			

Sl No.	Description of Item	Units	Quantity	Rate Quoted in INR	Total Amount Quoted Exclusive of GST in INR	
					in figures	in words
	plates (15kg) including all material, fabrication, formwork, plastering, Epoxy painting, back filling the cut portion and making good the road portion, fixing the grill to the correct lines and levels with the top level of road etc. as per direction of Engineer in Charge and as per the drawing.					
<b>VISWA ROAD TOTAL AMOUNT (3)</b>						