

Project Name: Manglore Smart City

Grand Summary for Priority Road DPR 3

Sr. No.	Description	Cost In INR
1	Road and Other Works	34,37,96,669
2	Street Lighting	48,82,426
3	Landscape Work	3,55,444
	Sub Total	34,90,34,539
	GST @ 12% on SOR Base Items -Construction Cost	2,94,63,095
	GST @ 18% on Market Rate Items -Construction Cost	1,54,23,291
	Provision for Third Party Damages and Maintenance at 1 st Year(DLP)	30,95,630
	GST @ 12% on SOR Base Items -Construction Cost	2,24,284
	GST @ 18% on Market Rate Items -Construction Cost	1,69,240
	Maintenance Cost of 2nd,3rd and 4th Year	127,08,314
	GST @ 12% on SOR Base Items -Construction Cost	12,12,260
	GST @ 18% on Market Rate Items -Construction Cost	2,30,869
	Escalation and Tender Premium at 10%	3,49,03,454
	Add 3% Contengency	1,04,71,036
	Miscellaneous and Rounding off	63,988
	Grand Total	45,70,00,000

**EXECUTIVE ENGINEER
MSCL MANGALURU**

**GENERAL MANAGER TECHNICAL
MSCL MANGALURU**

**MANAGING DIRECTOR
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City
1.0 BOQ of Road and Other Work for Priority Road DPR 3**

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
1.00	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	11959.14	74.98	8,96,696	
2.00	KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (KSRRB 18-19,Page No 140,SI No : 18.47)	Cum	575.10	1001.90	5,76,193	
3.00	KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (KSRRB 18-19,Page No.141,S.I.No.18.49)	Rmt	3946.73	13.20	52,097	
4.00	KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KSRRB 18-19,18.20,Page No.139)	Cum	2320.47	429.00	9,95,481	
5.00	KSRRB M200-17.2. Dismantling of 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 specifications. v) Steel work in all types of Sections upto a Height of 5 m above plinth level excluding Cutting of Rivet- B. Excluding dismembering. (KSRRB 18-19,18.34,Page No.140)	MT	5.88	2082.30	12,244	
6.00	KSRRB 300-50. Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by road roller attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM of machineries complete as per specifications. MORTH / Section 5.(KSRRB 18-19, SI No.19.56,Pg No.146)	Sqm	9497.90	42.90	4,07,460	
7.00	KSRRB 300-46. Scarifying by mechanical means stone metal crust 50mm to 100mm thick by along with 20mm premix carpet I surface dressing and stacking of old serviceable materials including cost of all labour charges, HOM complete as per specifications. MORTH I Chapter 3.(KSRRB 18-19,SI No.19.52,Pg	Sqm	19427.80	42.90	8,33,453	
8.00	KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (KSRRB 18-19,Page No 137,SI No : 18.23)	Cum	45.90	386.10	17,722	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
9.00	Removing B.S slab of drain and stacking.(KSRB 18-19,5.32,Page No.27)	Sqm	1091.28	107.80	117,640	
10.00	KSRRB M800-Permanent type barricade in construction zone KSRRB M800-44.1. Construction of a permanent type barricade made of steel components, 1.5 m high from road level, fitted with 3 horizontal rails 200 mm wide and 4 m long on 50 x 50 x 5 mm angle iron vertical support, painted with yellow and white strips, 150 mm in width at an angle of 45°, complete as per IRC:SP:55-2014 complete as per specifications . A. With steel components(KSRRB 18-19,Page No 187,SI No : 24.45)	Each	250.00	4,211.90	10,52,975	
11.00	KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 5.00Km and complete as per specifications. MORTH specification No.301 (KSRRB 18-19,Page No 143,SI No : 19.14)	Cum	40414.00	56.36	22,77,733	
12.00	KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KSRB 18-19,SI No.2.11,Pg. No.7)	Cum	10225.03	132.00	13,49,704	
13.00	KSRRB 300-58. Compaction of original ground by mechanical means including filling in depression occurring during rolling including cost of all labour, HOM complete as per specifications. MORTH I Chapter 3 (KSRRB 18-19,SI No.19.64,Pg. No.147)	Sqm	42323.06	6.60	2,79,332	
14.00	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of M 15 Grade with OPC @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.53cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM curing complete as per specifications. Specification No. KBS 4.1, 4.2 (KSRB 18-19,P.No.13, SI.No. 4.6)	Cum	1028.40	6,490.00	66,74,316	
15.00	KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-1) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (SI.No.20.4 of KPWD SR 2018-19)	Cum	7658.91	2,382.60	1,82,48,119	
16.00	KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters confirming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnspillers, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (KSRB 18-19,Page No 14,SI No :4.10)	Cum	6639.72	6,817.80	4,52,68,283	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
17.00	KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (KSRB 18-19,Page No 16,SI No : 4.28)	Sqm	46502.30	289.30	1,34,53,115	
18.00	KSRB 4.9.2 : Providing T.M.T steel reinforcement for RCC work including straightening,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinary complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500 (KSRB 18-19,Page No 18,SI No : 4.46.2)	MT	528.58	77,860.20	4,11,55,345	
19.00	KSRRB M300- Construction of Subgrade . KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305 (KSRB 18-19,Page No 146,SI No : 19.62 & 17.4)	Cum	3253.53	620.62	20,19,204	
20.00	KSRRB M600-1.Providing and Constructing dry lean cement concrete M15 mix CC 1:5:10 base with OPC 25mm and down size graded granite metal coarse aggregate at 0.86cum and fine aggregates @0.58cum over a prepared sub-base, coarse and fine aggregate conforming to IS: 383-2016,aggregate cement ratio not to exceed 15:1, Aggregate gradation after blending to be as per Table 600-1,optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver, compacting with 8-10 tonnes vibratory roller, finishing and curing complete as per specifications. Clause 601of MORTH V Revision and IS 456 Table-5 -do- with OPC at 150 kg/cum and coarse aggregate 0.86cum, fine aggregate 0.58cum using Concrete Batch mix Plant at 75 cum/hr capacity with Slip form paver with electronic sensor. (KSRRB 18-19,Page No 174,SI No : 22.1.1)	Cum	2751.17	4,452.80	1,22,50,410	
21.00	KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site, Manually laid and compacting with palte compactor ,finishing and curing complete as per MORTH specifications Clause 601. (RA attached)	Cum	1453.95	4,048.00	58,85,593	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
22.00	KSRRB M600-2. Providing and Constructing unreinforced, dowel jointed, plain cement Pavement Quality concrete for pavements using Grade concrete M40 having Flexural strength not less than 4.50 Mpa over a prepared base with OPC, coarse aggregate at 0.64 cum, fine aggregates at 0.36 cum, Coarse and fine aggregate conforming to IS:383-2016 and Table 600-3 of MORTH V Revision, with Superplastizer at 3 lts conforming to IS 9103-2008. loading materials to batch mix plant by front end loader, mixed in a cement concrete batch mix plant as per approved mix design, transported to site in transit truck agitator 5 cum capacity, laid with Paver, compacted and finished in a continuous operation as per IRC-15 including cost for providing of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane of impermeable plastic sheet of 125 micron, groove cutting, sealant primer joint sealant, debonding strip, dowel bars at 9 kg/cum, tie rods at 1.15 kg/cum, admixtures as approved, curing compound, finishing to lines and grades,	Cum	5008.36	6,341.50	3,17,60,515	
23.00	Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower and as shown on drawing and as per MORTH specifications clause 602. (Non SOR Item)	Rmt	8,181.52	115.00	9,40,874	
24.00	KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications. Morth specification No.3005.1 (KSRRB 18-19, Page No 260, SI No : 35.8)	Rmt	8,181.52	364.10	29,78,890	
25.00	Providing and laying at or near ground level factory made Median kerb stone of M-20 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 drawing. (Precast C.C. kerb stone shall be approved by Engineer-in-charge). (RA Attached)	Cum	30.60	19,479.70	5,96,079	
26.00	Providing and fixing pre cast solid concrete Kerb stones as per the drawing, made out of CC M20 and jointed with CM 1:3 and finishing cutting, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete (RA Attached)	Cum	287.64	17,030.30	48,98,662	
27.00	Providing and fixing pre cast solid concrete water table (longitudinal gutter) as per the drawing, made out of CC M20 and jointed with CM 1:3 and finishing cutting, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete (RA Attached)	Cum	121.23	17,030.30	20,64,508	
28.00	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per MORTH specifications section 8. (KSRRB 18-19, Page No 180, SI No : 24.1)	Sqm	1,121.88	88.00	98,726	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
29.00	P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)	Nos.	412.00	917.00	3,77,804	
30.00	Providing and Fixing Recessed Inception chamber cover - size: (600 x 450)mm Material	Nos.	1,155.00	3,500.00	40,42,500	
31.00	KSRRB M300- Wrought iron and mild steel welded work KSRRB M300-18. Wrought iron and mild steel welded work (using angles, square bars, tees and channel grills, gratings with grating frames, gates and tree guards of any size and design etc. including cost of screens and welding rods or bolts and nuts complete fixed in position but without the cost of excavation and concrete for fixing which will be paid separately complete as per specifications.(KSRB 18-19,SI.No.19.97,Pg.No.150)	Quintal	463.20	7,905.70	36,61,920	
32.00	KSRB 12-8.2 : Constructing brick masonry inspection chamber 500x700mm, and 450mm depth , (clear inside dimension) for pipeline with one or two inlets, using table moulded non-modular bricks of class designation 50 in cement mortar 1:5, C.I cover with frame (light duty) 455x610mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23kg and weight of frame 15 kg) R.C.C. top slab with cement concrete M 15 with 20mm and downsize granite metal , foundation concrete M 5 with 40mm and downsize granite metal inside plastering 12mm thick with cement mortar 1:3, finished smooth with a floating coat of cement on walls and bed concrete complete as per standard design including cost of materials, labour charges, curing complete as per specifications. Specification No. KBS (P.No. 76/ I.No.11.52 of PWD SR 2018-19)	Nos.	415.00	9,125.60	37,87,124	
33.00	Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7.KUWSDB SOR 2016-17)	Rmt	1,155.00	301.70	3,48,464	
34.00	KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia , of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (KSRB SR 2018-19,P.No.88, SI.No.12.89)	Nos.	1,155.00	913.00	10,54,515	
35.00	KSRRB M800-29.3. Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case-III :Triple row for three utility services. (KSRRB 2018-19,Pg No 186,SI.No.24.36)	Rmt	713.00	5,524.20	39,38,755	
36.00	Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	21,682.00	1,971.80	4,27,52,568	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
37.00	Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the overburden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	26,487.00	1,068.90	2,83,11,954	
38.00	Providing and Fixing Spacers for Power Ducts of size 225 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	3,948.00	1,003.00	39,59,844	
39.00	Providing and Fixing Spacers for Power Ducts of size 160 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	4,213.00	1,947.00	82,02,711	
40.00	Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)	Rmt	4,087.60	601.30	24,57,874	
41.00	Providing and laying heavy duty cobble stones 60mm thick , using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (KSRB 18-19, Pg No 103, SI No : 14.6)	Sqm	15,128.55	1,161.60	1,75,73,324	
42.00	Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 40mm thick and Yellow in colour, using cement and coarse sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)	Sqm	1,214.52	912.00	11,07,642	
43.00	Providing and laying heavy duty cobble stones 75mm thick , using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (KSRB 18-19, Page No 103, SI No : 14.7)	Sqm	8,955.26	1,225.40	109,73,776	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
44.00	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 120 TPH capacity Asphalt batch mix plant with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (KSRRB 18-19,S.I.No.21.17.2,Page No.160)	Cum	48.38	8,622.90	4,17,133	
45.00	KSRRB M500-19. Providing and laying bituminous concrete using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a 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 complete as per specifications. Clause 507 of MORTH V revision No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 5.4 % VG-40 Bitumen (KSRRB 18-19,S.I.No.21.22.6,Page No.162)	Cum	12.90	9,637.10	1,24,319	
46.00	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary	Nos.	109.00	3,862.10	4,20,969	
47.00	10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 900MM Equilateral Triangle-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.1)					
48.00	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary	Nos.	0.00	5,453.80	,0	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
	10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 900MM Octagon Stop Board-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.6)					
49.00	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary 10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 600MM Circle-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.3)	Nos.	32.00	3,429.80	1,09,754	
50.00	Direction and Place Identification Signs upto 0.9 sqm Size Board: Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 x 45 x 60 em, 60 em below ground level as per approved drawing. KSRRB 18-19,Pg No.180 SI No.24.3	Sqm	26.10	7619.70	1,98,874	
51.00	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, supply and installation of retro-reflectorised cautionary, mandatory and informatory signboards made out of cube corner micro prismatic grade sheeting confirming to 600x800 MM type XI standards of IRC :67:2012 specifications & fixed over 4 mm thick aluminium composite panel sheet having minimum 0.30 thick aluminium skin on both sides & fixed over a support frame of 25x25x3 mm MS angle and mounted on 75mm dia OR 75x75x6mm Mild steel angle of total height 2.70m 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 white colour with brands of 30 cm height alternatively firmly fixed to the ground by means of foundation with	Nos.	3.00	4453.90	13,362	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
	M20 grade cement concrete of 45 cm x45 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 as directed by engineer in charge. 10 years warranty for retro reflective sheeting from the original sheeting manufacturer as per clause 6.9 in IRC 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. KSRRB 18-19,Pg No.182,SI No.24.2.4					
52.00	KSRRB M800 Road markers / Road stud KSRRB M800 Road markers I Road studKSRRB MS00-35. Supply and Installtion of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS(Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of Category A of MORTH Circular No RW/NH/33023/10-97- DO III Dt 11.06. 1997. The height, width and length shall not exceed 50 mm, 1DO mm and 102 mm and with minimum reflective area of 13 Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19 mm and height not less than 30 mm) from the body is to be a minimum value of 500 Kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer	Nos.	1138.00	317.90	3,61,770	
53.00	Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (KSRRB 18-19,Page No 182,SI No : 24.15)	Sqm	3337.67	471.90	15,75,045	
54.00	Providing and Fixing of Bus shelter (on prepared foundation) made of SS 304 frame work with brush steel finish, Galvanised Aluminium powder coated roofing and electronic circuit to control its lighting.The seating shall be made of SS 304 tubular sections for seat and back rest.each unit size of 4500mm x 600mm with a minimum backrest support of 450mm.Bus shelter shall have the Side Display board to have 1100X400mm Electronic display.The electronic display board to be of LED Scrolling type with Oval, 4.3 x 5.1mm dia. Diffused. LED's having Amber colour.Dual bin system should be adopted one for recycle waste & other for dry waste.Each bin shall be with minimum capacity of 70Ltrs.Interactive Information Panel-display equipment with information area of 1400 x 1400 and touch screen LED display panel of area not less than 600-900mm with integrated 8mm toughened glass.Advertisement Area 2 nos of size 4500mm x 1650mm and 2100mm x 2000mm shall be integrated within the design of the Bus Shelter. This shall be backlit type with SS box framing sides and back complete.Provision for	Nos.	2.00	1500000.00	30,00,000	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
55.00	Providing & installing of E- toilet with Super structure of the electronic toilet to have asthetic ambience with inner room size 1.2 x 0.8 x 2.4 (LXWXH)meters and Size of electronic toilet overall size in meters 2.30x1.25x2.80 (LXWXH) Total area 35 Sft. with Built-access controlled main door and side walls made of SS Grade 304,Toilet floor and closet are to be stainless steel of grade 304.E-Toilet shall have Built-in water tank with minimum 225 Lit capacity and Access controll using coin validator for entering the unit based on automatic payment collection mechanism exit from the unit should be manual.Automatic lights inside the unit with gloves on opening the door.E-Toilet shall be Automatic flushing system which includes Automatic Pre flush cleaning before use,Automatic closet washing mechanism after use and Automatic platform cleaning mechanism programmed after specific numbers.In addition to these flush switch is to be provided for manual operation.Standard features should include heath faucet,exhaust fan and cloth hanger.	Nos	2.00	5,75,000	11,50,000	
	The E-Toilet shall have Alert to users-different indication on 'ready to use',busy are to be provided in the unit also with Voice guidance in the unit for users. Web enabled support-GPRS based Real time data to be provided from the unit through web for knowing the health status like number of users per day and coins collected.E-toilet shall have Modular and portable design enabling easy assembling and installation at site.Call ceneter and web portal facilities for registering complience and tracking usage,coin collection etc.Status display in LED,Printed instruction stickers are to be provided.For Advertisement purpose space for advertisement dispaly to be povided on the exterior of the unit for income generation and sustainability. Backup power facility like UPS is to be provided to supplement upto 30 Min Base of the unit to be placed on a suitable concrete structure with a ashthetic finish. (Non SOR Item)					
56.00	KSRB 6-2.3 : Providing and constructing burnt brick masonry with approved quality of non-modular bricks of standard size of class designation 5.0Newton per sqmm (table moulded) with cement mortar 1:6 for basement and superstructu/re including cost of materials, labour charges, scaffolding, curing complete as per specifications. Specification No. KBS 6.2. (KSRB 18-19,Page No.29,SI.No.6.7)	Cum	30.14	8576.70	2,58,495	
57.00	KSRB15-3.8 : Providing 18mm thick cement plaster in single coat with cement mortar 1:4, to brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications.(KSRRB 18-19,Page No.116,SI No.15.16)	Sqm	90.72	288.20	26,146	
58.00	Providing and fixing 450mm wide X 600mmX 20mm thk.RIVERWASHED BLACK GRANITE CLADDING on surface of seating as directed by architect (Non SOR Item)	Sqm	50.40	3527.00	1,77,761	
59.00	Supply and Fixing of Traffic signal Straight pole of 6 mtr, inner dia 100 mm from resistant to peeling with base plate size of (LXWXT) 200mm X200mmX6mm painted with redoxide and double coat with synthetic enamel paint of yellow colour assembly G.I., class B, as per technical specification (NON SOR Item)	Nos.	2.00	18,691	37,382	

Sr. No.	Specification	Unit	Qty.	Rate	Amount	Remarks
60.00	Supply and fixing of Traffic signal Cantilever pole Class B having inner diameter of 100 mm or more with a height of 6m including extension arm assembly having outer diameter of 75mm with arm span of 4 mtr length and base plate of size 300mm X 300mm with thickness of 6 mm welded at the bottom of the pole base as per technical specification & drawings. (NON SOR Item)	Nos.	2.00	52,850	1,05,700	
61.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (blow) as per Specification (NON SOR Item)	Nos.	4.00	11,082	44,328	
62.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Amber (blow) as per Specification (NON SOR Item)	Nos.	4.00	11,082	44,328	
63.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (arrow/U- Turn) EN-12368 as per Specification (NON SOR Item)	Nos.	4.00	13,973	55,892	
64.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (ped. standing) EN-12368 as per Specification (NON SOR Item)	Nos.	4.00	11,082	44,328	
65.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (ped.walking) EN-12368 as per Specification (NON SOR Item)	Nos.	4.00	13,973	55,892	
66.00	Supply and fixing of 300 mm dia - No Right Turn/No Left turn/No Straight/No 'U' Turn aspects by using UV stabilized ink on face plate EN-12368 as per Specification (NON SOR Item)	Nos.	4.00	6,196	24,784	
67.00	Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	302.00	4,500	13,59,000	
68.00	Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	4.16	100,000	4,16,000	
69.00	Providing and Fixing SS 304 Outdoor Dustbin(Pivoted Type and Mounted on SS Poles) of 55 liters capacity all complete to the satisfaction of the Engineer in charge. (NON SOR Item)	Nos.	111.00	7,500	8,32,500	
70.00	Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead of 5 km Item No 17.4 KSRRB M100-4.1- Earth	Cum	30,188.97	90.86	27,42,970	
71.00	Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead of 5km Item No 17.4 KSRRB M100-4.1- Debris	Cum	5,342.75	91.30	4,87,793	
				Total	34,37,96,669	

Cost of SOR + RA Base Items 24,54,74,343
GST @ 12% 29456921
Cost of Market Base Items 8,56,84,951
GST @ 18% 15423291

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

Name of the Work :- Mangalore Smart City
1.1 Measurement Sheet of Road and Other Work for DPR 3

Sr. No.	Description	Unit	No's	L	B	H	Qty.
Road and Junction Pavment and Other Works							
1	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge. (RA attached)						
	Pandeshwar Road Footpath						
	RHS Footpath(RCC Panels + Paver Blocks)						
	Ch.0.00 to 40.0	Sqm	1	40.59	0.47		19.08
	Ch.40.0 to 146.0	Sqm	1	104	0.27		28.08
	LHS Footpath (RCC Panels + Paver Blocks)						
	Ch.30.0 to Ch.65.0 (Curved Footpath)	Sqm	1	45.88	1.69		77.54
	Ch.65.0 to 83.0 (Trapezoidal Area)	Sqm	1	18.16	4.24		76.94
	Ch.83.0 to Ch. 146.0	Sqm	1	62.52	1.48		92.53
	Light House Hill Road-LHS						
	Paver Block on Footpath						
	Ch.0.0 to Ch.175.0	Sqm	1	161.50	1.42		229.33
	Ch.175.0 to Ch.250.0	Sqm	1	78.00	2.18		170.04
	Ch.250.0 to Ch.350.0	Sqm	1	138.00	1.79		247.02
	Cross Road at Ch.470.0	Sqm	1	25.00	0.82		20.50
	Ch.480.0 to Ch.500.0	Sqm	1	17.81	1.76		31.35
	Ch.500.0 to Ch.530.0	Sqm	1	29.00	8.01		232.29
	Ch.530.0 to Ch.620.0	Sqm	1	90.00	1.46		131.40
	Ch.650.0 to Ch.660.0	Sqm	1	11.24	5.04		56.65
	Ch.660.0 to Ch.800.0	Sqm	1	144.50	1.16		167.62
	Paver Block on Carriageway						
	Ch.0.0 to ch.110.0	Sqm	1	98.00	3.33		326.34
	Ch.110.0 to Ch.265.0	Sqm	1	159.00	4.24		674.16
	Ch.240.0 to Ch.290.0	Sqm	1	55.00	6.25		343.75
	Ch.290.0 to Ch.320.0	Sqm	1	32.50	1.67		54.28
	Ch.320.0 to Ch.340.0	Sqm	1	16.86	5.465		92.14
	Ch.350.0 to Ch.480.0	Sqm	1	130.17	6.86		892.97
	Ch.520.0 to Ch.730.0	Sqm	1	210.00	4.56		957.60
	Light House Hill Road-RHS						
	Paver Block on Footpath						
	Ch.30.0 to Ch.110.0	Sqm	1	84.85	2.61		221.46
	Ch.110 to Ch.168.0	Sqm	1	57.68	2.01		115.94
	Ch.350.0 to Ch.615.0	Sqm	1	262.69	2.99		785.43
	Ch.615.0 to Ch.765.0	Sqm	1	150.00	1.81		271.50
	Paver Block on Carriageway						0.00
	Ch.35.0 to Ch.100.0	Sqm	1	66.22	1.93		127.80
	Ch.110.0 to Ch.170.0	Sqm	1	65.50	2.47		161.79
	Ch.170.0 to Ch.205.0	Sqm	1	41.33	3.87		159.95
	KMC Merkera Road-LHS						
	Paver Block on Footpath						
	Ch.0.0 to Ch.40.0	Sqm	1	16.73	0.63		10.54
	Ch.40.0 to Ch.170.0	Sqm	1	130.00	1.82		236.60
	Ch.170.0 to Ch.420.0	Sqm	1	250.00	1.64		410.00
	Ch.420.0 to Ch.480.0	Sqm	1	60.00	0.95		57.00
	Ch.480.0 to 670.0	Sqm	1	190.00	2.63		499.70
	KMC Merkera Road						
	Paver Block on Carriageway(Consider 30% of Qty.)						
	Ch.40.0 to Ch.90.0 (Triangular Shape)	Sqm	0.5	46.16	2.69	0.30	18.63
	Ch.90.0 to Ch.320.0	Sqm	1	230.00	3.3	0.30	227.70
	Ch.320.0 to Ch.500.0	Sqm	1	180.00	2.87	0.30	154.98
	Ch.500.0 to Ch.610.0	Sqm	1	110.00	3.76	0.30	124.08
	Ch.610.0 to Ch.660.0	Sqm	1	50.00	1.51	0.30	22.65
	KMC Merkera Road-RHS						
	Paver Block on Footpath						
	Ch.0 to Ch.85.0	Sqm	1	85.00	1.78		151.30
	Ch.100.0 to Ch.240.0	Sqm	1	140.00	1.79		250.60
	Ch.240.0 to Ch.700.0	Sqm	1	460.00	2.28		1048.80
	Ch.0.0 to Ch.10.0	Sqm	1	31.23	0.53		16.55
	Ch.10.0 to Ch.90.0	Sqm	1	71.84	1.01		72.56
	Ch.90.0 to Ch.640.0	Sqm	1	550.00	3.44		1892.00
		Sqm		Total Qty.			11959.14
	Consider 60mm Paver Block	Cum					717.55
2	KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (KSRRB 18-19,Page No 140,SI No : 18.47)						
	Rosario Road-Part II-Damaged concrete road						
	Ch.500.0 to Ch.770.0	Cum	1	270	0.8	0.3	64.80

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Light House Hill Road						
	Ch. 0.0 to Ch.210.0	Cum	1	210	8.1	0.3	510.30
		Cum					575.10
					Total Qty.		
3	KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (KSRRB 18-19,Page No.141,S.I.No.18.49)						
	Pandeshwar Road Footpath						
	RHS Footpath(RCC Panels + Paver Blocks)						
	Ch.0.00 to 40.0	Rm	1	40.59			40.59
	Ch.40.0 to 146.0	Rm	1	104			104.00
	LHS Footpath (RCC Panels + Paver Blocks)						
	Ch.30.0 to Ch.65.0 (Curved Footpath)	Rm	1	45.88			45.88
	Ch.65.0 to 83.0 (Trapezoidal Area)	Rm	1	18.16			18.16
	Ch.83.0 to Ch. 146.0	Rm	1	62.52			62.52
	Rosario Church Road-Part I(RHS)						
	Ch.90.0 to Ch.130.0	Rm	1	43.45			43.45
	Ch.135.0 to 160.0	Rm	1	26.61			26.61
	Ch.167.0 to 200.0	Rm	1	38.21			38.21
	Ch.210.0 to 330.0	Rm	1	120			120.00
	Ch. 330.0 to 404.0	Rm	1	74			74.00
	Ch.404.0 to 407.0	Rm	1	8.24			8.24
	Ch.407.0 to Ch.500.0						
	Rosario Church Road-Part II(LHS)						
	Ch.730.0 to Ch.860.0	Rm	1	130			130.00
	Light House Hill Road-LHS						
	Paver Block on Footpath						
	Ch.0.0 to Ch.175.0	Rm	1	161.5			161.50
	Ch.175.0 to Ch.250.0	Rm	1	78			78.00
	Ch.250.0 to Ch.350.0	Rm	1	138			138.00
	Cross Road at Ch.470.0	Rm	1	25			25.00
	Ch.480.0 to Ch.500.0	Rm	1	17.81			17.81
	Ch.500.0 to Ch.530.0	Rm	1	29			29.00
	Ch.530.0 to Ch.620.0	Rm	1	90			90.00
	Ch.650.0 to Ch.660.0	Rm	1	11.24			11.24
	Ch.660.0 to Ch.800.0	Rm	1	144.5			144.50
	Light House Hill Road-RHS						
	Paver Block on Footpath						
	Ch.30.0 to Ch.110.0	Rm	1	84.85			84.85
	Ch.110 to Ch.168.0	Rm	1	57.68			57.68
	Ch.350.0 to Ch.615.0	Rm	1	262.687			262.69
	Ch.615.0 to Ch.765.0	Rm	1	150			150.00
	KMC Merker Road-LHS						
	Paver Block on Footpath						
	Ch.0.0 to Ch.40.0	Rm	1	16.73			16.73
	Ch.40.0 to Ch.170.0	Rm	1	130			130.00
	Ch.170.0 to Ch.420.0	Rm	1	250			250.00
	Ch.420.0 to Ch.480.0	Rm	1	60			60.00
	Ch.480.0 to 670.0	Rm	1	190			190.00
	KMC Merker Road-RHS						
	Paver Block on Footpath						
	Ch.0 to Ch.85.0	Rm	1	85			85.00
	Ch.100.0 to Ch.240.0	Rm	1	140			140.00
	Ch.240.0 to Ch.700.0	Rm	1	460			460.00
	Ch.0.0 to Ch.10.0	Rm	1	31.23			31.23
	Ch.10.0 to Ch.90.0	Rm	1	71.84			71.84
	Ch.90.0 to Ch.640.0	Rm	1	550			550.00
		Rm					3946.73
					Total Qty.		
4	KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KSRRB 18-19,18.20,Page No.139)						
	Pandeshwar Road						
	SWD-RHS						
	Base						
	Ch.0.0 to 145.0	Cum	1	145.00	1.50	0.10	21.75
	Wall						
	Ch.0.0 to 145.0	Cum	2	145.00	0.15	1.00	43.50
	Slab						
	Ch.0.0 to 145.0	Cum	1	145.00	1.00	0.10	14.50
	SWD-LHS						
	Base						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.30.0 to 145.0	Cum	1	124.00	1.50	0.10	18.60
	Wall						
	Ch.30.0 to 145.0	Cum	2	124.00	0.15	1.00	37.20
	Slab						
	Ch.0.0 to 145.0	Cum	1	124.00	1.00	0.10	12.40
	Septic Tank Like structure at RHS						
	Bottom	Cum	1	12.30	3.30	0.15	6.09
	Long Sides	Cum	2	12.30	0.20	2.00	9.84
	Short Side	Cum	2	3.30	0.20	2.00	2.64
	Slab	Cum	1	12.00	3.00	0.20	7.20
	Rosario Church Road-Part I(RHS) SWD						
	Base						
	Ch.90.0 to Ch.500.0	Cum	1	410.00	1.50	0.15	92.25
	Wall						
	Ch.90.0 to Ch.500.0	Cum	2	410.00	0.20	2.00	328.00
	Rosario Church Road-Part II(LHS) SWD						
	SWD-Base						
	Ch.740.0 to Ch.860.0	Cum	1	120.00	1.50	0.10	18.00
	SWD-Wall						
	Ch.740.0 to Ch.860.0	Cum	1	120.00	0.15	1.00	18.00
	SWD-Slab						
	Ch.740.0 to Ch.860.0	Cum	1	120.00	1.30	0.15	23.40
	Bunder Road						
	LHS						
	SWD-Base						
	Ch.0.0 to Ch.180.0	Cum	1	180.00	1.30	0.10	23.40
	SWD-Wall						
	Ch.0.0 to Ch.180.0	Cum	2	180.00	0.15	0.40	21.60
	SWD-Slab						
	Ch.0.0 to Ch.180.0	Cum	1	180.00	1.10	0.15	29.70
	LHS						
	SWD-Base						
	Ch.350.0 to Ch.380.0	Cum	1	30.00	1.30	0.10	3.90
	SWD-Wall						
	Ch.350.0 to Ch.380.0	Cum	1	30.00	0.15	0.50	2.25
	SWD-Slab						
	Ch.350.0 to Ch.380.0	Cum	1	30.00	1.10	0.15	4.95
	LHS						
	SWD-Base						
	Ch.460.0 to Ch.1330.0	Cum	1	870.00	1.40	0.10	121.80
	SWD-Wall						
	Ch.460.0 to Ch.1330.0	Cum	1	870.00	0.15	0.60	78.30
	SWD-Slab						
	Ch.460.0 to Ch.1330.0	Cum	1	870.00	1.20	0.15	156.60
	RHS						
	SWD-Base						
	Ch.450.0 to Ch.570.0	Cum	1	120.00	1.30	0.10	15.60
	SWD-Wall						
	Ch.450.0 to Ch.570.0	Cum	1	120.00	0.15	0.50	9.00
	SWD-Slab						
	Ch.450.0 to Ch.570.0	Cum	1	120.00	1.10	0.15	19.80
	RHS						
	SWD-Base						
	Ch.560.0 to Ch.750.0	Cum	1	190.00	1.30	0.10	24.70
	SWD-Wall						
	Ch.560.0 to Ch.750.0	Cum	1	190.00	0.15	0.70	19.95
	SWD-Slab						
	Ch.560.0 to Ch.750.0	Cum	1	190.00	1.10	0.15	31.35
	RHS						
	SWD-Base						
	Ch.770.0 to Ch.810.0	Cum	1	40.00	1.30	0.10	5.20
	SWD-Wall						
	Ch.770.0 to Ch.810.0	Cum	1	40.00	0.15	0.70	4.20
	SWD-Slab						
	Ch.770.0 to Ch.810.0	Cum	1	40.00	1.10	0.15	6.60
	RHS						
	SWD-Base						
	Ch.820.0 to Ch.990.0	Cum	1	170.00	2.30	0.10	39.10
	SWD-Wall						
	Ch.820.0 to Ch.990.0	Cum	1	170.00	0.15	1.20	30.60
	Light House Hill Road						
	LHS						
	SWD-Base						
	Ch.0.0 to Ch.320.0	Cum	1	320.00	1.70	0.10	54.40
	SWD-Wall						
	Ch.0.0 to Ch.320.0	Cum	1	320.00	0.15	0.70	33.60
	SWD-Slab						
	Ch.0.0 to Ch.320.0	Cum	1	320.00	1.50	0.15	72.00
	Light House Hill Road						
	LHS						
	SWD-Base						
	Ch.320.0 to Ch.770.0	Cum	1	450.00	1.30	0.10	58.50

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	SWD-Wall						
	Ch.320.0 to Ch.770.0	Cum	1	450.00	0.15	0.60	40.50
	SWD-Slab						
	Ch.320.0 to Ch.770.0	Cum	1	450.00	1.10	0.15	74.25
	KMC Merкера Road						
	LHS						
	SWD-Base						
	Ch.0.0 to Ch.800.0	Cum	1	800.00	1.80	0.10	144.00
	SWD-Wall						
	Ch.0.0 to Ch.800.0	Cum	1	800.00	0.15	1.20	144.00
	SWD-Slab						
	Ch.0.0 to Ch.800.0	Cum	1	800.00	1.60	0.15	192.00
	KMC Merкера Road						
	RHS						
	SWD-Base						
	Ch.0.0 to Ch.800.0	Cum	1	450.00	1.30	0.10	58.50
	SWD-Wall						
	Ch.0.0 to Ch.800.0	Cum	1	450.00	0.15	0.60	40.50
	SWD-Slab						
	Ch.0.0 to Ch.800.0	Cum	1	450.00	1.10	0.15	74.25
	Extension of Bibi Alabi Road						
	RHS						
	SWD-Base						
	Ch.0.0 to Ch.800.0	Cum	1	100.00	1.10	0.10	11.00
	SWD-Wall						
	Ch.0.0 to Ch.800.0	Cum	1	100.00	0.15	0.50	7.50
	SWD-Slab						
	Ch.0.0 to Ch.800.0	Cum	1	100.00	0.90	0.15	13.50
		Cum			Total Qty.		2320.47
5	KSRRB M200-17.2. Dismantling of 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 specifications. v)Steel work in all types of Sections upto a Height of 5 m above plinth level excluding Cutting of Rivet- B. Excluding dismembering. (KSRRB 18-19,18.34,Page No.140)						
	Ch.370.0 to Ch.460.0						
	75mm Pipe -Horizontal	Rm	3	90			270.00
	75mm Pipe -Vertical	Rm	45	1.2			54
							324.00
			Rm	Kg/Rm	Kg		MT
			324.00	5.71	1850.04		1.85
	Median Railing		Rm	Kg/Rm	Kg		
	Ch.370.0 to Ch.531.0	Rm	161	25	4025		4.03
						Total	5.88
6	KSRRB 300-50. Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by road roller attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM of machineries complete as per specifications. MORTH / Section 5.(KSRRB 18-19, SI No.19.56,Pg No.146)						
	Rosario Church -Part I						
	Ch.30.0 to Ch.60.0	Sqm	1	531.62	Area		531.62
	Ch.60.0 to Ch.360.0	Sqm	1	300	7.451		2235.30
	Rosario Church Raod and Pandeshwar Junction	Sqm	1	668	Area		668.00
	Rosario Church -Part II-Bituminous Road						
	Ch.700.0 to Ch.900.0	Sqm	1	200	4.43		886.00
	Junction of Rosario Road and Bunder Road at Railway Crossing	Sqm	1	1	403.78		403.78
	Bunder Road						
	Ch.0.0 to Ch.250.0	Sqm	1	250	5.69		1422.50
	Ch.555.0 to Ch.1320.0	Sqm	1	765	4.38		3350.70
		Sqm			Total Qty.		9497.90
7	KSRRB 300-46. Scarifying by mechanical means stone metal crust 50mm to 100mm thick by along with 20mm premix carpet I surface dressing and stacking of old serviceable materials including cost of all labour charges, HOM complete as per specifications. MORTH I Chapter 3.(KSRRB 18-19,SI No.19.52,Pg No.146)						
	Rosario Church -Part I						
	Ch.30.0 to Ch.60.0	Sqm	1	531.62	Area		531.62
	Ch.60.0 to Ch.360.0	Sqm	1	300	7.451		2235.30
	Rosario Church Raod and Pandeshwar Junction	Sqm	1	668	Area		668.00
	Rosario Road-Part II-Damaged Concrete Road						
	Ch.500.0 to Ch.700.0	Sqm	1	270	0.8		216.00

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Rosario Church -Part II- Bituminous Road						
	Ch.700.0 to Ch.900.0	Sqm	1	200	4.43		886.00
	Junction of Roasario Road and Bunder Road at Railway Crossing	Sqm	1	1	403.78		403.78
	Bunder Road						
	Ch.0.0 to Ch.250.0	Sqm	1	250	5.69		1422.50
	Ch.555.0 to Ch.1320.0	Sqm	1	765	4.38		3350.70
		Sqm			Total Qty.		9713.90
	Considered Existing Thk. Of Granular base as 150 mm,so Scarifying has to be done in two layers.hence qty. Has been considered twice accordingly.	Sqm					19427.80
8	KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantaling Brick/Tile work B.In Cement mortar (KSRRB 18-19,Page No 137,SI No : 18.23)						
	Pandeshwar Road						
	Stone Masonary-RHS	Cum	1	12	0.5	1.5	9.00
	Stone Masonary-RHS	Cum	1	14	0.5	1.5	10.50
	Rosario Church Road-1						
	Open SWD-Ch.40.0 to Ch.150.0						
	Wall	Cum	2	110	0.3	0.4	26.40
		Cum			Total Qty.		45.90
9	Removing B.S slab of drain and stacking.(PWD 16-17,5.32,Page No.32)						
	Rosario Church Road-Part I(RHS)						
	Ch.90.0 to Ch.130.0	Sqm	1	43.45		2.16	93.85
	Ch.135.0 to 160.0	Sqm	1	26.61		2.48	65.99
	Ch.167.0 to 200.0	Sqm	1	38.21		2.45	93.61
	Ch.210.0 to 330.0	Sqm	1	120		1.71	205.20
	Ch. 330.0 to 404.0	Sqm	1	74		2.57	190.18
	Ch.404.0 to 407.0	Sqm	1	8.24	Area		8.24
	Ch.407.0 to Ch.500.0	Sqm	1	90		3.38	304.20
	Rosario Church Road-Part II(LHS)						
	Ch.730.0 to Ch.860.0	Sqm	1	130		1	130.00
		Sqm			Total Qty.		1091.28
10	KSRRB M800-Permanent type barricade in construction zone KSRRB M800-44.1. Construction of a permanent type barricade made of steel components, 1.5 m high from road level, fitted with 3 horizontal rails 200 mm wide and 4 m long on 50 x 50 x 5 mm angle iron vertical support, painted with yellow and white strips, 150 mm in width at an angle of 45°, complete as per IRC:SP:55-2014 complete as per specifications . A. With steel components(KSRRB 18-19,Page No 187,SI No : 24.45)						
	Length of Road						
	Considred 250m length at 4 locations work will be in progress	Rm	1	1000.00			1000.00
						Total Length	1000.00
	No. of Barricade = Length of Road / Length of one barricade (4.0m)	Nos.			Total Qty.		250.00
11	KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 5.00Km and complete as per specifications. MORTH specification No.301 (KSRRB 18-19,Page No 143,SI No : 19.14)						
	SWD						
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Cum	1	271	1.8	1.44	702.43
	LHS-D2	Cum	1	271	1.8	0.85	414.63
	Rosario Church Road						
	Foundation						
	RHS-D4	Cum	1	420	1.2	1.20	604.80
	RHS-D5	Cum	1	334	1.8	1.60	961.92
	RHS-D5B	Cum	1	43	1.2	0.85	43.86
	RHS-D5A	Cum	1	118	1.2	0.85	120.36
	LHS-D3	Cum	1	420	1.2	1.50	756.00
	Bunder Road						
	Foundation						
	RHS-D6	Cum	1	805	1.8	1.47	2130.03
	RHS-D7	Cum	1	316	2.1	1.48	982.13
	RHS-D7A	Cum	1	309	2.2	1.92	1305.22
	Light House Hill Road-1						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Foundation						
	RHS-D8	Cum	1	392	1.2	1.26	592.70
	LHS-D9	Cum	1	392	1.2	1.26	592.70
	LHS-D13	Cum	1	384	1.2	0.85	391.68
	KMC Merкера Road						
	Foundation						
	RHS-D10A	Cum	1	577	1.35	1.48	1152.85
	RHS-D14	Cum	1	150	1.2	0.85	153.00
	LHS-10	Cum	1	577	1.25	1.48	1067.45
	Extension of Bibi alabi Road						
	RHS-D15	Cum	1	100	1.65	1.35	222.75
	Electrical Poles	Cum	184	1.35	1.35	1.00	335.34
	Signal Poles	Cum	4	1.6	1.6	1.00	10.24
	Electrical HDPE Pipe laying						
	Pandeshwar Road	Cum	1	571	0.9	1.80	925.02
	Rosario Church Road-1	Cum	1	933	0.9	1.80	1511.46
	Rosario Church Road-2	Cum	1	794	0.9	1.80	1286.28
	Bunder Road	Cum	1	1329	0.9	1.80	2152.98
	Light House Hill Road	Cum	1	992	0.9	1.80	1607.04
	KMC Merкера Road	Cum	1	1600	0.9	1.80	2592.00
	Electrical Chamber Excavation	Cum	211	3.3	2.4	2.40	4010.69
	Footpath Excavation						
	Pandeshwar Road						
	RHS Footpath						
	Ch.0.0 to 40.00	Cum	1.0	40.0	2.2	0.38	33.56
	Sloping Portion-Quarter Circle	Cum	0.3	3.1	2.5	0.38	0.74
	Sloping Portion-Quarter Circle	Cum	0.3	3.1	3.3	0.38	1.00
	Ch.50.0 to 74.0	Cum	1.0	24.6	1.8	0.38	16.90
	Sloping Portion-Quarter Circle	Cum	1.0	4.2	1.0	0.38	1.60
	Sloping Portion-Quarter Circle	Cum	0.3	3.1	3.0	0.38	0.90
	Ch.80.0 to 120.00	Cum	1.0	40.0	2.0	0.38	30.02
	Sloping Portion-Quarter Circle	Cum	0.3	3.1	4.9	0.38	1.46
	Ch.130.0- Ch.260.0	Cum	1.0	130.0	1.6	0.38	80.03
	LHS Footpath	Cum					
	Ch.20.0 to Ch.65.0	Cum	1.0	45.0	1.8	0.38	30.78
	Ch.65.0 to Ch.130.0	Cum	1.0	65.0	2.9	0.38	71.25
	Ch.130.0 to Ch.200.0	Cum	1.0	70.0	2.0	0.38	53.45
	Rosario Church Road-I						
	RHS						
	Ch.70.0 to 284.0	Cum	1.0	214.0	2.4	0.38	195.17
	Sloping Portion-Quarter Circle	Cum	0.3	3.1	6.4	0.38	1.91
	Ch.90 Triangular Portion	Cum	0.5	2.8	2.6	0.38	1.38
	Sloping Portion-Quarter Circle	Cum	0.3	3.1	6.6	0.38	1.95
	Ch.300.0 to Ch.330.0	Cum	1.0	29.7	2.4	0.38	27.10
	Sloping Portion-Quarter Circle	Cum	0.3	3.1	3.4	0.38	1.01
	Ch.337.0 to Ch.405.0	Cum	1.0	67.0	2.2	0.38	54.99
	Sloping Portion-Rectangular	Cum	1.0	3.0	2.6	0.38	2.96
	Ch.420.0 to Ch.490.0	Cum	1.0	75.0	2.4	0.38	68.40
	Sloping Portion-Quarter Circle	Cum	0.3	3.1	6.4	0.38	1.91
	LHS						
	Ch.60.0 to Ch.145.0	Cum	1.0	81.0	2.6	0.38	80.03
	Sloping Portion-Rectangular	Cum	1.0	2.7	2.5	0.38	2.57
	Sloping Portion-Rectangular	Cum	1.0	3.6	3.6	0.38	4.82
	Ch.55.0 to 65.0-Trapezoidal	Cum	1.0	10.0	4.3	0.38	16.26
	Ch.65.0 to Ch.260.0	Cum	1.0	92.0	2.5	0.38	87.40
	Sloping Portion-Rectangular	Cum	1.0	2.5	4.1	0.38	3.90
	Sloping Portion-Rectangular	Cum	1.0	2.5	4.0	0.38	3.80
	Ch.270.0 to Ch.300.00	Cum	1.0	28.2	2.5	0.38	26.79
	Ch.310.0 to Ch.330.0	Cum	1.0	19.6	2.5	0.38	18.59
	Ch.340.0 to Ch.350.0	Cum	1.0	9.7	2.5	0.38	9.22
	Ch.360.0 to Ch.390.0	Cum	1.0	28.4	2.5	0.38	27.00
	Ch.400.0 to Ch.465.0	Cum	1.0	65.5	2.5	0.38	62.23
	Light House Hill Road-LHS						
	Ch.0.0 to Ch.210.0	Cum	1.0	210.0	3.8	0.38	300.05
	Ch.210.0 to Ch.260.0	Cum	1.0	50.0	9.9	0.38	188.41
	Ch.240.0 to Ch.370.0	Cum	1.0	130.0	2.0	0.38	100.95
	Ch.350.0 to Ch.500.0	Cum	1.0	150.0	10.7	0.38	607.62
	Ch.500 to Ch.670.0	Cum	1.0	170.0	4.1	0.38	266.15
	Ch.650.0 to Ch.800.0	Cum	1.0	150.0	2.3	0.38	128.25
	Light House Hill Road-RHS						
	Ch.0.0 to Ch.105.0	Cum	1.0	105.0	2.8	0.38	112.52
	Ch.110.0 to Ch.170.0	Cum	1.0	60.0	4.4	0.38	99.64
	Ch.170.0 to Ch.255.0	Cum	1.0	85.0	4.4	0.38	141.47
	Ch.260.0 to Ch.770.0	Cum	1.0	510.0	3.1	0.38	600.78
	KMC Merкера Road-LHS						
	Ch.0.0 to Ch.670.0	Cum	1.0	670.0	3.2	0.38	801.99
	KMC Merкера Road-RHS						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.0.0 to Ch.90.0	Cum	1.0	90.0	3.2	0.38	110.12
	Ch.90.0 to Ch.155.0	Cum	1.0	65.0	3.5	0.38	85.96
	Ch.160.0 to Ch.300.0	Cum	1.0	140.0	3.7	0.38	196.84
	Ch.300.0 to Ch.470.0	Cum	1.0	170.0	3.4	0.38	218.35
	Ch.470.0 to Ch.700.0	Cum	1.0	230.0	3.8	0.38	329.50
	Footpath of Extension of Bibi alabi road						
	RHS						
	Ch.0.0 to Ch.100.0	Cum	1.0	100.0	2.4	0.38	91.58
	LHS						
	Ch.0.0 to Ch.70.0	Cum	1.0	70.0	2.5	0.38	67.56
	Ch.75.00 to Ch.90.0	Cum	1.0	15.0	2.8	0.38	15.96
	Paver block on Carriageway						
	Pandeshwar Road						
	RHS						
	Ch.130.0 to Ch.235.0	Cum	1	105	1.66	0.63	108.94
	LHS						
	Ch.20.0 to Ch.65.00	Cum	1	45	1.81	0.63	50.91
	Ch.80.0 to Ch.135.0	Cum	1	55	1	0.63	34.38
	Ch.145.0 to Ch.170.0	Cum	1	25.39	1.25	0.63	19.84
	Ch.180.0 to Ch.195.0	Cum	1	13.37	2.1	0.63	17.55
	Ch.200.0 to 270.0	Cum	1	4.62	1.56	0.63	4.50
	Rosario Church Road-LHS						
	Ch.60.0 to Ch.145.0	Cum	1	84.54	2.46	0.63	129.98
	Ch.155.0 to Ch.260.0	Cum	1	107	3.87	0.63	258.81
	Ch.265.0 to Ch.300.0	Cum	1	34	2.73	0.63	58.01
	Ch.310.0 to Ch.330.0	Cum	1	24.18	1.685	0.63	25.46
	Ch.335.0 to Ch.350.0	Cum	1	14	1.45	0.63	12.69
	Ch.360.0 to Ch.390.0	Cum	1	32.7	1.7	0.63	34.74
	Ch.400.0 to Ch.470.0	Cum	1	68.63	3.44	0.63	147.55
	Rosario Church Road-Part II-LHS						
	Ch.494.0 to Ch.520.0	Cum	1	23	1.98	0.63	28.46
	Gate Entrance at Ch.520.0	Cum	1	6.33	4.17	0.63	16.50
	Ch.525.0 to Ch.550.0	Cum	1	25.96	4.6	0.63	74.64
	Ch.523.0 to Ch. 550.0	Cum	1	4.23	26	0.63	68.74
	Gate Entrance at Ch.550	Cum	1	7.54	3.73	0.63	17.58
	Ch.550.0 to Ch.565.0	Cum	1	2.77	12.52	0.63	21.68
	Ch.570.0 to Ch.600.0	Cum	1	2.23	27	0.63	37.63
	Ch.600.0 to Ch.640.0	Cum	1	0.76	38	0.63	18.05
	Ch.640.0 to Ch.740.0	Cum	1	102	0.45	0.63	28.69
	Ch.750.0 to Ch. 890.0	Cum	1	158	1	0.63	98.75
	Rosario Church Road-Part II-RHS						
	Ch.500-Odd shape	Cum	1	2.18	7.5	0.63	10.22
	Ch.510.0 to Ch.570.0	Cum	1	63	2.34	0.63	92.14
	Ch.570.0 to Ch.625.0	Cum	1	56.45	2.32	0.63	81.85
	Ch.625.0 to Ch.698.0	Cum	1	73.25	1.67	0.63	76.45
	Ch.700.0 to Ch.753.0	Cum	1	51.57	1.02	0.63	32.88
	Ch.753.0 to Ch.880.0	Cum	1	127	0.94	0.63	74.61
	Bunder Road-LHS						
	Ch.0.0 to Ch. 125.0	Cum	1	119	2.54	0.63	188.91
	Ch.125.1 to Ch. 160.0	Cum	1	33	2.31	0.63	47.64
	Ch.160.1 to 172.0(including LHS footpath	Cum	1	16	7.74	0.63	77.40
	Road at Ch.180.0 RHS Side Footpath	Cum	1	15.61	1.44	0.63	14.05
	Ch. 180.0 to Ch.210.0	Cum	1	27.69	0.94	0.63	16.27
	Ch.208.0 to Ch.223.0	Cum	1	17.27	2.3	0.63	24.83
	Ch.223.0 to Ch.245.0	Cum	1	28	1.51	0.63	26.43
	Road at Ch.250.0 LHS Side Footpath	Cum	1	10	1.4	0.63	8.75
	Road at Ch.250.0 RHS Side Footpath	Cum	1	10	7.2	0.63	45.00
	Ch.260.0 to Ch.280.0	Cum	1	22.69	2.82	0.63	39.99
	Ch.280.0 to Ch.300.0	Cum	1	21.1	2.8	0.63	36.93
	Ch.300.0 to Ch.340.0	Cum	1	37	5.39	0.63	124.64
	Ch.345.0 to Ch.382.0	Cum	1	38.65	7.09	0.63	171.27
	Ch.390.0 to Ch.440.0	Cum	1	58.67	3.76	0.63	137.87
	Ch.440.1 to Ch. 650.0	Cum	1	120	1.2	0.63	90.00
	Ch. 690.0 to Ch.880.0	Cum	1	183	0.5	0.63	57.19
	Ch.880.0 to Ch.1170.0	Cum	1	86	2.2	0.63	118.25
	Ch.1170.0 to Ch.1212.0	Cum	1	42.33	1.61	0.63	42.59
	Ch.1220.0 to 1280.0	Cum	1	65.59	3.54	0.63	145.12
	Ch.1280.0 to 1320.0	Cum	1	34.24	1.11	0.63	23.75
	Ch.1320.0 to Ch.1330.0	Cum	1	7.54	3.11	0.63	14.66
	Bunder Road-RHS						
	Ch.0.0 to Ch. 18.0	Cum	1	13.61	1.97	0.63	16.76
	Ch.18.0 to Ch.30.0	Cum	1	13.44	1.645	0.63	13.82
	Ch.30.0 to Ch.50.0	Cum	0.5	19.17	2.137	0.63	12.80
	Ch.50.0 to Ch.180.0	Cum	1	130	3.31	0.63	268.94
	Ch.180.0 to Ch.245.0	Cum	1	65	5.35	0.63	217.34
	Ch.250.0 to Ch.555.0	Cum	1	305	2.6	0.63	495.63
	Ch.550 to Ch.580	Cum	1	30	2.5	0.63	46.88
	Ch.710.0 to Ch.810	Cum	1	100	3	0.63	187.50
	Ch.820.0 to Ch.992.0	Cum	1	172	6.63	0.63	712.73
	Ch.900.0 to Ch.1238.0	Cum	1	338	1.2	0.63	253.50
	Ch.1238.0 to Ch.1336.0	Cum	1	98	2.32	0.63	142.10
	Concrete New Road						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Pandeshwar Road						
	RHS						
	Ch.150.0 to Ch.260.0	Cum	1	116	3.38	0.15	58.81
	LHS						
	Ch.150.0 to Ch.170.0	Cum	1	23	3.09	0.15	10.66
	Ch.180.0 to Ch.205.0	Cum	1	24.25	4.62	0.15	16.81
	Ch.210.0 to Ch.275.0	Cum	1	68	1.65	0.15	16.83
	Rosario church Road-Part I						
	Junction area at Hamilton Road	Cum	1	770	Area	0.15	115.50
	Ch.60.0 to 360.0	Cum	1	300	9.975	0.15	448.88
	Junction at Rosario Road and Pandeshwar Road	Cum	1	903	Area	0.15	135.45
	Rosario church Road-Part II						
	Ch.780.0 to 900.0	Cum	1	120	6.2	0.15	111.60
	Bunder Road						
	Ch.0.0 to Ch.1336.0	Cum	1	1336	6.7	0.15	1342.68
	Light House Hill Road						
	Ch.10.0 to 100.0	Cum	1	93	1.13	0.15	15.76
	Ch.100.0 to 210.0	Cum	1	175	1	0.15	26.25
	Ch.210.0 to Ch.340.0	Cum	1	130	4.54	0.15	88.53
	Ch.350.0 to Ch.480.0	Cum	1	130	5.84	0.15	113.88
	KMC Merкера Road						
	LHS						
	Ch.180.0 to Ch.320.0	Cum	1	140	1.34	0.15	28.14
	Ch.350.0 to Ch.660.0	Cum	1	310	2.36	0.15	109.74
	RHS						
	Ch.70.0 to Ch.310.0	Cum	1	240	2.17	0.15	78.12
	Ch.310.0 to Ch.510.0	Cum	1	200	2.81	0.15	84.30
		Cum			Total Qty.		40414.00
12	KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.						
	Electrical HDPE Pipe laying						
	Pandeshwar Road	Cum	1	571	0.9	1.8	925.02
	Rosario Church Road-1	Cum	1	933	0.9	1.8	1511.46
	Rosario Church Road-2	Cum	1	794	0.9	1.8	1286.28
	Bunder Road	Cum	1	1329	0.9	1.8	2152.98
	Light House Hill Road	Cum	1	992	0.9	1.8	1607.04
	KMC Merкера Road	Cum	1	1600	0.9	1.8	2592.00
	Power Duct-Pipe Dia.225mm-RHS						
	Pandeshwar Road	Cum	-4	267	3.14	0.05	-167.68
	Rosario Church Road-1	Cum	-5	486	3.14	0.05	-381.51
	Rosario Church Road-2	Cum	-4	397	3.14	0.05	-249.32
	Bunder Road	Cum	0	0	3.14	0.05	0.00
	Light House Hill Road	Cum	-4	742	3.14	0.05	-465.98
	KMC Merкера Road	Cum	-4	800	3.14	0.05	-502.40
	Power Duct-Pipe Dia.225mm-LHS						
	Pandeshwar Road	Cum	-4	304	3.14	0.05	-190.91
	Rosario Church Road-1	Cum	-2	447	3.14	0.05	-140.36
	Rosario Church Road-2	Cum	0	397	3.14	0.05	0.00
	Bunder Road	Cum	-4	1329	3.14	0.05	-834.61
	Light House Hill Road	Cum	-4	250	3.14	0.05	-157.00
	KMC Merкера Road	Cum	-4	800	3.14	0.05	-502.40
	Power Duct-Pipe Dia.160mm-RHS						
	Pandeshwar Road	Cum	-5	267	3.14	0.05	-209.60
	Rosario Church Road-1	Cum	-4	486	3.14	0.05	-305.21
	Rosario Church Road-2	Cum	-4	397	3.14	0.05	-249.32
	Bunder Road	Cum	-4	0	3.14	0.05	0.00
	Light House Hill Road	Cum	-5	742	3.14	0.05	-582.47
	KMC Merкера Road	Cum	-5	800	3.14	0.05	-628.00
	Power Duct-Pipe Dia.160mm-LHS						
	Pandeshwar Road	Cum	-5	304	3.14	0.05	-238.64
	Rosario Church Road-1	Cum	-4	447	3.14	0.05	-280.72
	Rosario Church Road-2	Cum	-4	397	3.14	0.05	-249.32
	Bunder Road	Cum	-4	1329	3.14	0.05	-834.61
	Light House Hill Road	Cum	-5	250	3.14	0.05	-196.25
	KMC Merкера Road	Cum	-5	800	3.14	0.05	-628.00
	Dia 160 mm Pipe Volume	Cum	-5	2692	3.14	0.03	-1267.93
	Total Excavation for Chambers	Cum	1	4010.69			4010.69
	Deduct Vol of Chamber	Cum	-211	2.40	1.10	2.10	-1169.78
	Total Excavation for Electric Pole	Cum	1	335.34			335.34
	Ded. Vol of Concrete	Cum	-1	32.29			-32.29
	Total Excavation for Signal Pole	Cum	1	10.24			10.24
	Ded. Vol of Concrete	Cum	-1	1.50			-1.50
	Total Excavation for SWD	Cum	1	11971.76			11971.76
	Deducting the Volume of SWD						
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Cum	-1	271	0.6	1.19	-193.49

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	LHS-D2	Cum	-1	271	0.6	0.6	-97.56
	Rosario Church Road						
	Foundation						
	RHS-D4	Cum	-1	420	0.6	0.95	-239.40
	RHS-D5	Cum	-1	334	1.2	1.35	-541.08
	RHS-D5B	Cum	-1	43	0.6	0.6	-15.48
	RHS-D5A	Cum	-1	118	0.6	0.6	-42.48
	LHS-D3	Cum	-1	420	0.6	1.25	-315.00
	Bunder Road						
	Foundation						
	RHS-D6	Cum	-1	805	1.2	1.22	-1178.52
	RHS-D7	Cum	-1	316	1.5	1.23	-583.02
	RHS-D7A	Cum	-1	309	1.5	1.67	-774.05
	Light House Hill Road-1						
	Foundation						
	RHS-D8	Cum	-1	392	0.6	1.01	-237.55
	LHS-D9	Cum	-1	392	0.6	1.01	-237.55
	LHS-D13	Cum	-1	384	0.6	0.6	-138.24
	KMC Merkeria Road						
	Foundation						
	RHS-D10A	Cum	-1	577	0.75	1.23	-532.28
	RHS-D14	Cum	-1	150	0.6	0.6	-54.00
	LHS-10	Cum	-1	577	0.75	1.23	-532.28
					Total Qty.		10225.03
13	KSRRB 300-58. Compaction of original ground by mechanical means including filling in depression occurring during rolling including cost of all labour, HOM complete as per specifications. MORTH I Chapter 3 (KSRRB 18-19,SI No.19.64,Pg. No.147)						
	Paver block on Carriageway						
	Pandeshwar Road						
	RHS						
	Ch.130.0 to Ch.235.0	Sqm	1	105	1.66		174.30
	LHS						0.00
	Ch.20.0 to Ch.65.00	Sqm	1	45	1.81		81.45
	Ch.80.0 to Ch.135.0	Sqm	1	55	1		55.00
	Ch.145.0 to Ch.170.0	Sqm	1	25.39	1.25		31.74
	Ch.180.0 to Ch.195.0	Sqm	1	13.37	2.1		28.08
	Ch.200.0 to 270.0	Sqm	1	4.62	1.56		7.21
	Rosario Church Road-LHS						0.00
	Ch.60.0 to Ch.145.0	Sqm	1	84.54	2.46		207.97
	Ch.155.0 to Ch.260.0	Sqm	1	107	3.87		414.09
	Ch.265.0 to Ch.300.0	Sqm	1	34	2.73		92.82
	Ch.310.0 to Ch.330.0	Sqm	1	24.18	1.685		40.74
	Ch.335.0 to Ch.350.0	Sqm	1	14	1.45		20.30
	Ch.360.0 to Ch.390.0	Sqm	1	32.7	1.7		55.59
	Ch.400.0 to Ch.470.0	Sqm	1	68.63	3.44		236.09
	Rosario Church Road-Part II-LHS						0.00
	Ch.494.0 to Ch.520.0	Sqm	1	23	1.98		45.54
	Gate Entrance at Ch.520.0	Sqm	1	6.33	4.17		26.40
	Ch.525.0 to Ch.550.0	Sqm	1	25.96	4.6		119.42
	Ch.523.0 to Ch. 550.0	Sqm	1	4.23	26		109.98
	Gate Entrance at Ch.550	Sqm	1	7.54	3.73		28.12
	Ch.550.0 to Ch.565.0	Sqm	1	2.77	12.52		34.68
	Ch.570.0 to Ch.600.0	Sqm	1	2.23	27		60.21
	Ch.600.0 to Ch.640.0	Sqm	1	0.76	38		28.88
	Ch.640.0 to Ch.740.0	Sqm	1	102	0.45		45.90
	Ch.750.0 to Ch. 890.0	Sqm	1	158	1		158.00
	Rosario Church Road-Part II-RHS						0.00
	Ch.500-Odd shape	Sqm	1	2.18	7.5		16.35
	Ch.510.0 to Ch.570.0	Sqm	1	63	2.34		147.42
	Ch.570.0 to Ch.625.0	Sqm	1	56.45	2.32		130.96
	Ch.625.0 to Ch.698.0	Sqm	1	73.25	1.67		122.33
	Ch.700.0 to Ch.753.0	Sqm	1	51.57	1.02		52.60
	Ch.753.0 to Ch.880.0	Sqm	1	127	0.94		119.38
	Bunder Road-LHS						0.00
	Ch.0.0 to Ch. 125.0	Sqm	1	119	2.54		302.26
	Ch.125.1 to Ch. 160.0	Sqm	1	33	2.31		76.23
	Ch.160.1 to 172.0(including LHS footpath	Sqm	1	16	7.74		123.84
	Road at Ch.180.0 RHS Side Footpath	Sqm	1	15.61	1.44		22.48
	Ch. 180.0 to Ch.210.0	Sqm	1	27.69	0.94		26.03
	Ch.208.0 to Ch.223.0	Sqm	1	17.27	2.3		39.72
	Ch.223.0 to Ch.245.0	Sqm	1	28	1.51		42.28
	Road at Ch.250.0 LHS Side Footpath	Sqm	1	10	1.4		14.00
	Road at Ch.250.0 RHS Side Footpath	Sqm	1	10	7.2		72.00
	Ch.260.0 to Ch.280.0	Sqm	1	22.69	2.82		63.99
	Ch.280.0 to Ch.300.0	Sqm	1	21.1	2.8		59.08
	Ch.300.0 to Ch.340.0	Sqm	1	37	5.39		199.43
	Ch.345.0 to Ch.382.0	Sqm	1	38.65	7.09		274.03
	Ch.390.0 to Ch.440.0	Sqm	1	58.67	3.76		220.60

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.440.1 to Ch. 650.0	Sqm	1	120	1.2		144.00
	Ch. 690.0 to Ch.880.0	Sqm	1	183	0.5		91.50
	Ch.880.0 to Ch.1170.0	Sqm	1	86	2.2		189.20
	Ch.1170.0 to Ch.1212.0	Sqm	1	42.33	1.61		68.15
	Ch.1220.0 to 1280.0	Sqm	1	65.59	3.54		232.19
	Ch.1280.0 to 1320.0	Sqm	1	34.24	1.11		38.01
	Ch.1320.0 to Ch.1330.0	Sqm	1	7.54	3.11		23.45
	Bunder Road-RHS						
	Ch.0.0 to Ch. 18.0	Sqm	1	13.61	1.97		26.81
	Ch.18.0 to Ch.30.0	Sqm	1	13.44	1.645		22.11
	Ch.30.0 to Ch.50.0	Sqm	0.5	19.17	2.137		20.48
	Ch.50.0 to Ch.180.0	Sqm	1	130	3.31		430.30
	Ch.180.0 to Ch.245.0	Sqm	1	65	5.35		347.75
	Ch.250.0 to Ch.555.0	Sqm	1	305	2.6		793.00
	Ch.550 to Ch.580	Sqm	1	30	2.5		75.00
	Ch.710.0 to Ch.810	Sqm	1	100	3		300.00
	Ch.820.0 to Ch.992.0	Sqm	1	172	6.63		1140.36
	Ch.900.0 to Ch.1238.0	Sqm	1	338	1.2		405.60
	Ch.1238.0 to Ch.1336.0	Sqm	1	98	2.32		227.36
	Footpath						
	Pandeshwar Road						
	RHS Footpath						
	Ch.0.0 to 40.00	Sqm	1.00	40.00	2.21		88.32
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	2.46		1.93
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	3.35		2.63
	Ch.50.0 to 74.0	Sqm	1.00	24.64	1.81		44.48
	Sloping Portion-Quarter Circle	Sqm	1.00	4.22	1.00		4.22
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	3.03		2.38
	Ch.80.0 to 120.00	Sqm	1.00	40.00	1.98		79.00
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	4.88		3.83
	Ch.130.0- Ch.260.0	Sqm	1.00	130.00	1.62		210.60
	LHS Footpath						0.00
	Ch.20.0 to Ch.65.0	Sqm	1.00	45.00	1.80		81.00
	Ch.65.0 to Ch.130.0	Sqm	1.00	65.00	2.88		187.50
	Ch.130.0 to Ch.200.0	Sqm	1.00	70.00	2.01		140.65
	Rosario Church Road-I						0.00
	RHS						0.00
	Ch.70.0 to 284.0	Sqm	1.00	214.00	2.40		513.60
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	6.40		5.02
	Ch.90 Triangular Portion	Sqm	0.50	2.83	2.56		3.62
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	6.55		5.14
	Ch.300.0 to Ch.330.0	Sqm	1.00	29.72	2.40		71.33
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	3.39		2.66
	Ch.337.0 to Ch.405.0	Sqm	1.00	67.00	2.16		144.72
	Sloping Portion-Rectangular	Sqm	1.00	3.00	2.60		7.80
	Ch.420.0 to Ch.490.0	Sqm	1.00	75.00	2.40		180.00
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	6.40		5.02
	LHS						0.00
	Ch.60.0 to Ch.145.0	Sqm	1.00	81.00	2.60		210.60
	Sloping Portion-Rectangular	Sqm	1.00	2.70	2.50		6.75
	Sloping Portion-Rectangular	Sqm	1.00	3.56	3.56		12.67
	Ch.55.0 to 65.0-Trapezoidal	Sqm	1.00	10.00	4.28		42.80
	Ch.65.0 to Ch.260.0	Sqm	1.00	92.00	2.50		230.00
	Sloping Portion-Rectangular	Sqm	1.00	2.50	4.11		10.28
	Sloping Portion-Rectangular	Sqm	1.00	2.50	4.00		10.00
	Ch.270.0 to Ch.300.00	Sqm	1.00	28.20	2.50		70.50
	Ch.310.0 to Ch.330.0	Sqm	1.00	19.57	2.50		48.93
	Ch.340.0 to Ch.350.0	Sqm	1.00	9.70	2.50		24.25
	Ch.360.0 to Ch.390.0	Sqm	1.00	28.42	2.50		71.05
	Ch.400.0 to Ch.465.0	Sqm	1.00	65.50	2.50		163.75
	Light House Hill Road-LHS						
	Ch.0.0 to Ch.210.0	Sqm	1.00	210.00	3.76		789.60
	Ch.210.0 to Ch.260.0	Sqm	1.00	50.00	9.92		495.81
	Ch.240.0 to Ch.370.0	Sqm	1.00	130.00	2.04		265.66
	Ch.350.0 to Ch.500.0	Sqm	1.00	150.00	10.66		1599.00
	Ch.500 to Ch.670.0	Sqm	1.00	170.00	4.12		700.40
	Ch.650.0 to Ch.800.0	Sqm	1.00	150.00	2.25		337.50
	Light House Hill Road-RHS						
	Ch.0.0 to Ch.105.0	Sqm	1.00	105.00	2.82		296.10
	Ch.110.0 to Ch.170.0	Sqm	1.00	60.00	4.37		262.20
	Ch.170.0 to Ch.255.0	Sqm	1.00	85.00	4.38		372.30
	Ch.260.0 to Ch.770.0	Sqm	1.00	510.00	3.10		1581.00
	KMC Merkeria Road-LHS						
	Ch.0.0 to Ch.670.0	Sqm	1.00	670.00	3.15		2110.50
	KMC Merkeria Road-RHS						
	Ch.0.0 to Ch.90.0	Sqm	1.00	90.00	3.22		289.80
	Ch.90.0 to Ch.155.0	Sqm	1.00	65.00	3.48		226.20
	Ch.160.0 to Ch.300.0	Sqm	1.00	140.00	3.70		518.00

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.300.0 to Ch.470.0	Sqm	1.00	170.00	3.38		574.60
	Ch.470.0 to Ch.700.0	Sqm	1.00	230.00	3.77		867.10
	Footpath of Extension of Bibi alabi road						
	RHS						
	Ch.0.0 to Ch.100.0	Sqm	1.00	100.00	2.41		241.00
	LHS	Sqm					
	Ch.0.0 to Ch.70.0	Sqm	1.00	70.00	2.54		177.80
	Ch.75.00 to Ch.90.0	Sqm	1.00	15.00	2.80		42.00
	Concrete New Road						
	Pandeshwar Road						
	RHS						
	Ch.150.0 to Ch.260.0	Sqm	1	116	3.38		392.08
	LHS						
	Ch.150.0 to Ch.170.0	Sqm	1	23	3.09		71.07
	Ch.180.0 to Ch.205.0	Sqm	1	24.25	4.62		112.04
	Ch.210.0 to Ch.275.0	Sqm	1	68	1.65		112.20
	Rosario church Road-Part I						
	Junction area at Hamilton Road	Sqm	1	770	Area		770.00
	Ch.60.0 to 360.0	Sqm	1	300	9.975		2992.50
	Junction at Rosario Road and Pandeshwar Road	Sqm	1	903	Area		903.00
	Rosario church Road-Part II						
	Ch.780.0 to 900.0	Sqm	1	120	6.2		744.00
	Bunder Road						
	Ch.0.0 to Ch.1336.0	Sqm	1	1336	5.15		6880.40
	Light House Hill Road						
	Ch.0.0 to 100.0	Sqm	1	100	9.8		980.00
	Ch.100.0 to 210.0	Sqm	1	110	9.8		1078.00
	Ch.210.0 to Ch.340.0	Sqm	1	130	4.54		590.20
	Ch.350.0 to Ch.480.0	Sqm	1	130	5.84		759.20
	KMC Merkera Road						
	LHS						
	Ch.180.0 to Ch.320.0	Sqm	1	140	1.34		187.60
	Ch.350.0 to Ch.660.0	Sqm	1	310	2.36		731.60
	RHS						
	Ch.70.0 to Ch.310.0	Sqm	1	240	2.17		520.80
	Ch.310.0 to Ch.510.0	Sqm	1	200	2.81		562.00
	Extension of Bibi Alabi Road						
	Ch.0.0 to Ch.100.00	Sqm	1	100	7		700.00
		Sqm			Total Qty.		42323.06
14	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of M 15 Grade with OPC @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.53cum, machine mixed, concrete laid in layers not exceeding 15 ems. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM curing complete as per specifications. Specification No. KBS 4.1, 4.2 (KSRB 18-19,P.No.13, SI.No. 4.6)						
	Signal Pole RCC Pedstal at hamilton circle	Cum	4	1	1.00	0.10	0.40
	Electrical Pole	Cum	184	1.1	1.10	0.10	22.26
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Cum	1	271	1.8	0.10	48.78
	LHS-D2	Cum	1	271	1.8	0.10	48.78
	Rosario Church Road						
	Foundation						
	RHS-D4	Cum	1	420	1.2	0.10	50.40
	RHS-D5	Cum	1	334	1.8	0.10	60.12
	RHS-D5B	Cum	1	43	1.2	0.10	5.16
	RHS-D5A	Cum	1	118	1.2	0.10	14.16
	LHS-D3	Cum	1	420	1.2	0.10	50.40
	Bunder Road						
	Foundation						
	RHS-D6	Cum	1	805	1.8	0.10	144.90
	RHS-D7	Cum	1	316	2.1	0.10	66.36
	RHS-D7A	Cum	1	309	2.2	0.10	67.98
	Light House Hill Road-1						
	Foundation						
	RHS-D8	Cum	1	392	1.2	0.10	47.04
	LHS-D9	Cum	1	392	1.2	0.10	47.04
	LHS-D13	Cum	1	384	1.2	0.10	46.08
	KMC Merkera Road						
	Foundation						
	RHS-D10A	Cum	1	577	1.35	0.10	77.90
	RHS-D14	Cum	1	150	1.2	0.10	18.00
	LHS-10	Cum	1	577	1.25	0.10	72.13
	Extension of Bibi Alabi Road		0				
	RHS-15	Cum	1	100	1.65	0.10	16.50
	RCC Tree Guard at Rosario church	Cum	5	8	0.375	0.10	1.50
	Kerb Stone Footpath						
	Pandeshwar Road						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	RHS Footpath						
	Ch.0.0 to 40.00	Cum	1.00	40.00	0.27	0.10	1.06
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	0.67	0.10	0.05
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	0.90	0.10	0.07
	Ch.50.0 to 74.0	Cum	1.00	24.64	0.27	0.10	0.65
	Sloping Portion-Quarter Circle	Cum	1.00	4.22	0.27	0.10	0.11
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	0.82	0.10	0.06
	Ch.80.0 to 120.00	Cum	1.00	40.00	0.27	0.10	1.06
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	1.32	0.10	0.10
	Ch.130.0- Ch.260.0	Cum	1.00	130.00	0.27	0.10	3.45
	LHS Footpath						
	Ch.20.0 to Ch.65.0	Cum	1.00	45.00	0.27	0.10	1.19
	Ch.65.0 to Ch.130.0	Cum	1.00	65.00	0.27	0.10	1.72
	Ch.130.0 to Ch.200.0	Cum	1.00	70.00	0.27	0.10	1.86
	Pandeshwar Road Median (New and Extended)						
	Ch.140.0 to Ch.185.0	Cum	2.00	45.00	0.27	0.10	2.39
	Ch.187.0 to Ch.190.0	Cum	2.00	3.00	0.27	0.10	0.16
	Rosario Church Road-I						
	RHS						
	Ch.70.0 to 284.0	Cum	1.00	214.00	0.27	0.10	5.67
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	0.27	0.10	0.02
	Ch.90 Triangular Portion	Cum	0.50	2.83	0.27	0.10	0.04
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	0.27	0.10	0.02
	Ch.300.0 to Ch.330.0	Cum	1.00	29.72	0.27	0.10	0.79
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	0.27	0.10	0.02
	Ch.337.0 to Ch.405.0	Cum	1.00	67.00	0.27	0.10	1.78
	Sloping Portion-Rectangular	Cum	1.00	3.00	0.27	0.10	0.08
	Ch.420.0 to Ch.490.0	Cum	1.00	75.00	0.27	0.10	1.99
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	0.27	0.10	0.02
	LHS	Cum	0.00	0.00	0.27	0.10	0.00
	Ch.60.0 to Ch.145.0	Cum	1.00	81.00	0.27	0.10	2.15
	Sloping Portion-Rectangular	Cum	1.00	2.70	0.27	0.10	0.07
	Sloping Portion-Rectangular	Cum	1.00	3.56	0.27	0.10	0.09
	Ch.55.0 to 65.0-Trapezoidal	Cum	1.00	10.00	0.27	0.10	0.27
	Ch.65.0 to Ch.260.0	Cum	1.00	92.00	0.27	0.10	2.44
	Sloping Portion-Rectangular	Cum	1.00	2.50	0.27	0.10	0.07
	Sloping Portion-Rectangular	Cum	1.00	2.50	0.27	0.10	0.07
	Ch.270.0 to Ch.300.00	Cum	1.00	28.20	0.27	0.10	0.75
	Ch.310.0 to Ch.330.0	Cum	1.00	19.57	0.27	0.10	0.52
	Ch.340.0 to Ch.350.0	Cum	1.00	9.70	0.27	0.10	0.26
	Ch.360.0 to Ch.390.0	Cum	1.00	28.42	0.27	0.10	0.75
	Ch.400.0 to Ch.465.0	Cum	1.00	65.50	0.27	0.10	1.74
	Rosario Church Road-Part II-RHS						
	Ch.500-Odd shape	Cum	1.00	2.18	0.27	0.10	0.06
	Ch.510.0 to Ch.570.0	Cum	1.00	63.00	0.27	0.10	1.67
	Ch.570.0 to Ch.625.0	Cum	1.00	56.45	0.27	0.10	1.50
	Ch.625.0 to Ch.698.0	Cum	1.00	73.25	0.27	0.10	1.94
	Ch.700.0 to Ch.753.0	Cum	1.00	51.57	0.27	0.10	1.37
	Ch.753.0 to Ch.880.0	Cum	1.00	127.00	0.27	0.10	3.37
	Light House Hill Road-LHS						
	Ch.0.0 to Ch.210.0	Cum	1.00	210.00	0.27	0.10	5.57
	Ch.210.0 to Ch.260.0	Cum	1.00	50.00	0.27	0.10	1.33
	Ch.240.0 to Ch.370.0	Cum	1.00	130.00	0.27	0.10	3.45
	Ch.350.0 to Ch.500.0	Cum	1.00	150.00	0.27	0.10	3.98
	Ch.500 to Ch.670.0	Cum	1.00	170.00	0.27	0.10	4.51
	Ch.650.0 to Ch.800.0	Cum	1.00	150.00	0.27	0.10	3.98
	Light House Hill Road-RHS						
	Ch.0.0 to Ch.105.0	Cum	1.00	105.00	0.27	0.10	2.78
	Ch.110.0 to Ch.170.0	Cum	1.00	60.00	0.27	0.10	1.59
	Ch.170.0 to Ch.255.0	Cum	1.00	85.00	0.27	0.10	2.25
	Ch.260.0 to Ch.770.0	Cum	1.00	510.00	0.27	0.10	13.52
	KMC Merkera Road-LHS						
	Ch.0.0 to Ch.670.0	Cum	0.00	0.00	0.27	0.10	0.00
		Cum	1.00	670.00	0.27	0.10	17.76
	KMC Merkera Road-RHS						
	Ch.0.0 to Ch.90.0	Cum	1.00	90.00	0.27	0.10	2.39
	Ch.90.0 to Ch.155.0	Cum	1.00	65.00	0.27	0.10	1.72
	Ch.160.0 to Ch.300.0	Cum	1.00	140.00	0.27	0.10	3.71
	Ch.300.0 to Ch.470.0	Cum	1.00	170.00	0.27	0.10	4.51
	Ch.470.0 to Ch.700.0	Cum	1.00	230.00	0.27	0.10	6.10
		Cum			Total Qty.		1028.40

Sr. No.	Description	Unit	No's	L	B	H	Qty.
15	KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-1) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (SI.No.20.4 of KPWD SR 2018-19)						
e	Signal Pole RCC Pedstal at hamilton Circle	Cum	4	1	1	0.15	0.60
	Footpath						
	Pandeshwar Road						
	RHS Footpath						
	Ch.0.0 to 40.00	Cum	1.00	40.00	2.21	0.15	13.25
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	2.46	0.15	0.29
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	3.35	0.15	0.39
	Ch.50.0 to 74.0	Cum	1.00	24.64	1.81	0.15	6.67
	Sloping Portion-Quarter Circle	Cum	1.00	4.22	1.00	0.15	0.63
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	3.03	0.15	0.36
	Ch.80.0 to 120.00	Cum	1.00	40.00	1.98	0.15	11.85
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	4.88	0.15	0.58
	Ch.130.0- Ch.260.0	Cum	1.00	130.00	1.62	0.15	31.59
	LHS Footpath						
	Ch.20.0 to Ch.65.0	Cum	1.00	45.00	1.80	0.15	12.15
	Ch.65.0 to Ch.130.0	Cum	1.00	65.00	2.88	0.15	28.13
	Ch.130.0 to Ch.200.0	Cum	1.00	70.00	2.01	0.15	21.10
	Rosario Church Road-I						
	RHS						
	Ch.70.0 to 284.0	Cum	1.00	214.00	2.40	0.15	77.04
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	6.40	0.15	0.75
	Ch.90 Triangular Portion	Cum	0.50	2.83	2.56	0.15	0.54
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	6.55	0.15	0.77
	Ch.300.0 to Ch.330.0	Cum	1.00	29.72	2.40	0.15	10.70
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	3.39	0.15	0.40
	Ch.337.0 to Ch.405.0	Cum	1.00	67.00	2.16	0.15	21.71
	Sloping Portion-Rectangular	Cum	1.00	3.00	2.60	0.15	1.17
	Ch.420.0 to Ch.490.0	Cum	1.00	75.00	2.40	0.15	27.00
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	6.40	0.15	0.75
	LHS						
	Ch.60.0 to Ch.145.0	Cum	1.00	81.00	2.60	0.15	31.59
	Sloping Portion-Rectangular	Cum	1.00	2.70	2.50	0.15	1.01
	Sloping Portion-Rectangular	Cum	1.00	3.56	3.56	0.15	1.90
	Ch.55.0 to 65.0-Trapezoidal	Cum	1.00	10.00	4.28	0.15	6.42
	Ch.65.0 to Ch.260.0	Cum	1.00	92.00	2.50	0.15	34.50
	Sloping Portion-Rectangular	Cum	1.00	2.50	4.11	0.15	1.54
	Sloping Portion-Rectangular	Cum	1.00	2.50	4.00	0.15	1.50
	Ch.270.0 to Ch.300.00	Cum	1.00	28.20	2.50	0.15	10.58
	Ch.310.0 to Ch.330.0	Cum	1.00	19.57	2.50	0.15	7.34
	Ch.340.0 to Ch.350.0	Cum	1.00	9.70	2.50	0.15	3.64
	Ch.360.0 to Ch.390.0	Cum	1.00	28.42	2.50	0.15	10.66
	Ch.400.0 to Ch.465.0	Cum	1.00	65.50	2.50	0.15	24.56
	Light House Hill Road-LHS						
	Ch.0.0 to Ch.210.0	Cum	1.00	210.00	3.76	0.15	118.44
	Ch.210.0 to Ch.260.0	Cum	1.00	50.00	9.92	0.15	74.37
	Ch.240.0 to Ch.370.0	Cum	1.00	130.00	2.04	0.15	39.85
	Ch.350.0 to Ch.500.0	Cum	1.00	150.00	10.66	0.15	239.85
	Ch.500 to Ch.670.0	Cum	1.00	170.00	4.12	0.15	105.06
	Ch.650.0 to Ch.800.0	Cum	1.00	150.00	2.25	0.15	50.63
	Light House Hill Road-RHS						
	Ch.0.0 to Ch.105.0	Cum	1.00	105.00	2.82	0.15	44.42
	Ch.110.0 to Ch.170.0	Cum	1.00	60.00	4.37	0.15	39.33
	Ch.170.0 to Ch.255.0	Cum	1.00	85.00	4.38	0.15	55.85
	Ch.260.0 to Ch.770.0	Cum	1.00	510.00	3.10	0.15	237.15
	KMC Merкера Road-LHS						
	Ch.0.0 to Ch.670.0	Cum	1.00	670.00	3.15	0.15	316.58
	KMC Merкера Road-RHS						
	Ch.0.0 to Ch.90.0	Cum	1.00	90.00	3.22	0.15	43.47
	Ch.90.0 to Ch.155.0	Cum	1.00	65.00	3.48	0.15	33.93
	Ch.160.0 to Ch.300.0	Cum	1.00	140.00	3.70	0.15	77.70
	Ch.300.0 to Ch.470.0	Cum	1.00	170.00	3.38	0.15	86.19
	Ch.470.0 to Ch.700.0	Cum	1.00	230.00	3.77	0.15	130.07
	Paaver block on Carriageway						
	Rosario Church Road-LHS						
	Ch.60.0 to Ch.145.0	Cum	1	84.54	2.46	0.15	31.20
	Ch.155.0 to Ch.260.0	Cum	1	107	3.87	0.15	62.11
	Ch.265.0 to Ch.300.0	Cum	1	34	2.73	0.15	13.92
	Ch.310.0 to Ch.330.0	Cum	1	24.18	1.685	0.15	6.11

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.335.0 to Ch.350.0	Cum	1	14	1.45	0.15	3.05
	Ch.360.0 to Ch.390.0	Cum	1	32.7	1.7	0.15	8.34
	Ch.400.0 to Ch.470.0	Cum	1	68.63	3.44	0.15	35.41
	Rosario Church Road-Part II-LHS						
	Ch.494.0 to Ch.520.0	Cum	1	23	1.98	0.15	6.83
	Gate Entrance at Ch.520.0	Cum	1	6.33	4.17	0.15	3.96
	Ch.525.0 to Ch.550.0	Cum	1	25.96	4.6	0.15	17.91
	Ch.523.0 to Ch. 550.0	Cum	1	4.23	26	0.15	16.50
	Gate Entrance at Ch.550	Cum	1	7.54	3.73	0.15	4.22
	Ch.550.0 to Ch.565.0	Cum	1	2.77	12.52	0.15	5.20
	Ch.570.0 to Ch.600.0	Cum	1	2.23	27	0.15	9.03
	Ch.600.0 to Ch.640.0	Cum	1	0.76	38	0.15	4.33
	Ch.640.0 to Ch.740.0	Cum	1	102	0.45	0.15	6.89
	Ch.750.0 to Ch. 890.0	Cum	1	158	1	0.15	23.70
	Rosario Church Road-Part II-RHS						
	Ch.500-Odd shape	Cum	1	2.18	7.5	0.15	2.45
	Ch.510.0 to Ch.570.0	Cum	1	63	2.34	0.15	22.11
	Ch.570.0 to Ch.625.0	Cum	1	56.45	2.32	0.15	19.64
	Ch.625.0 to Ch.698.0	Cum	1	73.25	1.67	0.15	18.35
	Ch.700.0 to Ch.753.0	Cum	1	51.57	1.02	0.15	7.89
	Ch.753.0 to Ch.880.0	Cum	1	127	0.94	0.15	17.91
	Bunder Road-LHS						
	Ch.0.0 to Ch. 125.0	Cum	1	119	2.54	0.15	45.34
	Ch.125.1 to Ch. 160.0	Cum	1	33	2.31	0.15	11.43
	Ch.160.1 to 172.0(including LHS footpath	Cum	1	16	7.74	0.15	18.58
	Road at Ch.180.0 RHS Side Footpath	Cum	1	15.61	1.44	0.15	3.37
	Ch. 180.0 to Ch.210.0	Cum	1	27.69	0.94	0.15	3.90
	Ch.208.0 to Ch.223.0	Cum	1	17.27	2.3	0.15	5.96
	Ch.223.0 to Ch.245.0	Cum	1	28	1.51	0.15	6.34
	Road at Ch.250.0 LHS Side Footpath	Cum	1	10	1.4	0.15	2.10
	Road at Ch.250.0 RHS Side Footpath	Cum	1	10	7.2	0.15	10.80
	Ch.260.0 to Ch.280.0	Cum	1	22.69	2.82	0.15	9.60
	Ch.280.0 to Ch.300.0	Cum	1	21.1	2.8	0.15	8.86
	Ch.300.0 to Ch.340.0	Cum	1	37	5.39	0.15	29.91
	Ch.345.0 to Ch.382.0	Cum	1	38.65	7.09	0.15	41.10
	Ch.390.0 to Ch.440.0	Cum	1	58.67	3.76	0.15	33.09
	Ch.440.1 to Ch. 650.0	Cum	1	120	1.2	0.15	21.60
	Ch. 690.0 to Ch.880.0	Cum	1	183	0.5	0.15	13.73
	Ch.880.0 to Ch.1170.0	Cum	1	86	2.2	0.15	28.38
	Ch.1170.0 to Ch.1212.0	Cum	1	42.33	1.61	0.15	10.22
	Ch.1220.0 to 1280.0	Cum	1	65.59	3.54	0.15	34.83
	Ch.1280.0 to 1320.0	Cum	1	34.24	1.11	0.15	5.70
	Ch.1320.0 to Ch.1330.0	Cum	1	7.54	3.11	0.15	3.52
	Bunder Road-RHS						
	Ch.0.0 to Ch. 18.0	Cum	1	13.61	1.97	0.15	4.02
	Ch.18.0 to Ch.30.0	Cum	1	13.44	1.645	0.15	3.32
	Ch.30.0 to Ch.50.0	Cum	0.5	19.17	2.137	0.15	3.07
	Ch.50.0 to Ch.180.0	Cum	1	130	3.31	0.15	64.55
	Ch.180.0 to Ch.245.0	Cum	1	65	5.35	0.15	52.16
	Ch.250.0 to Ch.555.0	Cum	1	305	2.6	0.15	118.95
	Ch.550 to Ch.580	Cum	1	30	2.5	0.15	11.25
	Ch.710.0 to Ch.810	Cum	1	100	3	0.15	45.00
	Ch.820.0 to Ch.992.0	Cum	1	172	6.63	0.15	171.05
	Ch.900.0 to Ch.1238.0	Cum	1	338	1.2	0.15	60.84
	Ch.1238.0 to Ch.1336.0	Cum	1	98	2.32	0.15	34.10
	SWD						
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Cum	1	271	1.80	0.15	73.17
	LHS-D2	Cum	1	271	1.80	0.15	73.17
	Rosario Church Road						
	Foundation						
	RHS-D4	Cum	1	420	1.20	0.15	75.60
	RHS-D5	Cum	1	334	1.80	0.15	90.18
	RHS-D5B	Cum	1	43	1.20	0.15	7.74
	RHS-D5A	Cum	1	118	1.20	0.15	21.24
	LHS-D3	Cum	1	420	1.20	0.15	75.60
	Bunder Road						
	Foundation						
	RHS-D6	Cum	1	805	1.80	0.15	217.35
	RHS-D7	Cum	1	316	2.10	0.15	99.54
	RHS-D7A	Cum	1	309	2.20	0.15	101.97
	Light House Hill Road-1						
	Foundation						
	RHS-D8	Cum	1	392	1.20	0.15	70.56
	LHS-D9	Cum	1	392	1.20	0.15	70.56
	LHS-D13	Cum	1	384	1.20	0.15	69.12

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	KMC Merкера Road						
	Foundation						
	RHS-D10A	Cum	1	577	1.35	0.15	116.84
	RHS-D14	Cum	1	150	1.20	0.15	27.00
	LHS-10	Cum	1	577	1.25	0.15	108.19
	Extension of Bibi Alabi Road						
	RHS-15	Cum	1	100	1.65	0.15	24.75
	Concrete New Road						
	Pandeshwar Road						
	RHS						
	Ch.150.0 to Ch.260.0	Cum	1	116	3.38	0.15	58.81
	LHS						
	Ch.150.0 to Ch.170.0	Cum	1	23	3.09	0.15	10.66
	Ch.180.0 to Ch.205.0	Cum	1	24.25	4.62	0.15	16.81
	Ch.210.0 to Ch.275.0	Cum	1	68	1.65	0.15	16.83
	Rosario church Road-Part I						
	Junction area at Hamilton Road	Cum	1	770	Area	0.15	115.50
	Ch.60.0 to 360.0	Cum	1	300	9.975	0.15	448.88
	Junction at Rosario Road and Pandeshwar Road	Cum	1	903	Area	0.15	135.45
	Rosario church Road-Part II						
	Ch.780.0 to 900.0	Cum	1	120	6.2	0.15	111.60
	Bunder Road						
	Ch.0.0 to Ch.1336.0	Cum	1	1336	6.7	0.15	1342.68
	Light House Hill Road						
	Ch.10.0 to 100.0	Cum	1	93	1.13	0.15	15.76
	Ch.100.0 to 210.0	Cum	1	175	1	0.15	26.25
	Ch.210.0 to Ch.340.0	Cum	1	130	4.54	0.15	88.53
	Ch.350.0 to Ch.480.0	Cum	1	130	5.84	0.15	113.88
	KMC Merкера Road						
	LHS						
	Ch.180.0 to Ch.320.0	Cum	1	140	1.34	0.15	28.14
	Ch.350.0 to Ch.660.0	Cum	1	310	2.36	0.15	109.74
	RHS						
	Ch.70.0 to Ch.310.0	Cum	1	240	2.17	0.15	78.12
	Ch.310.0 to Ch.510.0	Cum	1	200	2.81	0.15	84.30
	Extension of Bibi Alabi Road						
	Ch.0.0 to Ch.100.00	Cum	1	100	7	0.15	105.00
	Footpath of Extension of Bibi alabi road						
	RHS						
	Ch.0.0 to Ch.100.0	Cum	1	100	2.41	0.15	36.15
	LHS						0.00
	Ch.0.0 to Ch.70.0	Cum	1	70	2.54	0.15	26.67
	Ch.75.00 to Ch.90.0	Cum	1	15	2.8	0.15	6.30
		Cum			Total Qty.		7658.91
16	KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters conforming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnspillers, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (KSRB 18-19,Page No 14,Sl No :4.10)						
	Signal Pole RCC Pedstal at Hamilton Circle						
	Base	Cum	4	1.00	1.00	0.20	0.80
	Column	Cum	4	0.50	0.50	0.70	0.70
	Electrical Pole						
	Foundation	Cum	184	0.75	0.75	0.20	20.70
	Column	Cum	184	0.3	0.30	0.70	11.59
	SWD						
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Cum	1	271	1.20	0.15	48.78
	LHS-D2	Cum	1	271	1.20	0.15	48.78
	Wall-SWD						
	RHS-D1	Cum	2	271	0.20	1.19	129.00
	LHS-D2	Cum	2	271	0.20	0.60	65.04
	Top Slab						
	RHS-D1	Cum	1	271	1.00	0.20	54.20
	LHS-D2	Cum	1	271	1.00	0.20	54.20
	Deduction of Access Cover						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	RHS-D1	Cum	-54	0.60	0.45	0.20	-2.92
	LHS-D2	Cum	-54	0.60	0.45	0.20	-2.92
	Rosario Church Road						
	Foundation						
	RHS-D4	Cum	1	420	1.20	0.15	75.60
	RHS-D5	Cum	1	334	1.80	0.15	90.18
	RHS-D5B	Cum	1	43	1.20	0.15	7.74
	RHS-D5A	Cum	1	118	1.20	0.15	21.24
	LHS-D3	Cum	1	420	1.20	0.15	75.60
	Wall						
	RHS-D4	Cum	2	420	0.20	0.95	159.60
	RHS-D5	Cum	2	334	0.20	1.35	180.36
	RHS-D5B	Cum	2	43	0.20	0.60	10.32
	RHS-D5A	Cum	2	118	0.20	0.60	28.32
	LHS-D3	Cum	2	420	0.20	1.25	210.00
	Top Slab						
	RHS-D4	Cum	1	420	1.00	0.20	84.00
	RHS-D5	Cum	1	334	1.60	0.20	106.88
	RHS-D5B	Cum	1	43	1.00	0.20	8.60
	RHS-D5A	Cum	1	118	1.00	0.20	23.60
	LHS-D3	Cum	1	420	1.00	0.20	84.00
	Deduction of Access Cover						
	RHS-D4	Cum	-84	0.60	0.45	0.20	-4.54
	RHS-D5	Cum	-67	0.60	0.45	0.20	-3.62
	RHS-D5B	Cum	-9	0.60	0.45	0.20	-0.49
	RHS-D5A	Cum	-24	0.60	0.45	0.20	-1.30
	LHS-D3	Cum	-84	0.60	0.45	0.20	-4.54
	Bunder Road						
	Foundation						
	RHS-D6	Cum	1	805	1.80	0.15	217.35
	RHS-D7	Cum	1	316	2.10	0.15	99.54
	RHS-D7A	Cum	1	309	2.20	0.15	101.97
	Wall						
	RHS-D6	Cum	2	805	0.20	1.22	392.84
	RHS-D7	Cum	2	316	0.20	1.23	155.47
	RHS-D7A	Cum	2	309	0.25	1.67	258.02
	Top Slab						
	RHS-D6	Cum	1	805	1.60	0.20	257.60
	RHS-D7	Cum	1	316	1.90	0.20	120.08
	RHS-D7A	Cum	1	309	2.00	0.20	123.60
	Deduction of Access Cover						
	RHS-D6	Cum	-161	0.60	0.45	0.20	-8.69
	RHS-D7	Cum	-63	0.60	0.45	0.20	-3.40
	RHS-D7A	Cum	-62	0.60	0.45	0.20	-3.35
	Light House Hill Road-1						
	Foundation						
	RHS-D8	Cum	1	392	1.20	0.15	70.56
	LHS-D9	Cum	1	392	1.20	0.15	70.56
	LHS-D13	Cum	1	384	1.20	0.15	69.12
	Wall						
	RHS-D8	Cum	2	392	0.20	1.01	158.37
	LHS-D9	Cum	2	392	0.20	1.01	158.37
	LHS-D13	Cum	2	384	0.20	0.60	92.16
	Top Slab						
	RHS-D8	Cum	1	392	1.00	0.20	78.40
	LHS-D9	Cum	1	392	1.00	0.20	78.40
	LHS-D13	Cum	1	384	1.00	0.20	76.80
	Deduction of Access Cover						
	RHS-D8	Cum	-78	0.60	0.45	0.20	-4.21
	LHS-D9	Cum	-78	0.60	0.45	0.20	-4.21
	LHS-D13	Cum	-77	0.60	0.45	0.20	-4.16
	KMC Merker Road						
	Foundation						
	RHS-D10A	Cum	1	577	1.35	0.15	116.84
	RHS-D14	Cum	1	150	1.20	0.15	27.00
	LHS-10	Cum	1	577	1.25	0.15	108.19
	Wall						
	RHS-D10A	Cum	2	577	0.20	1.23	283.88
	RHS-D14	Cum	2	150	0.20	0.60	36.00
	LHS-10	Cum	2	577	0.20	1.23	283.88
	Top Slab						
	RHS-D10A	Cum	1	577	1.15	0.20	132.71
	RHS-D14	Cum	1	150	1.00	0.20	30.00
	LHS-10	Cum	1	577	1.05	0.20	121.17
	Deduction of Access Cover						
	RHS-D10A	Cum	-115	0.60	0.45	0.20	-6.21
	RHS-D14	Cum	-30	0.60	0.45	0.20	-1.62
	LHS-10	Cum	-115	0.60	0.45	0.20	-6.21

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Extension of Bibi Alabi Road						
	Foundation						
	RHS-D15	Cum	1	100	1.35	0.15	20.25
	Wall						
	RHS-D15	Cum	2	100	1.20	0.20	48.00
	Top Slab						
	RHS-D15	Cum	1	100	1.15	0.20	23.00
	Deduction of Access Cover						
	RHS-D15	Cum	-20	0.60	0.45	0.20	-1.08
	Electrical Chamber						
	Foundation	Cum	211	2.70	1.80	0.20	205.09
	Long Wall	Cum	422	2.40	0.20	2.10	425.38
	Short Wall	Cum	422	1.10	0.20	2.10	194.96
	RCC Tree Guard at Rosario church	Cum	5	8.00	0.18	1.05	7.35
	Footpath Beam	Cum	1	6014.00	0.15	0.20	180.42
	Box Culvert						
	Rosario Church						
	Box Culvert-Slab	Cum	10	20.00	0.20	2.00	80.00
	Box Culvert-Wall	Cum	10	20.00	0.20	1.50	60.00
	Bunder Road						
	Box Culvert-Slab	Cum	10	20.00	0.20	2.00	80.00
	Box Culvert-Wall	Cum	10	20.00	0.20	1.50	60.00
		Cum				Total Qty.	6639.72
17	KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (KSRB 18-19,Page No 16,SI No : 4.28)						
	Signal Pole RCC Pedstal at hamilton circle						
	Base	Sqm	16	1.00		0.20	3.20
	Column	Sqm	16	0.50		0.70	5.60
	Electrical Pole						
	Foundation	Sqm	736	0.75		0.20	110.40
	Column	Sqm	736	0.3		0.70	154.56
	SWD						
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Sqm	2	271		0.15	81.30
	LHS-D2	Sqm	1	271		0.15	40.65
	Wall-SWD						
	RHS-D1	Sqm	4	271		1.19	1289.96
	LHS-D2	Sqm	4	271		0.6	650.40
	Top Slab-Bottom						
	RHS-D1	Sqm	1	271	1		271.00
	LHS-D2	Sqm	1	271	1		271.00
	Top Slab-Sides						
	RHS-D1	Sqm	2	271		0.2	108.40
	LHS-D2	Sqm	2	271		0.2	108.40
	Deduction of Access Cover						
	RHS-D1	Sqm	-54	0.6	0.45		-14.58
	LHS-D2	Sqm	-54	0.6	0.45		-14.58
	Rosario Church Road						
	Foundation						
	RHS-D4	Sqm	2	420		0.15	126.00
	RHS-D5	Sqm	2	334		0.15	100.20
	RHS-D5B	Sqm	2	43		0.15	12.90
	RHS-D5A	Sqm	2	118		0.15	35.40
	LHS-D3	Sqm	2	420		0.15	126.00
	Wall						
	RHS-D4	Sqm	4	420		0.95	1596.00
	RHS-D5	Sqm	4	334		1.35	1803.60
	RHS-D5B	Sqm	4	43		0.6	103.20
	RHS-D5A	Sqm	4	118		0.6	283.20
	LHS-D3	Sqm	4	420		1.25	2100.00
	Top Slab-Bottom						
	RHS-D4	Sqm	1	420	1		420.00
	RHS-D5	Sqm	1	334	1.6		534.40
	RHS-D5B	Sqm	1	43	1		43.00
	RHS-D5A	Sqm	1	118	1		118.00
	LHS-D3	Sqm	1	420	1		420.00
	Top Slab-Sides						
	RHS-D4	Sqm	2	420		0.2	168.00
	RHS-D5	Sqm	2	334		0.2	133.60
	RHS-D5B	Sqm	2	43		0.2	17.20
	RHS-D5A	Sqm	2	118		0.2	47.20
	LHS-D3	Sqm	2	420		0.2	168.00
	Deduction of Access Cover						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	RHS-D4	Sqm	-84	0.6	0.45		-22.68
	RHS-D5	Sqm	-67	0.6	0.45		-18.09
	RHS-D5B	Sqm	-9	0.6	0.45		-2.43
	RHS-D5A	Sqm	-24	0.6	0.45		-6.48
	LHS-D3	Sqm	-84	0.6	0.45		-22.68
	Bunder Road						
	Foundation						
	RHS-D6	Sqm	1	805		0.15	120.75
	RHS-D7	Sqm	1	316		0.15	47.40
	RHS-D7A	Sqm	1	309		0.15	46.35
	Wall						0.00
	RHS-D6	Sqm	4	805		1.22	3928.40
	RHS-D7	Sqm	4	316		1.23	1554.72
	RHS-D7A	Sqm	4	309		1.67	2064.12
	Top Slab-Bottom						0.00
	RHS-D6	Sqm	1	805	1.6		1288.00
	RHS-D7	Sqm	1	316	1.9		600.40
	RHS-D7A	Sqm	1	309	2		618.00
	Top Slab-Sides						0.00
	RHS-D6	Sqm	2	805		0.2	322.00
	RHS-D7	Sqm	2	316		0.2	126.40
	RHS-D7A	Sqm	2	309		0.2	123.60
	Deduction of Access Cover						0.00
	RHS-D6	Sqm	-161	0.6	0.45		-43.47
	RHS-D7	Sqm	-63	0.6	0.45		-17.01
	RHS-D7A	Sqm	-62	0.6	0.45		-16.74
	Light House Hill Road-1						
	Foundation						
	RHS-D8	Sqm	1	392		0.15	58.80
	LHS-D9	Sqm	1	392		0.15	58.80
	LHS-D13	Sqm	1	384		0.15	57.60
	Wall						
	RHS-D8	Sqm	4	392		1.01	1583.68
	LHS-D9	Sqm	4	392		1.01	1583.68
	LHS-D13	Sqm	4	384		0.6	921.60
	Top Slab-Bottom						
	RHS-D8	Sqm	1	392	1		392.00
	LHS-D9	Sqm	1	392	1		392.00
	LHS-D13	Sqm	1	384	1		384.00
	Top Slab-Sides						
	RHS-D8	Sqm	2	392		0.2	156.80
	LHS-D9	Sqm	2	392		0.2	156.80
	LHS-D13	Sqm	2	384		0.2	153.60
	Deduction of Access Cover						
	RHS-D8	Sqm	-78	0.6	0.45		-21.06
	LHS-D9	Sqm	-78	0.6	0.45		-21.06
	LHS-D13	Sqm	-77	0.6	0.45		-20.79
	KMC Merkera Road						
	Foundation						
	RHS-D10A	Sqm	1	577		0.15	86.55
	RHS-D14	Sqm	1	150		0.15	22.50
	LHS-10	Sqm	1	577		0.15	86.55
	Wall						
	RHS-D10A	Sqm	4	577		1.23	2838.84
	RHS-D14	Sqm	4	150		0.6	360.00
	LHS-10	Sqm	4	577		1.23	2838.84
	Top Slab-Bottom						
	RHS-D10A	Sqm	1	577	1.15		663.55
	RHS-D14	Sqm	1	150	1		150.00
	LHS-10	Sqm	1	577	1.05		605.85
	Top Slab-Sides						
	RHS-D10A	Sqm	2	577		0.2	230.80
	RHS-D14	Sqm	2	150		0.2	60.00
	LHS-10	Sqm	2	577		0.2	230.80
	Deduction of Access Cover						
	RHS-D10A	Sqm	-115	0.6	0.45		-31.05
	RHS-D14	Sqm	-30	0.6	0.45		-8.10
	LHS-10	Sqm	-115	0.6	0.45		-31.05
	Extension of Bibi Alabi Road						
	Foundation						
	RHS-D15	Sqm	2	100		0.15	30.00
	Wall						
	RHS-D15	Sqm	4	100	1.20		480.00
	Top Slab						
	RHS-D15	Sqm	1	100	0.75		75.00
	Deduction of Access Cover						
	RHS-D15	Sqm	-20	0.60	0.45		-5.40
	Electrical Chamber						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Foundation-Long Side	Sqm	422	2.70		0.20	227.88
	Foundation-Short Side	Sqm	422	1.80		0.20	151.92
	Long Wall	Sqm	844	2.40		2.10	4253.76
	Short Wall	Sqm	844	1.10		2.10	1949.64
	Tree Guard	Sqm	10	8.00		1.05	84.00
	Footpath Beam-side	Sqm	1	6014.00		0.20	1202.80
	Box Culvert						0.00
	Rosario Church						0.00
	Box Culvert-Slab	Sqm	10	20		2	400.00
	Box Culvert-Wall	Sqm	20	20		1.5	600.00
	Bunder Road						0.00
	Box Culvert-Slab	Sqm	10	20		2	400.00
	Box Culvert-Wall	Sqm	20	20		1.5	600.00
		Sqm				Total Qty.	46502.30
18	KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500 (KSRB 18-19,Page No 18,SI No : 4.46.2)			Cum	Kg/Cum	Kg	MT
	Signal Footing	MT	1	0.80	50.00	40.00	0.04
	Signal Column	MT	1	0.70	50.00	35.00	0.04
	Electrical Pole-Pedstal-Footing	MT	1	20.70	60.00	1242.00	1.24
	Electrical Pole-Pedstal-Column	MT	1	11.59	60.00	695.52	0.70
	SWD and Electrical Chamber	MT	1	6138.15	80.00	491051.92	491.05
	Footpath Beam	MT	1	180.42	40.00	7216.80	7.22
	Tree Guard	MT	1	7.35	40.00	294.00	0.29
	Box Culvert	MT	1	280.00	100.00	28000.00	28.00
		MT		6639.71	-0.01	Total	528.58
	Concrete Pavement Layer						
19	KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305 (KSRB 18-19,Page No 146,SI No : 19.62 & 17.4)						
	Pandeshwar Road						
	RHS						
	Ch.150.0 to Ch.260.0	Cum	1	116	3.38	0.50	196.04
	LHS						
	Ch.150.0 to Ch.170.0	Cum	1	23	3.09	0.50	35.54
	Ch.180.0 to Ch.205.0	Cum	1	24.25	4.62	0.50	56.02
	Ch.210.0 to Ch.275.0	Cum	1	68	1.65	0.50	56.10
	Rosario church Road-Part I						
	Junction area at Hamilton Road	Cum	1	770	Area	0.50	385.00
	Ch.60.0 to 360.0	Cum	1	300	9.975	0.50	1496.25
	Junction at Rosario Road and Pandeshwar Road	Cum	1	903	Area	0.50	451.50
	Rosario church Road-Part II						
	Ch.780.0 to 900.0	Cum	1	120	6.2	0.50	372.00
	Bunder Road						
	Ch.0.0 to Ch.1336.0	Cum	1	1336	5.15	0.50	3440.20
	Light House Hill Road						
	Ch.0.0 to 100.0	Cum	1	100	9.8	0.50	490.00
	Ch.100.0 to 210.0	Cum	1	110	9.8	0.50	539.00
	Ch.210.0 to Ch.340.0	Cum	1	130	4.54	0.50	295.10
	Ch.350.0 to Ch.480.0	Cum	1	130	5.84	0.50	379.60
	KMC Merkera Road						
	LHS						
	Ch.180.0 to Ch.320.0	Cum	1	140	1.34	0.50	93.80
	Ch.350.0 to Ch.660.0	Cum	1	310	2.36	0.50	365.80
	RHS						
	Ch.70.0 to Ch.310.0	Cum	1	240	2.17	0.50	260.40
	Ch.310.0 to Ch.510.0	Cum	1	200	2.81	0.50	281.00
	Humpankatta Junction						
	Extension of Bibi Alabi Road						
	Ch.0.0 to Ch.100.00	Cum	1	100	7	0.50	350.00
		Cum				Total	10845.09
	Consider only 30% of the Total Qty. For Subgrade	Cum					3253.53

Sr. No.	Description	Unit	No's	L	B	H	Qty.
20	KSRRB M600-1.Providing and Constructing dry lean cement concrete M15 mix CC 1:5:10 base with OPC 25mm and down size graded granite metal coarse aggregate at 0.86cum and fine aggregates @0.58cum over a prepared sub-base, coarse and fine aggregate conforming to IS: 383-2016,aggregate cement ratio not to exceed 15:1, Aggregate gradation after blending to be as per Table 600-1,optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver, compacting with 8-10 tonnes vibratory roller, finishing and curing complete as per specifications. Clause 601of MORTH V Revision and IS 456 Table-5 -do- with OPC at 150 kg/cum and coarse aggregate 0.86cum, fine aggregate 0.58cum using Concrete Batch mix Plant at 75 cum/hr capacity with Slip form paver with electronic sensor. (KSRRB 18-19,Page No 174,SI No : 22.1.1)						
	Paver block on Carriageway						
	Rosario Church Road-LHS						
	Ch.60.0 to Ch.145.0	Cum	1	84.54	2.46	0.1	20.80
	Ch.155.0 to Ch.260.0	Cum	1	107	3.87	0.1	41.41
	Ch.265.0 to Ch.300.0	Cum	1	34	2.73	0.1	9.28
	Ch.310.0 to Ch.330.0	Cum	1	24.18	1.685	0.1	4.07
	Ch.335.0 to Ch.350.0	Cum	1	14	1.45	0.1	2.03
	Ch.360.0 to Ch.390.0	Cum	1	32.7	1.7	0.1	5.56
	Ch.400.0 to Ch.470.0	Cum	1	68.63	3.44	0.1	23.61
	Rosario Church Road-Part II-LHS						
	Ch.494.0 to Ch.520.0	Cum	1	23	1.98	0.1	4.55
	Gate Entrance at Ch.520.0	Cum	1	6.33	4.17	0.1	2.64
	Ch.525.0 to Ch.550.0	Cum	1	25.96	4.6	0.1	11.94
	Ch.523.0 to Ch. 550.0	Cum	1	4.23	26	0.1	11.00
	Gate Entrance at Ch.550	Cum	1	7.54	3.73	0.1	2.81
	Ch.550.0 to Ch.565.0	Cum	1	2.77	12.52	0.1	3.47
	Ch.570.0 to Ch.600.0	Cum	1	2.23	27	0.1	6.02
	Ch.600.0 to Ch.640.0	Cum	1	0.76	38	0.1	2.89
	Ch.640.0 to Ch.740.0	Cum	1	102	0.45	0.1	4.59
	Ch.750.0 to Ch. 890.0	Cum	1	158	1	0.1	15.80
	Rosario Church Road-Part II-RHS						
	Ch.500-Odd shape	Cum	1	2.18	7.5	0.1	1.64
	Ch.510.0 to Ch.570.0	Cum	1	63	2.34	0.1	14.74
	Ch.570.0 to Ch.625.0	Cum	1	56.45	2.32	0.1	13.10
	Ch.625.0 to Ch.698.0	Cum	1	73.25	1.67	0.1	12.23
	Ch.700.0 to Ch.753.0	Cum	1	51.57	1.02	0.1	5.26
	Ch.753.0 to Ch.880.0	Cum	1	127	0.94	0.1	11.94
	Bunder Road-LHS						
	Ch.0.0 to Ch. 125.0	Cum	1	119	2.54	0.1	30.23
	Ch.125.1 to Ch. 160.0	Cum	1	33	2.31	0.1	7.62
	Ch.160.1 to 172.0(including LHS footpath	Cum	1	16	7.74	0.1	12.38
	Road at Ch.180.0 RHS Side Footpath	Cum	1	15.61	1.44	0.1	2.25
	Ch. 180.0 to Ch.210.0	Cum	1	27.69	0.94	0.1	2.60
	Ch.208.0 to Ch.223.0	Cum	1	17.27	2.3	0.1	3.97
	Ch.223.0 to Ch.245.0	Cum	1	28	1.51	0.1	4.23
	Road at Ch.250.0 LHS Side Footpath	Cum	1	10	1.4	0.1	1.40
	Road at Ch.250.0 RHS Side Footpath	Cum	1	10	7.2	0.1	7.20
	Ch.260.0 to Ch.280.0	Cum	1	22.69	2.82	0.1	6.40
	Ch.280.0 to Ch.300.0	Cum	1	21.1	2.8	0.1	5.91
	Ch.300.0 to Ch.340.0	Cum	1	37	5.39	0.1	19.94
	Ch.345.0 to Ch.382.0	Cum	1	38.65	7.09	0.1	27.40
	Ch.390.0 to Ch.440.0	Cum	1	58.67	3.76	0.1	22.06
	Ch.440.1 to Ch. 650.0	Cum	1	120	1.2	0.1	14.40
	Ch. 690.0 to Ch.880.0	Cum	1	183	0.5	0.1	9.15
	Ch.880.0 to Ch.1170.0	Cum	1	86	2.2	0.1	18.92
	Ch.1170.0 to Ch.1212.0	Cum	1	42.33	1.61	0.1	6.82
	Ch.1220.0 to 1280.0	Cum	1	65.59	3.54	0.1	23.22
	Ch.1280.0 to 1320.0	Cum	1	34.24	1.11	0.1	3.80
	Ch.1320.0 to Ch.1330.0	Cum	1	7.54	3.11	0.1	2.34
	Bunder Road-RHS						0.00
	Ch.0.0 to Ch. 18.0	Cum	1	13.61	1.97	0.1	2.68
	Ch.18.0 to Ch.30.0	Cum	1	13.44	1.645	0.1	2.21
	Ch.30.0 to Ch.50.0	Cum	0.5	19.17	2.137	0.1	2.05
	Ch.50.0 to Ch.180.0	Cum	1	130	3.31	0.1	43.03
	Ch.180.0 to Ch.245.0	Cum	1	65	5.35	0.1	34.78
	Ch.250.0 to Ch.555.0	Cum	1	305	2.6	0.1	79.30
	Ch.550 to Ch.580	Cum	1	30	2.5	0.1	7.50
	Ch.710.0 to Ch.810	Cum	1	100	3	0.1	30.00
	Ch.820.0 to Ch.992.0	Cum	1	172	6.63	0.1	114.04
	Ch.900.0 to Ch.1238.0	Cum	1	338	1.2	0.1	40.56
	Ch.1238.0 to Ch.1336.0	Cum	1	98	2.32	0.1	22.74
	DLC for Pavement						
	Pandeshwar Road						
	RHS						
	Ch.150.0 to Ch.260.0	Cum	1	116	3.38	0.10	39.21
	LHS						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.150.0 to Ch.170.0	Cum	1	23	3.09	0.10	7.11
	Ch.180.0 to Ch.205.0	Cum	1	24.25	4.62	0.10	11.20
	Ch.210.0 to Ch.275.0	Cum	1	68	1.65	0.10	11.22
	Rosario church Road-Part I						
	Junction area at Hamilton Road	Cum	1	770	Area	0.10	77.00
	Ch.60.0 to 360.0	Cum	1	300	9.975	0.10	299.25
	Junction at Rosario Road and Pandeshwar Road	Cum	1	903	Area	0.10	90.30
	Rosario church Road-Part II						
	Ch.780.0 to 900.0	Cum	1	120	6.2	0.10	74.40
	Bunder Road						
	Ch.0.0 to Ch.1336.0	Cum	1	1336	5.15	0.10	688.04
	Light House Hill Road						
	Ch.0.0 to 100.0	Cum	1	100	9.8	0.10	98.00
	Ch.100.0 to 210.0	Cum	1	110	9.8	0.10	107.80
	Ch.210.0 to Ch.340.0	Cum	1	130	4.54	0.10	59.02
	Ch.350.0 to Ch.480.0	Cum	1	130	5.84	0.10	75.92
	KMC Merkera Road						
	LHS						
	Ch.180.0 to Ch.320.0	Cum	1	140	1.34	0.10	18.76
	Ch.350.0 to Ch.660.0	Cum	1	310	2.36	0.10	73.16
	RHS						
	Ch.70.0 to Ch.310.0	Cum	1	240	2.17	0.10	52.08
	Ch.310.0 to Ch.510.0	Cum	1	200	2.81	0.10	56.20
	Extension of Bibi Alabi Road						
	Ch.0.0 to Ch.100.00	Cum	1	100	7	0.10	70.00
		Cum			Total Qty.		2751.17
21	KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per MORTH specifications Clause 601. (RA attached)						
	Pandeshwar Road						
	RHS Footpath						
	Ch.0.0 to 40.00	Cum	1.00	40.00	2.21	0.10	8.83
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	2.46	0.10	0.19
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	3.35	0.10	0.26
	Ch.50.0 to 74.0	Cum	1.00	24.64	1.81	0.10	4.45
	Sloping Portion-Quarter Circle	Cum	1.00	4.22	1.00	0.10	0.42
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	3.03	0.10	0.24
	Ch.80.0 to 120.00	Cum	1.00	40.00	1.98	0.10	7.90
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	4.88	0.10	0.38
	Ch.130.0- Ch.260.0	Cum	1.00	130.00	1.62	0.10	21.06
	LHS Footpath						
	Ch.20.0 to Ch.65.0	Cum	1.00	45.00	1.80	0.10	8.10
	Ch.65.0 to Ch.130.0	Cum	1.00	65.00	2.88	0.10	18.75
	Ch.130.0 to Ch.200.0	Cum	1.00	70.00	2.01	0.10	14.07
	Rosario Church Road-I						
	RHS						
	Ch.70.0 to 284.0	Cum	1.00	214.00	2.40	0.10	51.36
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	6.40	0.10	0.50
	Ch.90 Triangular Portion	Cum	0.50	2.83	2.56	0.10	0.36
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	6.55	0.10	0.51
	Ch.300.0 to Ch.330.0	Cum	1.00	29.72	2.40	0.10	7.13
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	3.39	0.10	0.27
	Ch.337.0 to Ch.405.0	Cum	1.00	67.00	2.16	0.10	14.47
	Sloping Portion-Rectangular	Cum	1.00	3.00	2.60	0.10	0.78
	Ch.420.0 to Ch.490.0	Cum	1.00	75.00	2.40	0.10	18.00
	Sloping Portion-Quarter Circle	Cum	0.25	3.14	6.40	0.10	0.50
	LHS						
	Ch.60.0 to Ch.145.0	Cum	1.00	81.00	2.60	0.10	21.06
	Sloping Portion-Rectangular	Cum	1.00	2.70	2.50	0.10	0.68
	Sloping Portion-Rectangular	Cum	1.00	3.56	3.56	0.10	1.27
	Ch.55.0 to 65.0-Trapezoidal	Cum	1.00	10.00	4.28	0.10	4.28
	Ch.65.0 to Ch.260.0	Cum	1.00	92.00	2.50	0.10	23.00
	Sloping Portion-Rectangular	Cum	1.00	2.50	4.11	0.10	1.03
	Sloping Portion-Rectangular	Cum	1.00	2.50	4.00	0.10	1.00
	Ch.270.0 to Ch.300.00	Cum	1.00	28.20	2.50	0.10	7.05
	Ch.310.0 to Ch.330.0	Cum	1.00	19.57	2.50	0.10	4.89
	Ch.340.0 to Ch.350.0	Cum	1.00	9.70	2.50	0.10	2.43
	Ch.360.0 to Ch.390.0	Cum	1.00	28.42	2.50	0.10	7.11
	Ch.400.0 to Ch.465.0	Cum	1.00	65.50	2.50	0.10	16.38
	Light House Hill Road-LHS						
	Ch.0.0 to Ch.210.0	Cum	1.00	210.00	3.76	0.10	78.96
	Ch.210.0 to Ch.260.0	Cum	1.00	50.00	9.92	0.10	49.58

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.240.0 to Ch.370.0	Cum	1.00	130.00	2.04	0.10	26.57
	Ch.350.0 to Ch.500.0	Cum	1.00	150.00	10.66	0.10	159.90
	Ch.500 to Ch.670.0	Cum	1.00	170.00	4.12	0.10	70.04
	Ch.650.0 to Ch.800.0	Cum	1.00	150.00	2.25	0.10	33.75
	Light House Hill Road-RHS						
	Ch.0.0 to Ch.105.0	Cum	1.00	105.00	2.82	0.10	29.61
	Ch.110.0 to Ch.170.0	Cum	1.00	60.00	4.37	0.10	26.22
	Ch.170.0 to Ch.255.0	Cum	1.00	85.00	4.38	0.10	37.23
	Ch.260.0 to Ch.770.0	Cum	1.00	510.00	3.10	0.10	158.10
	KMC Merкера Road-LHS						
	Ch.0.0 to Ch.670.0	Cum	1.00	670.00	3.15	0.10	211.05
	KMC Merкера Road-RHS						
	Ch.0.0 to Ch.90.0	Cum	1.00	90.00	3.22	0.10	28.98
	Ch.90.0 to Ch.155.0	Cum	1.00	65.00	3.48	0.10	22.62
	Ch.160.0 to Ch.300.0	Cum	1.00	140.00	3.70	0.10	51.80
	Ch.300.0 to Ch.470.0	Cum	1.00	170.00	3.38	0.10	57.46
	Ch.470.0 to Ch.700.0	Cum	1.00	230.00	3.77	0.10	86.71
	Footpath of Extension of Bibi alabi road						
	RHS						
	Ch.0.0 to Ch.100.0	Cum	1.00	100.00	2.41	0.10	24.10
	LHS						0.00
	Ch.0.0 to Ch.70.0	Cum	1.00	70.00	2.54	0.10	17.78
	Ch.75.00 to Ch.90.0	Cum	1.00	15.00	2.80	0.10	4.20
	Compound Side Paver Block						
	LHS						
	Ch.10.0 to Ch.33.0	Cum	1.00	23.00	2.30	0.10	5.29
	Ch.80.0 to Ch.90.0	Cum	1.00	10.00	5.30	0.10	5.30
						Total	1453.95
22	KSRRB M600-2. Providing and Constructing un-reinforced, dowel jointed, plain cement Pavement Quality concrete for pavements using Grade concrete M40 having Flexural strength not less than 4.50 Mpa over a prepared base with OPC, coarse aggregate at 0.64 cum, fine aggregates at 0.36 cum, Coarse and fine aggregate conforming to IS:383-2016 and Table 600-3 of MORTH V Revision, with Superplastizer at 3 lts conforming to IS 9103-2008. loading materials to batch mix plant by front end loader, mixed in a cement concrete batch mix plant as per approved mix design, transported to site in transit truck agitator 5 cum capacity, laid with Paver, compacted and finished in a continuous operation as per IRC-15 including cost for providing of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane of impermeable plastic sheet of 125 micron, groove cutting, sealant primer joint sealant, debonding strip, dowel bars at 9 kg/cum, tie rods at 1.15 kg/cum, admixtures as approved, curing compound, finishing to lines and grades.						
	Pandeshwar Road						
	RHS						
	Ch.150.0 to Ch.260.0	Cum	1	116	3.38	0.30	117.62
	LHS						
	Ch.150.0 to Ch.170.0	Cum	1	23	3.09	0.30	21.32
	Ch.180.0 to Ch.205.0	Cum	1	24.25	4.62	0.30	33.61
	Ch.210.0 to Ch.275.0	Cum	1	68	1.65	0.30	33.66
	Rosario church Road-Part I						
	Junction area at Hamilton Road	Cum	1	770	Area	0.25	192.50
	Ch.60.0 to 360.0	Cum	1	300	9.975	0.25	748.13
	Junction at Rosario Road and Pandeshwar Road	Cum	1	903	Area	0.25	225.75
	Rosario church Road-Part II						
	Ch.780.0 to Ch.900.0	Cum	1	120	6.2	0.25	186.00
	Bunder Road						
	Ch.0.0 to Ch.1336.0	Cum	1	1336	5.15	0.25	1720.10
	Light House Hill Road						
	Ch.0.0 to 100.0	Cum	1	100	9.8	0.28	274.40
	Ch.100.0 to 210.0	Cum	1	110	9.8	0.28	301.84
	Ch.210.0 to Ch.340.0	Cum	1	130	4.54	0.28	165.26
	Ch.350.0 to Ch.480.0	Cum	1	130	5.84	0.28	212.58
	KMC Merкера Road						
	LHS						
	Ch.180.0 to Ch.320.0	Cum	1	140	1.34	0.30	56.28
	Ch.350.0 to Ch.660.0	Cum	1	310	2.36	0.30	219.48
	RHS						
	Ch.70.0 to Ch.310.0	Cum	1	240	2.17	0.30	156.24
	Ch.310.0 to Ch.510.0	Cum	1	200	2.81	0.30	168.60
	Extension of Bibi Alabi Road						
	Ch.0.0 to Ch.100.00	Cum	1	100	7	0.25	175.00
		Cum				Total	5008.36

Sr. No.	Description	Unit	No's	L	B	H	Qty.
23	Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower and as shown on drawing and as per MORTH specifications clause 602. (Non SOR Item)						
	Pandeshwar Road						
	RHS						
	Ch.150.0 to Ch.260.0-Transverse	Rmt	26	3.38			87.88
	Ch.150.0 to Ch.260.0-Longitudinal	Rmt	1	116			116.00
	LHS						
	Ch.150.0 to Ch.170.0	Rmt	6	3.09			18.54
		Rmt	1	23			23.00
	Ch.180.0 to Ch.205.0	Rmt	6	4.62			27.72
		Rmt	1	24.25			24.25
	Ch.210.0 to Ch.275.0	Rmt	16	1.65			26.40
		Rmt	1	68			68.00
	Rosario church Road-Part I						
	Junction area at Hamilton Road						
	Ch.60.0 to 360.0	Rmt	67	9.975			668.33
		Rmt	3	300			900.00
	Junction at Rosario Road and Pandeshwar Road						
	Rosario church Road-Part II						
	Ch.510.0 to 900.0	Rmt	27	6.2			167.40
		Rmt	1	120			120.00
	Bunder Road						
	Ch.0.0 to Ch.1336.0	Rmt	297	5.15			1529.55
		Rmt	1	1336			1336.00
	Light House Hill Road						
	Ch.0.0 to 100.0	Rmt	23	9.8			225.40
	Ch.100.0 to 210.0	Rmt	25	9.8			245.00
	Ch.210.0 to Ch.340.0	Rmt	29	4.54			131.66
	Ch.350.0 to Ch.480.0	Rmt	29	5.84			169.36
		Rmt	1	470			470.00
	KMC Merker Road						
	LHS						
	Ch.180.0 to Ch.320.0	Rmt	32	1.34			42.88
	Ch.350.0 to Ch.660.0	Rmt	69	2.36			162.84
		Rmt	1	450			450.00
	RHS						
	Ch.70.0 to Ch.310.0	Rmt	54	2.17			117.18
	Ch.310.0 to Ch.510.0	Rmt	45	2.81			126.45
	Longitudinal Joint	Rmt	1	440			440.00
	Extension of Bibi Alabi Road						
	Ch.0.0 to Ch.100.00	Rmt	22	7			154.00
	Longitudinal Joint	Rmt	1	100			100.00
	Light House Hill Road	Rmt					
	Ch. 0.0 to Ch.210.0	Rmt	36.8	6.35			233.68
		Rmt			Total Qty.		8181.52
24	KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (KSRRB 18-19,Page No 260,SI No : 35.8)						
	Consider Same Qty of Joint Filling	Rmt			Total Qty.		8181.52
25	Providing and laying at or near ground level factory made Median kerb stone of M-20 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 drawing. (Precast C.C. kerb stone shall be approved by Engineer-in-charge). (RA Attached)						
	KMC Merker Road Island	Rmt	1	120			120.00
		Rmt				Sub Total	120.00
		No's			Total Qty.		300
	Vol of one kerb stone=0.102cum,Total vol of kerb=	Cum					31
26	Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC M20 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (RA Attached)						
	Footpath						
	Pandeshwar Road						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	RHS Footpath						
	Ch.0.0 to 40.00	Rm	1.00	40.00			40.00
	Sloping Portion-Quarter Circle	Rm	0.25	3.14	2.46		1.93
	Sloping Portion-Quarter Circle	Rm	0.25	3.14	3.35		2.63
	Ch.50.0 to 74.0	Rm	1.00	24.64			24.64
	Sloping Portion-Quarter Circle	Rm	1.00	4.22			4.22
	Sloping Portion-Quarter Circle	Rm	0.25	3.14	3.03		2.38
	Ch.80.0 to 120.00	Rm	1.00	40.00			40.00
	Sloping Portion-Quarter Circle	Rm	0.25	3.14	4.88		3.83
	Ch.130.0- Ch.260.0	Rm	1.00	130.00			130.00
	LHS Footpath						
	Ch.20.0 to Ch.65.0	Rm	1.00	45.00			45.00
	Ch.65.0 to Ch.130.0	Rm	1.00	65.00			65.00
	Ch.130.0 to Ch.200.0	Rm	1.00	70.00			70.00
	Pandeshwar Road Median (New and Extended)						
	Ch.140.0 to Ch.185.0	Rm	2.00	45.00			90.00
	Ch.187.0 to Ch.190.0	Rm	2.00	3.00			6.00
	Rosario Church Road-I						
	RHS						
	Ch.70.0 to 284.0	Rm	1.00	214.00			214.00
	Sloping Portion-Quarter Circle	Rm	0.25	3.14			0.79
	Ch.90 Triangular Portion	Rm	0.50	2.83			1.42
	Sloping Portion-Quarter Circle	Rm	0.25	3.14			0.79
	Ch.300.0 to Ch.330.0	Rm	1.00	29.72			29.72
	Sloping Portion-Quarter Circle	Rm	0.25	3.14			0.79
	Ch.337.0 to Ch.405.0	Rm	1.00	67.00			67.00
	Sloping Portion-Rectangular	Rm	1.00	3.00			3.00
	Ch.420.0 to Ch.490.0	Rm	1.00	75.00			75.00
	Sloping Portion-Quarter Circle	Rm	0.25	3.14			0.79
	LHS						
	Ch.60.0 to Ch.145.0	Rm	1.00	81.00			81.00
	Sloping Portion-Rectangular	Rm	1.00	2.70			2.70
	Sloping Portion-Rectangular	Rm	1.00	3.56			3.56
	Ch.55.0 to 65.0-Trapezoidal	Rm	1.00	10.00			10.00
	Ch.65.0 to Ch.260.0	Rm	1.00	92.00			92.00
	Sloping Portion-Rectangular	Rm	1.00	2.50			2.50
	Sloping Portion-Rectangular	Rm	1.00	2.50			2.50
	Ch.270.0 to Ch.300.00	Rm	1.00	28.20			28.20
	Ch.310.0 to Ch.330.0	Rm	1.00	19.57			19.57
	Ch.340.0 to Ch.350.0	Rm	1.00	9.70			9.70
	Ch.360.0 to Ch.390.0	Rm	1.00	28.42			28.42
	Ch.400.0 to Ch.465.0	Rm	1.00	65.50			65.50
	Rosario Church Road-Part II-RHS						
	Ch.500-Odd shape	Rm	1.00	2.18			2.18
	Ch.510.0 to Ch.570.0	Rm	1.00	63.00			63.00
	Ch.570.0 to Ch.625.0	Rm	1.00	56.45			56.45
	Ch.625.0 to Ch.698.0	Rm	1.00	73.25			73.25
	Ch.700.0 to Ch.753.0	Rm	1.00	51.57			51.57
	Ch.753.0 to Ch.880.0	Rm	1.00	127.00			127.00
	Light House Hill Road-LHS						
	Ch.0.0 to Ch.210.0	Rm	1.00	210.00			210.00
	Ch.210.0 to Ch.260.0	Rm	1.00	50.00			50.00
	Ch.240.0 to Ch.370.0	Rm	1.00	130.00			130.00
	Ch.350.0 to Ch.500.0	Rm	1.00	150.00			150.00
	Ch.500 to Ch.670.0	Rm	1.00	170.00			170.00
	Ch.650.0 to Ch.800.0	Rm	1.00	150.00			150.00
	Light House Hill Road-RHS						
	Ch.0.0 to Ch.105.0	Rm	1.00	105.00			105.00
	Ch.110.0 to Ch.170.0	Rm	1.00	60.00			60.00
	Ch.170.0 to Ch.255.0	Rm	1.00	85.00			85.00
	Ch.260.0 to Ch.770.0	Rm	1.00	510.00			510.00
	KMC Merкера Road-LHS						
	Ch.0.0 to Ch.670.0	Rm	1.00	670.00			670.00
	KMC Merкера Road-RHS						
	Ch.0.0 to Ch.90.0	Rm	1.00	90.00			90.00
	Ch.90.0 to Ch.155.0	Rm	1.00	65.00			65.00
	Ch.160.0 to Ch.300.0	Rm	1.00	140.00			140.00
	Ch.300.0 to Ch.470.0	Rm	1.00	170.00			170.00
	Ch.470.0 to Ch.700.0	Rm	1.00	230.00			230.00
							4623.01
	C= A+B/0.45m(length of one Kerb Stone)	Nos				Total(C)	10273.00
	Vol of 1 Kerb=0.028 cum, Total Vol.=	Cum					287.64
27	Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC M20 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (RA Attached)						
	Same Qty. As per Kerb Stone	Rm					4623

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	C= A+B/0.45m (length of one Kerb Stone)	Nos.					10273
	Vol of 1 Kerb=0.028 cum, Total Vol.= 0.0118	Cum					121
28	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per MORTH specifications section 8. (KSRRB 18-19,Page No 180,SI No : 24.1)						
	Footpath						
	Pandeshwar Road						
	RHS Footpath						
	Ch.0.0 to 40.00	Sqm	1.00	40.00		0.26	10.56
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	2.46	0.26	0.51
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	3.35	0.26	0.69
	Ch.50.0 to 74.0	Sqm	1.00	24.64		0.26	6.50
	Sloping Portion-Quarter Circle	Sqm	1.00	4.22		0.26	1.11
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	3.03	0.26	0.63
	Ch.80.0 to 120.00	Sqm	1.00	40.00		0.26	10.56
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	4.88	0.26	1.01
	Ch.130.0- Ch.260.0	Sqm	1.00	130.00		0.26	34.32
	LHS Footpath						
	Ch.20.0 to Ch.65.0	Sqm	1.00	45.00		0.26	11.88
	Ch.65.0 to Ch.130.0	Sqm	1.00	65.00		0.26	17.16
	Ch.130.0 to Ch.200.0	Sqm	1.00	70.00		0.26	18.48
	Pandeshwar Road Median (New and Extended)						
	Ch.150.0 to Ch.185.0	Rm	2.00	45.00		0.26	23.76
	Ch.187.0 to Ch.190.0	Rm	2.00	3.00		0.26	1.58
	Rosario Church Road-I						
	RHS						
	Ch.70.0 to 284.0	Sqm	1.00	214.00		0.26	56.50
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14		0.26	0.21
	Ch.90 Triangular Portion	Sqm	0.50	2.83		0.26	0.37
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14		0.26	0.21
	Ch.300.0 to Ch.330.0	Sqm	1.00	29.72		0.26	7.85
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14		0.26	0.21
	Ch.337.0 to Ch.405.0	Sqm	1.00	67.00		0.26	17.69
	Sloping Portion-Rectangular	Sqm	1.00	3.00		0.26	0.79
	Ch.420.0 to Ch.490.0	Sqm	1.00	75.00		0.26	19.80
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14		0.26	0.21
	LHS						
	Ch.60.0 to Ch.145.0	Sqm	1.00	81.00		0.26	21.38
	Sloping Portion-Rectangular	Sqm	1.00	2.70		0.26	0.71
	Sloping Portion-Rectangular	Sqm	1.00	3.56		0.26	0.94
	Ch.55.0 to 65.0-Trapezoidal	Sqm	1.00	10.00		0.26	2.64
	Ch.65.0 to Ch.260.0	Sqm	1.00	92.00		0.26	24.29
	Sloping Portion-Rectangular	Sqm	1.00	2.50		0.26	0.66
	Sloping Portion-Rectangular	Sqm	1.00	2.50		0.26	0.66
	Ch.270.0 to Ch.300.00	Sqm	1.00	28.20		0.26	7.44
	Ch.310.0 to Ch.330.0	Sqm	1.00	19.57		0.26	5.17
	Ch.340.0 to Ch.350.0	Sqm	1.00	9.70		0.26	2.56
	Ch.360.0 to Ch.390.0	Sqm	1.00	28.42		0.26	7.50
	Ch.400.0 to Ch.465.0	Sqm	1.00	65.50		0.26	17.29
	Light House Hill Road-LHS						
	Ch.0.0 to Ch.210.0	Sqm	1.00	210.00		0.26	55.44
	Ch.210.0 to Ch.260.0	Sqm	1.00	50.00		0.26	13.20
	Ch.240.0 to Ch.370.0	Sqm	1.00	130.00		0.26	34.32
	Ch.350.0 to Ch.500.0	Sqm	1.00	150.00		0.26	39.60
	Ch.500 to Ch.670.0	Sqm	1.00	170.00		0.26	44.88
	Ch.650.0 to Ch.800.0	Sqm	1.00	150.00		0.26	39.60
	Light House Hill Road-RHS						
	Ch.0.0 to Ch.105.0	Sqm	1.00	105.00		0.26	27.72
	Ch.110.0 to Ch.170.0	Sqm	1.00	60.00		0.26	15.84
	Ch.170.0 to Ch.255.0	Sqm	1.00	85.00		0.26	22.44
	Ch.260.0 to Ch.770.0	Sqm	1.00	510.00		0.26	134.64
	KMC Merker Road-LHS						
	Ch.0.0 to Ch.670.0	Sqm	1.00	670.00		0.26	176.88
	KMC Merker Road-RHS						
	Ch.0.0 to Ch.90.0	Sqm	1.00	90.00		0.26	23.76
	Ch.90.0 to Ch.155.0	Sqm	1.00	65.00		0.26	17.16
	Ch.160.0 to Ch.300.0	Sqm	1.00	140.00		0.26	36.96
	Ch.300.0 to Ch.470.0	Sqm	1.00	170.00		0.26	44.88
	Ch.470.0 to Ch.700.0	Sqm	1.00	230.00		0.26	60.72
		Sqm			Total Qty.		1121.88
29	P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame						
	Power Duct Chambers						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Pandeshwar Road	Nos.	2	19			38.00
	Rosario Church Road-1	Nos.	2	31			62.00
	Rosario Church Road-2	Nos.	2	26			52.00
	Bunder Road	Nos.	2	44			88.00
	Light House Hill Road	Nos.	2	33			66.00
	KMC Merкера Road	Nos.	2	53			106.00
		Nos.			Total Qty.		412.00
30	Providing and Fixing Recessed Inception chamber cover - size: (600 x 450)mm Material						
	SWD-Chamber Cover						
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Nos.	54				54.00
	LHS-D2	Nos.	54				54.00
	Rosario Church Road						
	Foundation						
	RHS-D4	Nos.	84				84.00
	RHS-D5	Nos.	67				67.00
	RHS-D5B	Nos.	9				9.00
	RHS-D5A	Nos.	24				24.00
	LHS-D3	Nos.	84				84.00
	Bunder Road						
	Foundation						
	RHS-D6	Nos.	161				161.00
	RHS-D7	Nos.	63				63.00
	RHS-D7A	Nos.	62				62.00
	Light House Hill Road-1						
	Foundation						
	RHS-D8	Nos.	78				78.00
	LHS-D9	Nos.	78				78.00
	LHS-D13	Nos.	77				77.00
	KMC Merкера Road						
	Foundation						
	RHS-D10A	Nos.	115				115.00
	RHS-D14	Nos.	30				30.00
	LHS-10	Nos.	115				115.00
		Nos.			Total Qty.		1155.00
31	KSRRB M300- Wrought iron and mild steel welded work KSRRB M300-18. Wrought iron and mild steel welded work (using angles, square bars, tees and channel grills, gratings with grating frames, gates and tree guards of any size and design etc. including cost of screens and welding rods or bolts and nuts complete fixed in position but without the cost of excavation and concrete for fixing which will be paid separately complete as per specifications.(KSRRB 18-19,SI.No.19.97,Pg.No.150)						
	Grating on SWD Channel						
	Rosario Church Road-II						
	RHS-5	Nos.	67				67.00
	RHS-5B	Nos.	9				9.00
	Bunder Road						
	RHS-D6	Nos.	161				161.00
	RHS-D7	Nos.	63				63.00
	RHS-D7A	Nos.	62				62.00
	RHS-D5A	Nos.	24				24.00
		Nos.			Total Qty.		386.00
			Nos.	Kg/No.	Kg		Quintal
			386.00	120	46320		463.2
32	KSRRB 12-8.2 : Constructing brick masonry inspection chamber 500x700mm, and 450mm depth, (clear inside dimension) for pipeline with one or two inlets, using table moulded non-modular bricks of class designation 50 in cement mortar 1:5, C.I cover with frame (light duty) 455x610mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23kg and weight of frame 15 kg) R.C.C. top slab with cement concrete M 15 with 20mm and downsize granite metal , foundation concrete M 5 with 40mm and downsize granite metal inside plastering 12mm thick with cement mortar 1:3, finished smooth with a floating coat of cement on walls and bed concrete complete as per standard design including cost of materials, labour charges, curing complete as per specifications. Specification No. KBS (P.No. 76/ I.No.11.52 of PWD SR 2018-19)						
	Water Pipe and OFC Pipe						
	Pandeshwar Road	Nos.	38				38.00
	Rosario Church Road-1	Nos.	62				62.00
	Rosario Church Road-2	Nos.	53				53.00
	Bunder Road	Nos.	89				89.00
	Light House Hill Road	Nos.	66				66.00

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	KMC Merкера Road	Nos.	107				107.00
		Nos.					415.00
33	Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7,KUWSDB SOR 2016-17)						
	SWD						
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Rmt	54	1			54.00
	LHS-D2	Rmt	54	1			54.00
	Rosario Church Road						
	Foundation						
	RHS-D4	Rmt	84	1			84.00
	RHS-D5	Rmt	67	1			67.00
	RHS-D5B	Rmt	9	1			9.00
	RHS-D5A	Rmt	24	1			24.00
	LHS-D3	Rmt	84	1			84.00
	Bunder Road						
	Foundation						
	RHS-D6	Rmt	161	1			161.00
	RHS-D7	Rmt	63	1			63.00
	RHS-D7A	Rmt	62	1			62.00
	Light House Hill Road-1						
	Foundation						
	RHS-D8	Rmt	78	1			78.00
	LHS-D9	Rmt	78	1			78.00
	LHS-D13	Rmt	77	1			77.00
	KMC Merкера Road						
	Foundation						
	RHS-D10A	Rmt	115	1			115.00
	RHS-D14	Rmt	30	1			30.00
	LHS-10	Rmt	115	1			115.00
		Rmt				Total Qty.	1155.00
34	KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia, of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (KSRB SR 2018-19,P.No.88, SI.No.12.89)						
	SWD						
	Pandeshwar Road						
	Foundation-SWD						
	RHS-D1	Nos.	54				54.00
	LHS-D2	Nos.	54				54.00
	Rosario Church Road						
	Foundation						
	RHS-D4	Nos.	84				84.00
	RHS-D5	Nos.	67				67.00
	RHS-D5B	Nos.	9				9.00
	RHS-D5A	Nos.	24				24.00
	LHS-D3	Nos.	84				84.00
	Bunder Road						
	Foundation						
	RHS-D6	Nos.	161				161.00
	RHS-D7	Nos.	63				63.00
	RHS-D7A	Nos.	62				62.00
	Light House Hill Road-1						
	Foundation						
	RHS-D8	Nos.	78				78.00
	LHS-D9	Nos.	78				78.00
	LHS-D13	Nos.	77				77.00
	KMC Merкера Road						
	Foundation						
	RHS-D10A	Nos.	115				115.00
	RHS-D14	Nos.	30				30.00
	LHS-10	Nos.	115				115.00
		Nos.				Total Qty.	1155.00

Sr. No.	Description	Unit	No's	L	B	H	Qty.
35	KSRRB M800-29.3.Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case-III :Triple row for three utility services. (KSRRB 2018-19.Pq No 186.SI.No.24.36)						
	Pandeshwar Road	Rmt	3	19			57
	Rosario Church Road-1	Rmt	4	19			76
	Rosario Church Road-2	Rmt	4	19			76
	Bunder Road	Rmt	13	15			195
	Light House Hill Road	Rmt	8	17			136
	KMC Merкера Road	Rmt	8	19			152
	Extension of Bibi alabi Road	Rmt	3	7			21
		Rmt			Total Qty.		713.00
36	Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)						
			Nos.	RHS	Nos.	LHS	
	Pandeshwar Road	Rmt	4	267	4	304	2284
	Rosario Church Road-1	Rmt	5	486	2	447	3324
	Rosario Church Road-2	Rmt	4	397	0	397	1588
	Bunder Road	Rmt	0	0	4	1329	5316
	Light House Hill Road	Rmt	4	742	4	250	3968
	KMC Merкера Road	Rmt	4	800	4	800	6400
	Extension of Bibi alabi Road	Rmt	0	0	4	100	400
	Deduction of Chambers length		No. Of Pipes	No. Of Chambers	No. Of Pipes	No. Of Chambers	
			A	B	C	D	E=(A*B+C*D) *2m chamber length
	Pandeshwar Road	Rmt	4	9	4	11	-160
	Rosario Church Road-1	Rmt	5	17	2	15	-230
	Rosario Church Road-2	Rmt	4	14	0	14	-112
	Bunder Road	Rmt	0	0	4	45	-360
	Light House Hill Road	Rmt	4	25	4	9	-272
	KMC Merкера Road	Rmt	4	27	4	27	-432
	Extension of Bibi alabi Road	Rmt	0	0	4	4	-32
		Rmt			Total Qty.		21682.00
37	Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe						
			Nos.	RHS	Nos.	LHS	
	Pandeshwar Road	Rmt	5	267	5	304	2855
	Rosario Church Road-1	Rmt	4	486	4	447	3732
	Rosario Church Road-2	Rmt	4	397	4	397	3176
	Bunder Road	Rmt	4	0	4	1329	5316
	Light House Hill Road	Rmt	5	742	5	250	4960
	KMC Merкера Road	Rmt	5	800	5	800	8000
	Extension of Bibi alabi Road	Rmt	4	0	4	100	400
	Deduction of Chambers length		No. Of Pipes	No. Of Chambers	No. Of Pipes	No. Of Chambers	
			A	B	C	D	E=(A*B+C*D) *2m chamber length
	Pandeshwar Road	Rmt	5	9	5	11	-200
	Rosario Church Road-1	Rmt	4	17	4	15	-256
	Rosario Church Road-2	Rmt	4	14	4	14	-224
	Bunder Road	Rmt	4	0	4	45	-360
	Light House Hill Road	Rmt	5	25	5	9	-340
	KMC Merкера Road	Rmt	5	27	5	27	-540
	Extension of Bibi alabi Road	Rmt	4	0	4	4	-32
		Rmt			Total Qty.		26487.00

Sr. No.	Description	Unit	No's	L	B	H	Qty.
38	Providing and Fixing Spacers for Power Ducts of size 225 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material.						
				RHS	LHS		
	Pandeshwar Road	Rmt	1	267	304		571
	Rosario Church Road-1	Rmt	1	486	447		933
	Rosario Church Road-2	Rmt	1	397	0		397
	Bunder Road	Rmt	1	0	1329		1329
	Light House Hill Road	Rmt	1	742	250		992
	KMC Merkeria Road	Rmt	1	800	800		1600
	Extension of Bibi alabi Road	Rmt	1	0	100		100
	No. of Spacer=Total Length of Pipe / 1.5m	Nos.			Total Qty.		3948.00
39	Providing and Fixing Spacers for Power Ducts of size 160 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material.						
				RHS	LHS		
	Pandeshwar Road	Rmt	1	267	304		571
	Rosario Church Road-1	Rmt	1	486	447		933
	Rosario Church Road-2	Rmt	1	397	397		794
	Bunder Road	Rmt	1	0	1329		1329
	Light House Hill Road	Rmt	1	742	250		992
	KMC Merkeria Road	Rmt	1	800	800		1600
	Extension of Bibi alabi Road	Rmt	1	0	100		100
	No. of Spacer=Total Length of Pipe / 1.5m	Nos.			Total Qty.		4213.00
40	Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)						
				RHS	LHS		
	Pandeshwar Road	Rmt	1	267	304		571
	Rosario Church Road-1	Rmt	1	486	447		933
	Rosario Church Road-2	Rmt	1	397	397		794
	Bunder Road	Rmt	1	0	1329		1329
	Light House Hill Road	Rmt	1	742	250		992
	KMC Merkeria Road	Rmt	1	800	800		1600
	Extension of Bibi alabi Road	Rmt	1	0	100		100
	Deduction of Chambers length		No. Of Pipes	No. Of Chambers	No. Of Pipes	No. Of Chambers	
			A	B	C	D	E=(A*B+C*D) *0.6m chamber length
	Pandeshwar Road	Rmt	1	9	1	304	-187.8
	Rosario Church Road-1	Rmt	1	17	1	447	-278.4
	Rosario Church Road-2	Rmt	1	14	1	397	-246.6
	Bunder Road	Rmt	1	0	1	1329	-797.4
	Light House Hill Road	Rmt	1	25	1	250	-165
	KMC Merkeria Road	Rmt	1	27	1	800	-496.2
	Extension of Bibi alabi Road	Rmt	1	0	1	100	-60
		Rmt			Total Qty.		4087.60
41	Providing and laying heavy duty cobble stones 60mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (KSRB 18-19, Pg No 103,SI No : 14.6)						
	Pandeshwar Road						
	RHS Footpath						
	Ch.0.0 to 40.00	Sqm	1	40	2.21		88.32
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	2.46		1.93
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	3.35		2.63
	Ch.50.0 to 74.0	Sqm	1	24.64	1.81		44.48
	Sloping Portion-Quarter Circle	Sqm	1	4.22	1.00		4.22
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	3.03		2.38
	Ch.80.0 to 120.00	Sqm	1	40.00	1.98		79.00
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	4.88		3.83
	Ch.130.0- Ch.260.0	Sqm	1	130.00	1.62		210.60
	LHS Footpath						
	Ch.20.0 to Ch.65.0	Sqm	1	45.00	1.80		81.00
	Ch.65.0 to Ch.130.0	Sqm	1	65.00	2.88		187.50
Ch.130.0 to Ch.200.0	Sqm	1	70.00	2.01		140.65	
Rosario Church Road-I							
RHS							

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.70.0 to 284.0	Sqm	1	214.00	2.40		513.60
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	6.40		5.02
	Ch.90 Triangular Portion	Sqm	0.5	2.83	2.56		3.62
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	6.55		5.14
	Ch.300.0 to Ch.330.0	Sqm	1	29.72	2.40		71.33
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	3.39		2.66
	Ch.337.0 to Ch.405.0	Sqm	1	67.00	2.16		144.72
	Sloping Portion-Rectangular	Sqm	1	3.00	2.60		7.80
	Ch.420.0 to Ch.490.0	Sqm	1	75.00	2.40		180.00
	Sloping Portion-Quarter Circle	Sqm	0.25	3.14	6.40		5.02
	LHS						
	Ch.60.0 to Ch.145.0	Sqm	1	81.00	2.60		210.60
	Sloping Portion-Rectangular	Sqm	1	2.70	2.50		6.75
	Sloping Portion-Rectangular	Sqm	1	3.56	3.56		12.67
	Ch.55.0 to 65.0-Trapezoidal	Sqm	1	10.00	4.28		42.80
	Ch.65.0 to Ch.260.0	Sqm	1	92.00	2.50		230.00
	Sloping Portion-Rectangular	Sqm	1	2.50	4.11		10.28
	Sloping Portion-Rectangular	Sqm	1	2.50	4.00		10.00
	Ch.270.0 to Ch.300.00	Sqm	1	28.20	2.50		70.50
	Ch.310.0 to Ch.330.0	Sqm	1	19.57	2.50		48.93
	Ch.340.0 to Ch.350.0	Sqm	1	9.70	2.50		24.25
	Ch.360.0 to Ch.390.0	Sqm	1	28.42	2.50		71.05
	Ch.400.0 to Ch.465.0	Sqm	1	65.50	2.50		163.75
	Rosario Church Road-Part II-RHS						
	Ch.500-Odd shape	Sqm	1	2.18	7.5		16.35
	Ch.510.0 to Ch.570.0	Sqm	1	63	2.34		147.42
	Ch.570.0 to Ch.625.0	Sqm	1	56.45	2.32		130.96
	Ch.625.0 to Ch.698.0	Sqm	1	73.25	1.67		122.33
	Ch.700.0 to Ch.753.0	Sqm	1	51.57	1.02		52.60
	Ch.753.0 to Ch.880.0	Sqm	1	127	0.94		119.38
	Light House Hill Road-LHS						
	Ch.0.0 to Ch.210.0	Sqm	1	210	3.76		789.60
	Ch.210.0 to Ch.260.0	Sqm	1	50	9.9		495.81
	Ch.240.0 to Ch.370.0	Sqm	1	130	2.04		265.66
	Ch.350.0 to Ch.500.0	Sqm	1	150	10.66		1599.00
	Ch.500 to Ch.670.0	Sqm	1	170	4.12		700.40
	Ch.650.0 to Ch.800.0	Sqm	1	150	2.25		337.50
	Light House Hill Road-RHS						
	Ch.0.0 to Ch.105.0	Sqm	1	105	2.82		296.10
	Ch.110.0 to Ch.170.0	Sqm	1	60	4.37		262.20
	Ch.170.0 to Ch.255.0	Sqm	1	85	4.38		372.30
	Ch.260.0 to Ch.770.0	Sqm	1	510	3.1		1581.00
	KMC Merkera Road-LHS						
	Ch.0.0 to Ch.670.0	Sqm	1	670	3.15		2110.50
	KMC Merkera Road-RHS						
	Ch.0.0 to Ch.90.0	Sqm	1	90	3.22		289.80
	Ch.90.0 to Ch.155.0	Sqm	1	65	3.48		226.20
	Ch.160.0 to Ch.300.0	Sqm	1	140	3.7		518.00
	Ch.300.0 to Ch.470.0	Sqm	1	170	3.38		574.60
	Ch.470.0 to Ch.700.0	Sqm	1	230	3.77		867.10
	Footpath of Extension of Bibi alabi road						
	RHS						
	Ch.0.0 to Ch.100.0	Sqm	1	100	2.41		241.00
	LHS						
	Ch.0.0 to Ch.70.0	Sqm	1	70	2.54		177.80
	Ch.75.00 to Ch.90.0	Sqm	1	15	2.8		42.00
	Compound Side Paver Block						
	LHS						
	Ch.10.0 to Ch.33.0	Sqm	1	23.00	2.3		52.90
	Ch.80.0 to Ch.90.0	Sqm	1	10.00	5.3		53.00
		Sqm			Total Qty.		15128.55
42	Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 40mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)						
	Tactile Tiles @ Pandeshwar Road						
	RHS						
	Ch.0 to Ch.40.0	Sqm	1	40	0.3		12.00
	at Ch.40.0	Sqm	1.00	0.90	0.30		0.27
	Ch.50.0 to Ch.75.	Sqm	1.00	25.00	0.30		7.50
	End Tiles	Sqm	2.00	0.90	0.30		0.54
	Ch.82.0 to Ch.120.0	Sqm	1.00	38.00	0.30		11.40

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	End Tiles	Sqm	2.00	0.90	0.30		0.54
	Ch.130.0 to Ch.260.0	Sqm	1.00	115.00	0.30		34.50
	End Tiles	Sqm	1.00	0.90	0.30		0.27
	LHS						0.00
	Ch.20.0 to Ch.65.0	Sqm	1.00	45.00	0.30		13.50
	End Tiles	Sqm	1.00	0.90	0.30		0.27
	Ch.85.0 to Ch.150.0	Sqm	1.00	49.00	0.30		14.70
	Ch.145.0 to Ch.170.0	Sqm	1.00	25.00	0.30		7.50
	Ch.185.0 to Ch.195.0	Sqm	1.00	10.00	0.30		3.00
	End Tiles	Sqm	1.00	0.90	0.30		0.27
	Rosario Church Road						
	Ch.20.0 to Ch.490.0	Sqm	1	490.00	0.30		147.00
	End Tiles	Sqm	7	0.60	0.30		1.26
	Light house hill road						
	RHS						
	Ch.0.0 to Ch.800.0	Sqm	1	800.00	0.30		240.00
	LHS						
	Ch.0.0 to Ch.800.0	Sqm	1	800.00	0.30		240.00
	KMC Merker Road						
	RHS						
	Ch.0.0 to Ch.700.0	Sqm	1	700.00	0.30		210.00
	LHS						
	Ch.0.0 to Ch.700.0	Sqm	1	700.00	0.30		210.00
	Extension of Bibi Alabi Road						
	RHS						
	Ch.0.0 to Ch.100.0	Sqm	1	100.00	0.30		30.00
	LHS						
	Ch.0.0 to Ch.100.0	Sqm	1	100.00	0.30		30.00
		Sqm			Total Qty.		1214.52
43	Providing and laying heavy duty cobble stones 75mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (KSRB 18-19,Page No 103,SI No : 14.7)						
	Paver block on Carriageway						
	Pandeshwar Road						
	RHS						
	Ch.130.0 to Ch.235.0	Sqm	1	105	1.66		174.30
	LHS						
	Ch.20.0 to Ch.65.00	Sqm	1	45	1.81		81.45
	Ch.80.0 to Ch.135.0	Sqm	1	55	1		55.00
	Ch.145.0 to Ch.170.0	Sqm	1	25.39	1.25		31.74
	Ch.180.0 to Ch.195.0	Sqm	1	13.37	2.1		28.08
	Ch.200.0 to 270.0	Sqm	1	4.62	1.56		7.21
	Rosario Church Road-LHS						
	Ch.60.0 to Ch.145.0	Sqm	1	84.54	2.46		207.97
	Ch.155.0 to Ch.260.0	Sqm	1	107	3.87		414.09
	Ch.265.0 to Ch.300.0	Sqm	1	34	2.73		92.82
	Ch.310.0 to Ch.330.0	Sqm	1	24.18	1.685		40.74
	Ch.335.0 to Ch.350.0	Sqm	1	14	1.45		20.30
	Ch.360.0 to Ch.390.0	Sqm	1	32.7	1.7		55.59
	Ch.400.0 to Ch.470.0	Sqm	1	68.63	3.44		236.09
	Rosario Church Road-Part II-LHS						0.00
	Ch.494.0 to Ch.520.0	Sqm	1	23	1.98		45.54
	Gate Entrance at Ch.520.0	Sqm	1	6.33	4.17		26.40
	Ch.525.0 to Ch.550.0	Sqm	1	25.96	4.6		119.42
	Ch.523.0 to Ch. 550.0	Sqm	1	4.23	26		109.98
	Gate Entrance at Ch.550	Sqm	1	7.54	3.73		28.12
	Ch.550.0 to Ch.565.0	Sqm	1	2.77	12.52		34.68
	Ch.570.0 to Ch.600.0	Sqm	1	2.23	27		60.21
	Ch.600.0 to Ch.640.0	Sqm	1	0.76	38		28.88
	Ch.640.0 to Ch.740.0	Sqm	1	102	0.45		45.90
	Ch.750.0 to Ch. 890.0	Sqm	1	158	1		158.00
	Bunder Road-LHS						
	Ch.0.0 to Ch. 125.0	Sqm	1	119	2.54		302.26
	Ch.125.1 to Ch. 160.0	Sqm	1	33	2.31		76.23
	Ch.160.1 to 172.0(including LHS footpath	Sqm	1	16	7.74		123.84
	Road at Ch.180.0 RHS Side Footpath	Sqm	1	15.61	1.44		22.48
	Ch. 180.0 to Ch.210.0	Sqm	1	27.69	0.94		26.03
	Ch.208.0 to Ch.223.0	Sqm	1	17.27	2.3		39.72
	Ch.223.0 to Ch.245.0	Sqm	1	28	1.51		42.28
	Road at Ch.250.0 LHS Side Footpath	Sqm	1	10	1.4		14.00
	Road at Ch.250.0 RHS Side Footpath	Sqm	1	10	7.2		72.00
	Ch.260.0 to Ch.280.0	Sqm	1	22.69	2.82		63.99
	Ch.280.0 to Ch.300.0	Sqm	1	21.1	2.8		59.08
	Ch.300.0 to Ch.340.0	Sqm	1	37	5.39		199.43

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Ch.345.0 to Ch.382.0	Sqm	1	38.65	7.09		274.03
	Ch.390.0 to Ch.440.0	Sqm	1	58.67	3.76		220.60
	Ch.440.1 to Ch. 650.0	Sqm	1	120	1.2		144.00
	Ch. 690.0 to Ch.880.0	Sqm	1	183	0.5		91.50
	Ch.880.0 to Ch.1170.0	Sqm	1	86	2.2		189.20
	Ch.1170.0 to Ch.1212.0	Sqm	1	42.33	1.61		68.15
	Ch.1220.0 to 1280.0	Sqm	1	65.59	3.54		232.19
	Ch.1280.0 to 1320.0	Sqm	1	34.24	1.11		38.01
	Ch.1320.0 to Ch.1330.0	Sqm	1	7.54	3.11		23.45
	Bunder Road-RHS						
	Ch.0.0 to Ch. 18.0	Sqm	1	13.61	1.97		26.81
	Ch.18.0 to Ch.30.0	Sqm	1	13.44	1.645		22.11
	Ch.30.0 to Ch.50.0	Sqm	0.5	19.17	2.137		20.48
	Ch.50.0 to Ch.180.0	Sqm	1	130	3.31		430.30
	Ch.180.0 to Ch.245.0	Sqm	1	65	5.35		347.75
	Ch.250.0 to Ch.555.0	Sqm	1	305	2.6		793.00
	Ch.550 to Ch.580	Sqm	1	30	2.5		75.00
	Ch.710.0 to Ch.810	Sqm	1	100	3		300.00
	Ch.820.0 to Ch.992.0	Sqm	1	172	6.63		1140.36
	Ch.900.0 to Ch.1238.0	Sqm	1	338	1.2		405.60
	Ch.1238.0 to Ch.1336.0	Sqm	1	98	2.32		227.36
	KMC Merkera Road						
	Paver Block on Carriageway(Consider 30% of Qty.)						
	Ch.40.0 to Ch.90.0 (Triangular Shape)	Sqm	0.5	46.16	2.69	0.3	18.63
	Ch.90.0 to Ch.320.0	Sqm	1	230	3.3	0.3	227.70
	Ch.320.0 to Ch.500.0	Sqm	1	180	2.87	0.3	154.98
	Ch.500.0 to Ch.610.0	Sqm	1	110	3.76	0.3	124.08
	Ch.610.0 to Ch.660.0	Sqm	1	50	1.51	0.3	22.65
	Table Top paver Block						
	Pandeshwar Road	Sqm	2	6.2	3		37.20
	Rosario Church Road	Sqm	1	9.8	3		29.40
	Light House Hill Road	Sqm	1	9.3	3		27.90
	KMC Merkera Road	Sqm	3	11	3		99.00
		Sqm			Total Qty.		8955.26
44	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 120 TPH capacity Asphalt batch mix plant with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (KSRRB 18-19,S.I.No.21.17.2,Page No.160)						
	Table Top paver Block						
	Pandeshwar Road	Cum	2	6.2	5	0.15	9.30
	Rosario Church Road	Cum	1	9.8	5	0.15	7.35
	Light House Hill Road	Cum	1	9.3	5	0.15	6.98
	KMC Merkera Road	Cum	3	11	5	0.15	24.75
		Cum			Total Qty.		48.38
45	KSRRB M500-19. Providing and laying bituminous concrete using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a 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 complete as per specifications. Clause 507 of MORTH V revision No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 5.4 % VG-40 Bitumen (KSRRB 18-19,S.I.No.21.22.6,Page No.162)						
	Table Top paver Block						
	Pandeshwar Road	Cum	2	6.2	5	0.04	2.48
	Rosario Church Road	Cum	1	9.8	5	0.04	1.96
	Light House Hill Road	Cum	1	9.3	5	0.04	1.86
	KMC Merkera Road	Cum	3	11	5	0.04	6.60
		Cum			Total Qty.		12.90
	Sinages						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
46	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminium skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary for satisfactory completion of the works as directed be engineer in-charge.						
	10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 900MM Equilateral Triangle-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.1)						
	Pandeshwar Road	Nos.	13				13.00
	Rosario Church Road	Nos.	28				28.00
	Bunder Road	Nos.	31				31.00
	Light House Hill Road	Nos.	15				15.00
	KMC Merкера Road	Nos.	18				18.00
	Extension of Bibi Alabi Road	Nos.	4				4.00
		Nos.			Total Qty.		109.00
48	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary for satisfactory completion of the works as directed be engineer in-charge.						
	10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 900MM Octagon Stop Board-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.6)						
	Pandeshwar Road	Nos.	0				0.00
	Rosario Church Road	Nos.	0				0.00
	Bunder Road	Nos.	0				0.00
	Light House Hill Road	Nos.	0				0.00
	KMC Merкера Road	Nos.	0				0.00
		Nos.			Total Qty.		0.00
49	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary for satisfactory completion of the works as directed be engineer in-charge.						

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 600MM Circle-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.3)						
	Pandeshwar Road	Nos.	3				3.00
	Rosario Church Road	Nos.	9				9.00
	Bunder Road	Nos.	10				10.00
	Light House Hill Road	Nos.	4				4.00
	KMC Merkeria Road	Nos.	6				6.00
		Nos.				Total Qty.	32.00
51	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, supply and installation of retro- reflectorised cautionary, mandatory and informatory signboards made out of cube corner micro prismatic grade sheeting confirming to 600x800 MM type XI standards of IRC :67:2012 specifications & fixed over 4 mm thick aluminium composite panel sheet having minimum 0.30 thick aluminium skin on both sides & fixed over a support frame of 25x25x3 mm MS angle and mounted on 75mm dia OR 75x75x6mm Mild steel angle of total height 2.70m 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 white colour with brands of 30 cm height alternatively firmly fixed to the ground by means of foundation with						
	M20 grade cement concrete of 45 cm x45 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 as directed by engineer in charge. 10 years warranty for retro reflective sheeting from the original sheeting manufacturer as per clause 6.9 in IRC 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. KSRRB 18-19 Pg No.182 SI No.24.2.4						
	Pandeshwar Road	Nos.	0				0.00
	Rosario Church Road	Nos.	0				0.00
	Bunder Road	Nos.	0				0.00
	Light House Hill Road	Nos.	3				3.00
	KMC Merkeria Road	Nos.	0				0.00
		Nos.				Total Qty.	3.00
50.00	Direction and Place Identification Signs upto 0.9 sqm Size Board: Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 x 45 x 60 em, 60 em below ground level as per approved drawing. KSRRB 18-19,Pg No.180 SI No.24.3						
				Area			
	Pandeshwar Road	Sqm	5	0.9			4.50
	Rosario Church Road	Sqm	5	0.9			4.50
	Bunder Road	Sqm	5	0.9			4.50
	Light House Hill Road	Sqm	5	0.9			4.50
	KMC Merkeria Road	Sqm	5	0.9			4.50
	Extension of Bibi Alabi Road	Sqm	4	0.9			3.60
		Sqm				Total Qty.	26.10
52	KSRRB M800 Road markers / Road stud KSRRB M800 Road markers I Road studKSRRB MS00-35. Supply and Installion of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS(Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of Category A of MORTH Circular No RW/ NH/33023/10-97- DO III Dt 11.06.1997 The						
	Pandeshwar Road	Nos	162				162.00
	Rosario Church Road	Nos	232				232.00
	Bunder Road	Nos	190				190.00
	Light House Hill Road	Nos	258				258.00
	KMC Merkeria Road	Nos	248				248.00
	Extension of Bibi Alabi Road	Nos	48				48.00
		Nos.				Total Qty.	1138.00

Sr. No.	Description	Unit	No's	L	B	H	Qty.
53	Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (KSRRB 18-19,Page No 182,SI No : 24.15)						
	Pandeshwar Road						
	Ch.0 to Ch.270.0						
	Continuos Line	Sqm	4	270	0.1		108.00
	Dash Lines	Sqm	2	162	0.1		32.40
	Arrow	Sqm	32	0.76	Area/Rm		24.32
	Pedstrian Crossing	Sqm	5	14.2	1.4		99.40
	Table Top Crossing	Sqm	1	14.2	16.82		238.84
	Rosario Church Road						
	Ch.40.0 to Ch.490.0						
	Continuos Line	Sqm	2	450	0.1		90.00
	Dash Lines	Sqm	2	270	0.1		54.00
	Arrow	Sqm	36	0.76	Area		27.36
	Pedstrian Crossing	Sqm	5	9.79	1.4	Area/Rm	68.53
	Table Top Crossing	Sqm	1	9.79	16.82	Area/Rm	164.67
	Rosario Church Road-1						
	Ch.40.0 to Ch.490.0						
	Continuos Line	Sqm	2	450	0.1		90.00
	Dash Lines	Sqm	2	270	0.1		54.00
	Arrow	Sqm	36	0.76	Area		27.36
	Pedstrian Crossing	Sqm	6	9.79	1.4	Area/Rm	82.24
	Table Top Crossing	Sqm	1	9.79	16.82	Area/Rm	164.67
	Rosario Church Road-2						
	Ch.490.0 to Ch.900.0						
	Continuos Line	Sqm	2	410	0.1		82.00
	Dash Lines	Sqm	0	246	0.1		0.00
	Arrow	Sqm	40	0.76	Area		30.40
	Pedstrian Crossing	Sqm	7	6	1.4	Area/Rm	58.80
	Table Top Crossing	Sqm	0	6	16.82	Area/Rm	0.00
	Bunder Road						
	Ch.0.0 to Ch.1336.0						
	Continuos Line	Sqm	2	1336	0.1		267.20
	Dash Lines	Sqm	0	801.6	0.1		0.00
	Arrow	Sqm	40	0.76	Area		30.40
	Pedstrian Crossing	Sqm	7	6	1.4	Area/Rm	58.80
	Table Top Crossing	Sqm	0	6	16.82	Area/Rm	0.00
	Light House Hill Road						
	Ch.0.0 to Ch.800.0						
	Continuos Line	Sqm	2	800	0.1		160.00
	Dash Lines	Sqm	2	480	0.1		96.00
	Arrow	Sqm	90	0.76	Area		68.40
	Pedstrian Crossing	Sqm	4	9.3	1.4	Area/Rm	52.08
	Table Top Crossing	Sqm	1	9.3	16.82	Area/Rm	156.43
	KMC Merkera						
	Ch.0.0 to Ch.800.0						
	Continuos Line	Sqm	2	800	0.1		160.00
	Dash Lines	Sqm	2	480	0.1		96.00
	Arrow	Sqm	90	0.76	Area		68.40
	Pedstrian Crossing	Sqm	4	9.6	1.4	Area/Rm	53.76
	Table Top Crossing	Sqm	3	9.6	16.82	Area/Rm	484.42
	KMC Merkera						
	Ch.0.0 to Ch.100.0						
	Continuos Line	Sqm	2	100	0.1		20.00
	Dash Lines	Sqm	2	60	0.1		12.00
	Arrow	Sqm	4	0.76	Area		3.04
	Pedstrian Crossing	Sqm	4	9.6	1.4	Area/Rm	53.76
		Sqm			Total Qty.		3337.67

Sr. No.	Description	Unit	No's	L	B	H	Qty.
54	Providing and Fixing of Bus shelter(on prepared foundation) made of SS 304 frame work with brush steel finish, Galvanised Aluminium powder coated roofing and electronic circuit to control its lighting.The seating shall be made of SS 304 tubular sections for seat and back rest.each unit size of 4500mm x 600mm with a minimum backrest support of 450mm.Bus shelter shall have the Side Display board to have 1100X400mm Electronic display.The electronic display board to be of LED Scrolling type with Oval, 4.3 x 5.1mm dia. Diffused. LED's having Amber colour.Dual bin system should be adopted one for recycle waste & other for dry waste.Each bin shall be with minimum capacity of 70Ltrs.Interactive Information Panel-display equipment with information area of 1400 x 1400 and touch screen LED display panel of area not less than 600-900mm with integrated 8mm toughened glass.Advertisement Area 2 nos of size 4500mm x 1650mm and 2100mm x 2000mm shall be integrated within the design of the Bus Shelter. This shall be backlit type with SS box framing sides and back complete.Provision for installing outdoor WiFi Router.The Foundation slab shall be made in min M25 concrete. The cast iron nuts, bolts shall be rust proof hot deep galvanized powder coated etc.The materials used shall be Nonflammable (NON SOR Item)	Nos.	2				2.00
55	Providing & installing of E- toilet with Super structure of the electronic toilet to have asthetic ambience with inner room size 1.2 x 0.8 x 2.4 (LXWXH)meters and Size of electronic toilet overall size in meters 2.30x1.25x2.80 (LXWXH) Total area 35 Sft. with Built-access controlled main door and side walls made of SS Grade 304,Toilet floor and closet are to be stainless steel of grade 304.E-Toilet shall have Built-in water tank with minimum 225 Lit capacity and Access controll using coin validator for entering the unit based on automatic payment collection mechanism exit from the unit should be manual.Automatic lights inside the unit with gloves on opening the door.E-Toilet shall be Automatic flushing system which includes Automatic Pre flush cleaning before use,Automatic closet washing mechanism after use and Automatic platform cleaning mechanism programmed after specific numbers.In addition to these flush switch is to be provided for manual operation.Standard features should include heath faucet,exhaust fan and cloth hanger.	Nos.	2				2.00
	The E-Toilet shall have Alert to users-different indication on 'ready to use',busy are to be provided in the unit also with Voice guidance in the unit for users. Web enabled support-GPRS based Real time data to be provided from the unit through web for knowing the health status like number of users per day and coins collected.E-toilet shall have Modular and portable design enabling easy assembling and installation at site.Call ceneter and web portal facilities for registering complience and tracking usage,coin collection etc.Status display in LED,Printed instruction stickers are to be provided.For Advertisement purpose space for advertisement disply to be provided on the exterior of the unit for income generation and sustainability. Backup power facility like UPS is to be provided to supplement upto 30 Min Base of the unit to be placed on a suitable concrete structure with a ashthetic finish. (Non SOR Item)						
56	KSRB 6-2.3 : Providing and constructing burnt brick masonry with approved quality of non-modular bricks of standard size of class designation 5.0Newton per sqmm (table moulded) with cement mortar 1:6 for basement and superstructu/re including cost of materials, labour charges, scaffolding, curing complete as per specifications. Specification No. KBS 6.2. (KSRB 18-19,Page No.29,Sl.No.6.7)						
	Pandeshwar Road						
	Long Wall	Cum	8.00	3.00	0.23	0.65	3.59
	Short Wall	Cum	8.00	0.60	0.23	0.65	0.72
	Rosario Church Road						
	Long Wall	Cum	8.00	3.00	0.23	0.65	3.59
	Short Wall	Cum	8.00	0.60	0.23	0.65	0.72
	Bunder Road						
	Long Wall	Cum	8.00	3.00	0.23	0.65	3.59
	Short Wall	Cum	8.00	0.60	0.23	0.65	0.72
	Light House Hill Road						
	Long Wall	Cum	16.00	3.00	0.23	0.65	7.18
	Short Wall	Cum	16.00	0.60	0.23	0.65	1.44
	KMC Merkera Road						
	Long Wall	Cum	16.00	3.00	0.23	0.65	7.18
	Short Wall	Cum	16.00	0.60	0.23	0.65	1.44
		Cum			Total Qty.		30.14

Sr. No.	Description	Unit	No's	L	B	H	Qty.
57	KSRB15-3.8 : Providing 18mm thick cement plaster in single coat with cement mortar 1:4, to brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications.(KSRRB 18-19,Page No.116,SI No.15.16)						
	Pandeshwar Road						
	Long Wall	Sqm	8.00	3.00		0.45	10.80
	Short Wall	Sqm	8.00	0.60		0.45	2.16
	Rosario Church Road						
	Long Wall	Sqm	8.00	3.00		0.45	10.80
	Short Wall	Sqm	8.00	0.60		0.45	2.16
	Bunder Road						
	Long Wall	Sqm	8.00	3.00		0.45	10.80
	Short Wall	Sqm	8.00	0.60		0.45	2.16
	Light House Hill Road						
	Long Wall	Sqm	16.00	3.00		0.45	21.60
	Short Wall	Sqm	16.00	0.60		0.45	4.32
	KMC Merкера Road						
	Long Wall	Sqm	16.00	3.00		0.45	21.60
	Short Wall	Sqm	16.00	0.60		0.45	4.32
		Sqm				Total Qty.	90.72
58	Providing and fixing 450mm wide X 600mmX 20mm thk.RIVERWASHED BLACK GRANITE CLADDING on surface of seating as directed by architect (Non SOR Item)						
	Pandeshwar Road						
	Bench	Sqm	4.00	3.00		0.60	7.20
	Rosario Church Road						
	Bench	Sqm	4.00	3.00		0.60	7.20
	Bunder Road						
	Bench	Sqm	4.00	3.00		0.60	7.20
	Light House Hill Road						
	Bench	Sqm	8.00	3.00		0.60	14.40
	KMC Merкера Road						
	Bench	Sqm	8.00	3.00		0.60	14.40
		Sqm				Total Qty.	50.40
59	Supply and Fixing of Traffic signal Straight pole of 6 mtr, inner dia 100 mm from resistant to peeling with base plate size of (LXWXT) 200mm X200mmX6mm painted with redoxide and double coat with synthetic enamel paint of yellow colour assembly G.I., class B, as per technical specification	Nos.	2				2.00
60	Supply and fixing of Traffic signal Cantilever pole Class B having inner diameter of 100 mm or more with a height of 6m including extension arm assembly having outer diameter of 75mm with arm span of 4 mtr length and base plate of size 300mm X 300mm with thickness of 6 mm welded at the bottom of the pole base as per technical specification & drawings. (NON SOR Item)	Nos.	2				2.00
61	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (blow) as per Specification (NON SOR Item)	Nos.	4				4.00
62	Supply and fixing of 300 mm dia – single source – LED retrofit - Amber (blow) as per Specification (NON SOR Item)	Nos.	4				4.00
63	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (arrow/U- Turn) EN-12368 as per Specification (NON SOR Item)	Nos.	4				4.00
64	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (ped. standing) EN-12368 as per Specification (NON SOR Item)	Nos.	4				4.00
65	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (ped.walking) EN-12368 as per Specification (NON SOR Item)	Nos.	4				4.00
66	Supply and fixing of 300 mm dia - No Right Turn/No Left turn/No Straight/No 'U' Turn aspects by using UV stabilized ink on face plate EN-12368 as per Specification (NON SOR Item)	Nos.	4				4.00
67	Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	302				302.00
68	Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)						
	Handrail						
	Road						
	RHS	Rm	1	100			100.00
	LHS	Rm	1	100			100.00
		Rm				A=	200.00

Sr. No.	Description	Unit	No's	L	B	H	Qty.
	Hand Rail of length 2.4 meter Steel Qty.						
	Horizontal Member-M.S.Box 25x25x3.2mm thk.	KG		3	2.4	4.536	32.66
	Vertical Member-M.S. Box 50x25x3.2mm thk.	KG		1	1.375	7.368	10.13
	Vertical Bar-Dia 16mm	KG		20	0.475	0.7493296	7.12
					Area	Thk	
	Logo Plate	KG		1	0.07065	0.001	0.000071
		KG				Total Wight for 2.4 m Railing (A)	49.91
	Railing per 1m Weight(A / 2.4 m)	KG				B=	20.8
	Total Railing Weight (A x B)	MT					4.16
69	Providing and Fixing SS 304 Outdoor Dustbin(Pivoted Type and Mounted on SS Poles) of 55 liters capacity all complete to the satisfaction of the Engineer in charge.	Nos.	111				111.00
70	Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead of 5 km Item No 17.4 KSRRB M100-4.1-Earth	Cum	1.00	30188.97			30188.97
71	Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead of 5km Item No 17.4 KSRRB M100-4.1-Debris	Cum	1.00	5342.75			5342.75

Assistant Engineer
MSCL Mangaluru

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

Name of the Work :- Mangalore Smart City
1.2 Rate Analysis of Road & Other Work for DPR 3

1	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)			
	Basic rate		68.16	
	Add 10% For area weightage (Mangalore City)		6.82	
		Rate	74.98	Sqm
2	KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock pilling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (KSRRB 18-19,Page No 140,SI No : 18.47)			
	Basic rate		899	
	Initial Lead of 5km		13	
	Add 10% For area weightage (Mangalore City)		89.9	
		Rate	1001.90	Cum
3	KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (KSRRB 18-19,Page No.141,S.I.No.18.49)			
	Basic rate		12.00	
	Add 10% For area weightage (Mangalore City)		1.20	
		Rate	13.20	Rmt
4	KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KSRRB 18-19,18.20,Page No.139)			
	Basic rate		390	
	Add 10% For area weightage (Mangalore City)		39	
		Rate	429.00	Cum
5	KSRRB M200-17.2. Dismantling of 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 specifications. v)Steel work in all types of Sections upto a Height of 5 m above plinth level excluding Cutting of Rivet- B. Excluding dismembering. (KSRRB 18-19,18.34,Page No.140)			
	Basic rate		1893	
	Add 10% For area weightage (Mangalore City)		189.3	
		Rate	2082.30	MT
6	KSRRB 300-50. Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by road roller attached with scarifier without disturbing the base and stacking the debris including cost of all labour charges, HOM of machineries complete as per specifications. MORTH / Section 5.(KSRRB 18-19, SI No.19.56,Pg No.146)			
	Basic rate		39	
	Add 10% For area weightage (Mangalore City)		3.9	

		Rate	42.90	Sqm
7	KSRRB 300-46. Scarifying by mechanical means stone metal crust 50mm to 100mm thick by along with 20mm premix carpet I surface dressing and stacking of old serviceable materials including cost of all labour charges, HOM complete as per specifications. MORTH I Chapter 3.(KSRRB 18-19,SI No.19.52,Pg No.146)			
	Basic rate		39	
	Add 10% For area weightage (Mangalore City)		3.9	
		Rate	42.90	Sqm
8	KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantaling Brick/Tile work B.In Cement mortar (KSRRB 18-19,Page No 137,SI No : 18.23)			
	Basic rate		351	
	Add 10% For area weightage		35.1	
		Rate	386.10	Cum
9	Removing B.S slab of drain and stacking.(KSRB 18-19,5.32,Page No.27)			
	Basic rate		98	
	Add 10% For area weightage		9.8	
		Rate	107.80	Sqm
10	KSRRB M800-Permanent type barricade in construction zone KSRRB M800-44.1. Construction of a permanent type barricade made of steel components, 1.5 m high from road level, fitted with 3 horizontal rails 200 mm wide and 4 m long on 50 x 50 x 5 mm angle iron vertical support, painted with yellow and white strips, 150 mm in width at an angle of 45°, complete as per IRC:SP:55-2014 complete as per specifications . A. With steel components(KSRRB 18-19,Page No 187,SI No : 24.45)			
	Basic rate		3829	
	Add 10% For area weightage (Mangalore City)		382.9	
		Rate	4211.90	Each
11	KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 5.00Km and complete as per specifications. MORTH specification No.301 (KSRRB 18-19,Page No 143,SI No : 19.14)			
	Basic rate for 1KM		41	
	Extra for carriage beyond 1km and upto 5km		10.24	
	Add 10% For area weightage (Mangalore City)		5.12	
		Rate	56.36	Cum
12	KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KSRB 18-19,SI No.2.11,Pg. No.7)			
	Basic rate		120	
	Add 10% For area weightage (Mangalore City)		12	
		Rate	132.00	Cum
13	KSRRB 300-58. Compaction of original ground by mechanical means including filling in depression occuring during rolling including cost of all labour, HOM complete as per specifications. MORTH I Chapter 3 (KSRRB 18-19,SI No.19.64,Pg. No.147)			
	Basic rate		6	
	Add 10% For area weightage (Mangalore City)		0.6	

		Rate	6.60	Sqm
14	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of M 15 Grade with OPC @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.53cum, machine mixed, concrete laid in layers not exceeding 15 ems. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM curing complete as per specifications. Specification No. KBS 4.1, 4.2 (KSRB 18-19,P.No.13, SI.No. 4.6)			
	Basic Rate		5900	
	Add 10% For area weightage (Mangalore City)		590	
		Rate	6490.00	Cum
15	KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-1) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (SI.No.20.4 of KPWD SR 2018-19)			
	Basic Rate		2166	
	Add 10% For area weightage (Mangalore City)		216.6	
		Rate	2382.60	Cum
16	KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters conforming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (KSRB 18-19,Page No 14,SI No :4.10)			
	Basic Rate		6198	
	Add 10% For area weightage (Mangalore City)		619.8	
		Rate	6817.80	Cum
17	KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (KSRB 18-19,Page No 16,SI No : 4.28)			
	Basic Rate		263	
	Add 10% For area weightage (Mangalore City)		26.3	
		Rate	289.30	Sqm
18	KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500 (KSRB 18-19,Page No 18,SI No : 4.46.2)			
	Basic Rate		70782	
	Add 10% For area weightage (Mangalore City)		7078.2	
		Rate	77860.20	MT

19	KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murrum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305 (KSRB 18-19,Page No 146,SI No : 19.62 & 17.4)			
	Basic Rate		513	
	Add 20km lead (17.4 KSRRB M100-4.1-Cost of haulage excluding loading and unloading MORTH-100/Chapter 1-case 1-Surface Road)=2.0 Rs/ Tkm x 1.28 T x 20km		51.2	
	Sub Total		564.2	
	Add 10% For area weightage (Mangalore City)		56.42	
		Rate	620.62	Cum
20	KSRRB M600-1.Providing and Constructing dry lean cement concrete M15 mix CC 1:5:10 base with OPC 25mm and down size graded granite metal coarse aggregate at 0.86cum and fine aggregates @0.58cum over a prepared sub-base, coarse and fine aggregate conforming to IS: 383-2016,aggregate cement ratio not to exceed 15:1, Aggregate gradation after blending to be as per Table 600-1,optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver, compacting with 8-10 tonnes vibratory roller, finishing and curing complete as per specifications. Clause 601of MORTH V Revision and IS 456 Table-5 -do- with OPC at 150 kg/cum and coarse aggregate 0.86cum, fine aggregate 0.58cum using Concrete Batch mix Plant at 75 cum/hr capacity with Slip form paver with electronic sensor. (KSRRB 18-19,Page No 174,SI No : 22.1.1)			
	Basic Rate		4048	
	Add 10% For area weightage (Mangalore City)		404.8	
		Rate	4452.80	Cum
21	KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per MORTH specifications Clause 601. (RA attached)			
	Basic Rate		3680	
	Add 10% For area weightage (Mangalore City)		368	
		Rate	4048.00	Cum

22	<p>KSRRB M600-2. Providing and Constructing un-reinforced, dowel jointed, plain cement Pavement Quality concrete for pavements using Grade concrete M40 having Flexural strength not less than 4.50 Mpa over a prepared base with OPC, coarse aggregate at 0.64 cum, fine aggregates at 0.36 cum, Coarse and fine aggregate conforming to IS:383-2016 and Table 600-3 of MORTH V Revision, with Superplastizer at 3 lts conforming to IS 9103-2008. loading materials to batch mix plant by front end loader, mixed in a cement concrete batch mix plant as per approved mix design, transported to site in transit truck agitator 5 cum capacity, laid with Paver, compacted and finished in a continuous operation as per IRC-15 including cost for providing of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane of impermeable plastic sheet of 125 micron, groove cutting, sealant primer joint sealant, debonding strip, dowel bars at 9 kg/cum, tie rods at 1.15 kg/cum, admixtures as approved, curing compound, finishing to lines and grades, textured with texturing machine, and curing including cost of all materials, labour, hire charges of machineries, all lead & lift charges etc., complete as per specifications. Clause 601 of MORTH V Revision and IS 456 Table-5</p> <p>-do- with OPC at 420 kg/cum and coarse aggregate 0.64 cum, fine aggregate 0.36 cum using Concrete Batch mix Plant at 75 cum/hr capacity with fixed form paver. (KSRRB 18-19, Page No 175 & 176, SI No : 22.2.2)</p>				
	Basic Rate			5765	
	Add 10% For area weightage (Mangalore City)			576.5	
		Rate		6341.50	Cum
23	<p>Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower and as shown on drawing and as per MORTH specifications clause 602. (Non SOR Item)</p>				
	Rate Approved as per EOI by MD MSCL Mangalore, Refer Sr.No.2	Rate		115	Rmt
24	<p>KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications. Morth specification No.3005.1 (KSRRB 18-19, Page No 260, SI No : 35.8)</p>				
	Basic Rate			331	
	Add 10% For area weightage (Mangalore City)			33.1	
		Rate		364.10	Rmt
25	<p>Providing and laying at or near ground level factory made Median kerb stone of M-20 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 drawing. (Precast C.C. kerb stone shall be approved by Engineer-in-charge). (RA Attached)</p>				
	Rate Arrived as per Rate analysis				
	Basic Rate			17708.82	
	Add 10% For area weightage (Mangalore City)			1770.88	
		Rate		19479.70	Cum
26	<p>Providing and fixing pre cast solid concrete Kerb stones as per the drawing, made out of CC M20 and Jointed with CM 1:3 and finishing cutting, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete (RA Attached)</p>				
	Basic rate of one Kerb stone of M15 Grade = 0.0279 Cum SI No.5.30 Pg No.27 of KSRRB 18-19			421	
	Rate for 1 cum of Kerb Stone			15089.61	

	Add difference in cement concrete of M15 to M20 Grade		392.48	
	Total Rate		15482.09	
	Add 10% For area weightage (Mangalore City)		1548.21	
		Rate	17030.30	Cum
27	Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC M20 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (RA Attached)			
	Basic rate of one Kerb stone of M15 Grade =0.0279Cum SI No.5.30 Pg No.27 of KSRB 18-19		421	
	Rate for 1cum of Kerb Stone		15089.61	
	Add difference in cement concrete of M15 to M20 Grade		392.48	
	Total Rate		15482.09	
	Add 10% For area weightage (Mangalore City)		1548.21	
		Rate	17030.30	Cum
28	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per MORTH specifications section 8. (KSRRB 18-19,Page No 180,SI No : 24.1)			
	Basic Rate		80	
	Add 10% For area weightage (Mangalore City)		8	
		Rate	88	Sqm
29	P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)			
	Rate Arrived as per Rate analysis			
	Basic Rate		917	
		Rate	917	Nos.
30	Providing and Fixing Recessed Inception chamber cover - size: (600 x 450)mm Material			
	Basic Rate			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.15	Rate	3500.00	Nos.
31	KSRRB M300- Wrought iron and mild steel welded work KSRRB M300-18. Wrought iron and mild steel welded work (using angles, square bars, tees and channel grills, gratings with grating frames, gates and tree guards of any size and design etc. including cost of screens and welding rods or bolts and nuts complete fixed in position but without the cost of excavation and concrete for fixing which will be paid separately complete as per specifications.(KSRB 18-19,SI.No.19.97,Pg.No.150)			
	Basic Rate		7187	
	Add 10% For area weightage (Mangalore City)		718.7	
		Rate	7905.7	Quintal
32	KSRRB 12-8.2 : Constructing brick masonry inspection chamber 500x700mm, and 450mm depth, (clear inside dimension) for pipeline with one or two inlets, using table moulded non-modular bricks of class designation 50 in cement mortar 1:5, C.I cover with frame (light duty) 455x610mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23kg and weight of frame 15 kg) R.C.C. top slab with cement concrete M 15 with 20mm and downsize granite metal , foundation concrete M 5 with 40mm and downsize granite metal inside plastering 12mm thick with cement mortar 1:3, finished smooth with a floating coat of cement on walls and bed concrete complete as per standard design including cost of materials, labour charges, curing complete as per specifications. Specification No. KBS (P.No. 76/ I.No.11.52 of PWD SR 2018-19)			
	Basic Rate		8296	
	Add 10% For area weightage (Mangalore City)		829.6	

		Rate	9125.6	Nos.
33	Providing gully pipe lowering, laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line. The rate shall include all jointing materials, testing apparatus and water for testing etc as directed by the Engineer in charge (page No.41, Item No.7, KUWSDB SOR 2016-17)			
	Basic Rate		297	
	Add 12% on Labor Charges=Rs.47, For area weightage (Mangalore City)		4.7	
		Rate	301.7	Rm
34	KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia, of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (KSRB SR 2018-19, P.No.88, SI.No.12.89)			
	Basic Rate		830	
	Add 10% For area weightage (Mangalore City)		83	
		Rate	913	Nos.
35	KSRRB M800-29.3. Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case-III : Triple row for three utility services. (KSRRB 2018-19, Pg No 186, SI.No.24.36)			
	Basic Rate		5022	
	Add 10% For area weightage (Mangalore City)		502.2	
		Rate	5524.20	Rm
36	Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)			
	Basic Rate		2300	
	Deduct GST @ 18%		-414	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		78	
	Add 10% For area weightage (Mangalore City)		7.8	
		Rate	1971.80	Rm
37	Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)			
	Basic Rate		1215	
	Deduct GST @ 18%		-218.7	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		66	
	Add 10% For area weightage (Mangalore City)		6.6	
		Rate	1068.90	Rm

38	Providing and Fixing Spacers for Power Ducts of size 225 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)			
	Basic Rate		1003	
		Rate	1003.00	Nos.
39	Providing and Fixing Spacers for Power Ducts of size 160 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)			
	Basic Rate		1947	
		Rate	1947.00	Nos.
40	Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)			
	Basic Rate		685	
	Deduct GST @ 18%		-123.3	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		36	
	Add 12% For area weightage (Mangalore City)		3.6	
		Rate	601.30	Rm
41	Providing and laying heavy duty cobble stones 60mm thick, using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (KSRB 18-19, Pg No 103, SI No : 14.6)			
	Basic rate		1056.00	
	Add 10% For area weightage (Mangalore City)		105.6	
		Rate	1161.60	Sqm
42	Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and coarse sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore, Refer Sr.No.12	Rate	912.00	Sqm
43	Providing and laying heavy duty cobble stones 75mm thick, using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (KSRB 18-19, Page No 103, SI No : 14.7)			
	Basic rate		1114	
	Add 10% For area weightage (Mangalore City)		111.4	
		Rate	1225.40	Sqm

44	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 120 TPH capacity Asphalt batch mix plant with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (KSRRB 18-19,S.I.No.21.17.2,Page No.160)			
	Basic rate		7839	
	Add 10% For area weightage (Mangalore City)		783.9	
		Rate	8622.90	Cum
45	KSRRB M500-19. Providing and laying bituminous concrete using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a 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 complete as per specifications. Clause 507 of MORTH V revision No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 5.4 % VG-40 Bitumen (KSRRB 18-19,S.I.No.21.22.6,Page No.162)			
	Basic rate		8761	
	Add 10% For area weightage (Mangalore City)		876.1	
		Rate	9637.10	Cum
46	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary for satisfactory completion of the works as directed be engineer in-charge.			
	10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 900MM Equilateral Triangle-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.1)			
	Basic Rate		3511	
	Add 10% For area weightage (Mangalore City)		351.1	
		Rate	3862.10	Nos
48	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary for satisfactory completion of the works as directed be engineer in-charge.			

	10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 900MM Octagon Stop Board-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.6)			
	Basic Rate		4958	
	Add 10% For area weightage (Mangalore City)		495.8	
		Rate	5453.80	Nos
49	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory & Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications & fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides & fixed over a support frame of 25X25X3mm MS angle and mounted on 75 mm dia OR 75X75X6mm mild steel angle to 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 & 60mm below ground level. the sign post should be painted with be 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 M20 grade cement concrete of 45cmX45cmX60cm including cost & conveyance of all materials, equipment, machinery & labour with all leads and lifts, loading charges necessary for satisfactory completion of the works as directed be engineer in-charge.			
	10 years warranty for Retro Reflective Sheeting from the original sheeting manufactures as per clause 6.9 in IRC: 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. 600MM Circle-TYPE XI (KSRRB 18-19,Page No 180,SI No : 24.2.3)			
	Basic Rate		3118	
	Add 10% For area weightage (Mangalore City)		311.8	
		Rate	3429.80	Nos
53	Direction and Place Identification Signs upto 0.9 sqm Size Board: Providing and erecting direction and place identification retro-reflectorised sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 2 mm thick with area not exceeding 0.9 sqm supported on a mild steel single angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 x 45 x 60 em, 60 em below ground level as per approved drawing. KSRRB 18-19,Pg No.180 SI No.24.3			
	Basic Rate		6927	
	Add 10% For area weightage (Mangalore City)		692.7	
		Rate	7619.70	Sqm
51	KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, supply and installation of retro-reflectorised cautionary, mandatory and informatory signboards made out of cube corner micro prismatic grade sheeting confirming to 600x800 MM type XI standards of IRC :67:2012 specifications & fixed over 4 mm thick aluminium composite panel sheet having minimum 0.30 thick aluminium skin on both sides & fixed over a support frame of 25x25x3 mm MS angle and mounted on 75mm dia OR 75x75x6mm Mild steel angle of total height 2.70m 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 white colour with brands of 30 cm height alternatively firmly fixed to the ground by means of foundation with			
	M20 grade cement concrete of 45 cm x45 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 as directed by engineer in charge. 10 years warranty for retro reflective sheeting from the original sheeting manufacturer as per clause 6.9 in IRC 2012 & a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier. KSRRB 18-19,Pg No.182,SI No.24.2.4			

	Basic Rate		4049	
	Add 10% For area weightage (Mangalore City)		404.9	
		Rate	4453.90	Nos
52	<p>KSRRB M800 Road markers / Road stud KSRRB M800 Road markers I Road studKSRRB MS00-35. Supply and Installtion of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS(Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of Category A of MORTH Circular No RW/ NH/33023/10-97- DO III Dt 11.06. 1997. The height, width and length shall not exceed 50 mm, 1DO mm and 102 mm and with minimum reflective area of 13 Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19 mm and height not less than 30 mm) from the body is to be a minimum value of 500 Kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer KSRRB 18-19,Pg No.187,SI No.24.41</p>			
	Basic Rate		289	
	Add 10% For area weightage (Mangalore City)		28.9	
		Rate	317.90	Nos.
53	<p>Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (KSRRB 18-19,Page No 182,SI No : 24.15)</p>			
	Basic Rate		429	
	Add 10% For area weightage (Mangalore City)		42.9	
		Rate	471.90	Sqm
54	<p>Providing and Fixing of Bus shelter(on prepared foundation) made of SS 304 frame work with brush steel finish, Galvanised Aluminium powder coated roofing and electronic circuit to control its lighting.The seating shall be made of SS 304 tubular sections for seat and back rest.each unit size of 4500mm x 600mm with a minimum backrest support of 450mm.Bus shelter shall have the Side Display board to have 1100X400mm Electronic display.The electronic display board to be of LED Scrolling type with Oval, 4.3 x 5.1mm dia. Diffused. LED's having Amber colour.Dual bin system should be adopted one for recycle waste & other for dry waste.Each bin shall be with minimum capacity of 70Ltrs.Interactive Information Panel-display equipment with information area of 1400 x 1400 and touch screen LED display panel of area not less than 600-900mm with integrated 8mm toughened glass.Advertisement Area 2 nos of size 4500mm x 1650mm and 2100mm x 2000mm shall be integrated within the design of the Bus Shelter. This shall be backlit type with SS box framing sides and back complete.Provision for installing outdoor WiFi Router.The Foundation slab shall be made in min M25 concrete. The cast iron nuts, bolts shall be rust proof hot deep galvanized powder coated etc.The materials used shall be Nonflammable (NON SOR Item)</p>			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer	Rate	1500000	Nos.

55	Providing & installing of E- toilet with Super structure of the electronic toilet to have asthetic ambience with inner room size 1.2 x 0.8 x 2.4 (LXWXH)meters and Size of electronic toilet overall size in meters 2.30x1.25x2.80 (LXWXH) Total area 35 Sft. with Built-access controlled main door and side walls made of SS Grade 304,Toilet floor and closet are to be stainless steel of grade 304.E-Toilet shall have Built-in water tank with minimum 225 Lit capacity and Access controll using coin validator for entering the unit based on automatic payment collection mechanism exit from the unit should be manual.Automatic lights inside the unit with gloves on opening the door.E-Toilet shall be Automatic flushing system which includes Automatic Pre flush cleaning before use,Automatic closet washing mechanism after use and Automatic platform cleaning mechanism programmed after specific numbers.In addition to these flush switch is to be provided for manual operation.Standard features should include heath faucet,exhaust fan and cloth hanger.The E-Toilet shall have Alert to users-different indication on 'ready to use',busy are to be provided in the unit also with Voice guidance in the unit for users. Web enabled support-GPRS based Real time data to be provided from the unit through web for knowing the health status like number of users per day and coins collected.				
	E-toilet shall have Modular and portable design enabling easy assembling and installation at site.Call ceneter and web portal facilities for registering complience and tracking usage,coin collection etc.Status display in LED,Printed instruction stickers are to be provided.For Advertisement purpose space for advertisement dispaly to be povided on the exterior of the unit for income generation and sustainability. Backup power facility like UPS is to be provided to supplement upto 30 Min Base of the unit to be placed on a suitable concrete structure with a ashthetic finish. (Non SOR Item)				
	Basic rate			575000	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.1	Rate		575000	Nos.
56	KSRB 6-2.3 : Providing and constructing burnt brick masonry with approved quality of non-modular bricks of standard size of class designation 5.0Newton per sqmm (table moulded) with cement mortar 1:6 for basement and superstructu/re including cost of materials, labour charges, scaffolding, curing complete as per specifications. Specification No. KBS 6.2. (KSRB 18-19,Page No.29,SI.No.6.7)				
	Basic rate			7797	
	Add 10% For area wightage			779.7	
		Rate		8576.70	Cum
57	KSRB15-3.8 : Providing 18mm thick cement plaster in single coat with cement mortar 1:4, to brick masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing complete as per specifications.(KSRRB 18-19,Page No.116,SI No.15.16)				
	Basic rate			262	
	Add 10% For area wightage			26.2	
		Rate		288.2	Sqm
	Providing and fixing 450mm wide X 600mmX 20mm thk.RIVERWASHED BLACK GRANITE CLADDING on surface of seating as directed by architect (Non SOR Item)				
	Basic Rate			3527	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer	Rate		3527.00	Sqm
59	Supply and Fixing of Traffic signal Straight pole of 6 mtr, inner dia 100 mm from resistant to peeling with base plate size of (LXWXT) 200mm X200mmX6mm painted with redoxide and double coat with synthetic enamel paint of yellow colour assembly G.I., class B, as per technical specification (NON SOR Item)				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.5	Rate		18691	Nos.

60	Supply and fixing of Traffic signal Cantilever pole Class B having inner diameter of 100 mm or more with a height of 6m including extension arm assembly having outer diameter of 75mm with arm span of 4 mtr length and base plate of size 300mm X 300mm with thickness of 6 mm welded at the bottom of the pole base as per technical specification & drawings. (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.6	Rate	52850	Nos.
61	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (blow) as per Specification (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.7	Rate	11082	Nos.
62	Supply and fixing of 300 mm dia – single source – LED retrofit - Amber (blow) as per Specification (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.7	Rate	11082	Nos.
63	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (arrow/U- Turn) EN-12368 as per Specification (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.8	Rate	13973	Nos.
64	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (ped. standing) EN-12368 as per Specification (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.9	Rate	11082	Nos.
65	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (ped.walking) EN-12368 as per Specification (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.10	Rate	13973	Nos.
66	Supply and fixing of 300 mm dia - No Right Turn/No Left turn/No Straight/No 'U' Turn aspects by using UV stabilized ink on face plate EN-12368 as per Specification (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.11	Rate	6196	Nos.
67	Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)			
	Basic Rate		4500	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.13	Rate	4500.00	Nos.
68	Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)			
	Basic Rate		100000.00	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.26	Rate	100000.00	MT

69	Providing and Fixing SS 304 Outdoor Dustbin(Pivoted Type and Mounted on SS Poles) of 55 liters capacity all complete to the satisfaction of the Engineer in charge. (NON SOR Item)		
	Basic Rate		7500
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.14	Rate	7500.00
			Nos.
70	Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead of 5 km Item No 17.4 KSRRB M100-4.1-Earth		
	Earth		2.0x1.28x10km
	Baisc rate		25.60
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00
	Sub Total		82.60
	Add 10% For area weightage (Mangalore City)		8.26
		Rate	90.86
			Cum
71	Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead of 5km Item No 17.4 KSRRB M100-4.1-Debris		
	Debris		2.0x1.30x10Km
	Baisc rate		26.00
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00
	Sub Total		83.00
	Add 10% For area weightage (Mangalore City)		8.3
		Rate	91.30
			Cum

**Assistant Engineer
MSCL Mangaluru**

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City
3.2.1 BOQ of Electrical lighting Works for DPR-3 Roads

Sr.No.	Specification	Unit	Quantity	Rate	Amount	Remarks
1	Lighting Poles					
1.1	Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (RA attached)	Nos.	72	1,681	121,006	
1.2	Erection of metallic pole of following length in cement concrete 1 :3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 6.5 meter and upto 8.0 meter Existing poles (RA attached)	Nos.	64	4,057	259,648	
1.3	Erection of metallic pole of following length in cement concrete 1 :3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 8 meter and upto 11 meter Existing poles (RA attached)	Nos.	0	4,807	-	
1.4	Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)	Nos.	0	17,118	-	
1.5	Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	124	12,420	1,540,080	

Sr.No.	Specification	Unit	Quantity	Rate	Amount	Remarks
1.6	Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	60	7,398	443,880	
1.7	Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	6	3,540	21,240	
1.8	Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	239	2,400	573,600	
1.9	Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	0	700	-	
1.1	Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-above 5.5 mtr to 7.5 mtr (Ref Electrical SOR SI No.16.28.2)	Nos.	64	620	39,680	
2	Out Door Box and Switch Gear					
2.1	Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	No.	18	11,783	212,093	
2.2	Supply and fixing of miniature circuit breaker on exisiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	No.	18	1,547	27,846	
3	LT Cable					
3.1	Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)	m	8713	117	1,019,363	

Sr.No.	Specification	Unit	Quantity	Rate	Amount	Remarks
3.2	Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	3056	81.60	249,370	
3.3	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)	Nos	1952	11.31	22,077	
3.4	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	1464	3.12	4,568	
4	Earthing system					
4.1	Chemical Earthing for grounding,conduits,IC cut outs and otherequipmentson the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)	Kit	36	5,500.00	198,000	
4.2	Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	7691	19.50	149,975	
			TOTAL		48,82,426	

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City
3.2.2 M.S.of Electrical Lighting Works for DPR-3 Roads**

Sr.No.	Specification	Unit	No.	L	B	H	Quantity
1	Lighting Poles						
1.1	Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (RA attached)						
	Pandeshwar road	Nos.	5				5.00
	Rosario road	Nos.	2				2.00
	Light house hill road	Nos.	25				25.00
	KMC Markra Trunk Road	Nos.	37				37.00
	Bunder road	Nos.	3				3.00
						Total	72.00
1.2	Erection of metallic pole of following length in cement concrete 1 :3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 6.5 meter and upto 8.0 meter Existing poles (RA attached)						
	Pandeshwar road	Nos.	1				1.00
	Rosario road	Nos.	2				2.00
	Light house hill road	Nos.	21				21.00
	KMC Markra Trunk Road	Nos.	37				37.00
	Bunder road	Nos.	3				3.00
						Total	64.00
1.3	Erection of metallic pole of following length in cement concrete 1 :3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 8 meter and upto 11 meter Existing poles (RA attached)	Nos.					
						Total	0.00
1.4	Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)						
1.5	Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)						
	Pandeshwar road	Nos.	20				20.00

Sr.No.	Specification	Unit	No.	L	B	H	Quantity
	Rosario road	Nos.	40				40.00
	Light house hill road	Nos.	43				43.00
	KMC Markra Trunk Road	Nos.	13				13.00
	Mohmad Ali Road	Nos.	8				8.00
						Total	124
1.6	Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)						
	Rosario road	Nos.	10				10.00
	Bunder road	Nos.	50				50.00
						Total	60.00
1.7	Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)						
	Pandeshwar road	Nos.	5				5.00
	Rosario road	Nos.	0				0.00
	Light house hill road	Nos.	1				1.00
	KMC Markra Trunk Road	Nos.	0				0.00
	Bunder road	Nos.	0				0.00
						Total	6.00
1.8	Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)						
	Pandeshwar road	Nos.	16				16.00
	Rosario road	Nos.	52				52.00
	Light house hill road	Nos.	63				63.00
	KMC Markra Trunk Road	Nos.	50				50.00
	Bunder road	Nos.	50				50.00
	Mohmad Ali Road	Nos.	8				8.00
						Total	239
1.9	Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)						
	Total					Total	0
1.1	Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-above 5.5 mtr to 7.5 mtr (Ref Electrical SOR SI No.16.28.2)						
	Pandeshwar road	Nos.	1				1.00
	Rosario road	Nos.	2				2.00
	Light house hill road	Nos.	21				21.00
	KMC Markra Trunk Road	Nos.	37				37.00
	Bunder road	Nos.	3				3.00
	Total					Total	64
2	Out Door Box and Switch Gears						
2.1	Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets						
	Pandeshwar road	Nos.	2				2.00

Sr.No.	Specification	Unit	No.	L	B	H	Quantity
	Rosario road	Nos.	1				1.00
	Light house hill road	Nos.	4				4.00
	KMC Markra Trunk Road	Nos.	1				1.00
	Bunder road	Nos.	9				9.00
	Mahmad Ali Road	Nos.	1				1.00
						Total	18
2.2	Supply and fixing of miniature circuit breaker on existing board using necessary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)						
	Pandeshwar road	Nos.	2				2.00
	Rosario road	Nos.	1				1.00
	Light house hill road	Nos.	4				4.00
	KMC Markra Trunk Road	Nos.	1				1.00
	Bunder road	Nos.	9				9.00
	Mahmad Ali Road	Nos.	1				1.00
						Total	18
3	LT Cable						
3.1	Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)						
	Rosario Road (Consider 25% more length for looping) - 895 meters	m	2	1119			2238
	Pandeshwar Road (Double Arm) (Consider 25% more length for looping)	m	2	400			800
	Bundar Road (Single Arm) (Consider 25% more length for looping)	m	2	1675			3350
	Light House Road (Single Arm) (Consider 25% more length for looping)	m	2	1063			2125
	Mohmad Ali Road	m	2	100			200
						Total	8713
3.2	Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)						
	Pandeshwar road						
	7 mtr high pole	m	21	14			294.00
	Rosario road						
	7m high pole	m	42	14			588.00
	4mtr high pole	m	10	8			80.00
	Light house hill road						
	7 mtr high pole	m	63	14			882.00
	KMC Markkra Trunk Road						
	7 mtr road	m	50	14			700.00
	Bunder Road						
	4mtr road	m	50	8			400.00
	Mohmad Ali Road						
	7 mtr high pole	m	8	14			112.00
						Total	3056
3.3	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)		No.of Poles	No.of Lugs			
	Pandeshwar road						
	7 mtr high pole	Nos.	21	8			168.00
	Rosario road						
	7m high pole	Nos.	42	8			336.00
	4mtr high pole	Nos.	10	8			80.00

Sr.No.	Specification	Unit	No.	L	B	H	Quantity
	Light house hill road						
	7 mtr high pole	Nos.	63	8			504.00
	KMC Markkra Trunk Road						
	7 mtr road	Nos.	50	8			400.00
	Bunder Road						
	4mtr road	Nos.	50	8			400.00
	Mohmad Ali Road						
	7 mtr high pole	Nos.	8	8			64.00
						Total	1952
3.4	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)						
	Pandeshwar road						
	7 mtr high pole	Nos.	21	6			126.00
	Rosario road						
	7m high pole	Nos.	42	6			252.00
	4mtr high pole	Nos.	10	6			60.00
	Light house hill road						
	7 mtr high pole	Nos.	63	6			378.00
	KMC Markkra Trunk Road						
	7 mtr road	Nos.	50	6			300.00
	Bunder Road						
	4mtr road	Nos.	50	6			300.00
	Mohmad Ali Road						
	7 mtr road	Nos.	8	6			48.00
						Total	1464
4.1	Chemical Earthing for grounding,conduits,IC cut outs and otherequipments on the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)						
	Pandeshwar road	Nos.	2	2			4.00
	Rosario road	Nos.	1	2			2.00
	Light house hill road	Nos.	4	2			8.00
	KMC Markkra Trunk Road	Nos.	1	2			2.00
	Bunder road	Nos.	9	2			18.00
	Mohmad Ali Road	Nos.	1	2			2.00
						Total	36
4.2	Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)						
a	Rosario Road (Consider 10% more length for looping) - 895 meters	m	2	985			1969.00
b	Pandeshwar Road (Double Arm) (Consider 10% more length for looping)	m	2	352			704.00
c	Bundar Road (Single Arm) (Consider 10% more length for looping)	m	2	1474			2948.00
d	Light House Road (Single Arm) (Consider 10% more length for looping)	m	2	935			1870.00
f	Mahmod Ali Road	m	2	100			200.00
						Total	7691

Assistant Engineer
MSCL Mangaluru

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

Name of the Work :- Mangalore Smart City
3.2.4 Rate Analysis of Electrical Lighting for DPR-3 Roads

Sr. No.	Description	Unit	Qty.	Rate	Amount	Reference
1.1	Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (CPWD RA- E & M 2016, item 12.42, pg 395))					
	Line man	day	0.33	486.2	160.45	PWD SOR 2018-19, LVIII, Sl. No 38
	Khasasi	day	2.66	466.2	1240.09	PWD SOR 2018-19, LXIV, Sl. No 148
	Total				1400.54	
	Contracto's profit @10%				140.05	
	Contractor's over head @ 10%				140.05	
				Total =	1680.64	
1.2	Erection of metallic pole of following length in cement concrete 1 :3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 6.5 meter and upto 8.0 meter Existing poles (CPWD RA- E & M 2016, item 11.3.2, pg 372))					
	LABOUR					
	Mason, Grade 2	day	0.33	456.2	150.55	PWD SOR 2018-19, LVI, Sl. No 13
	Lineman	day	0.33	486.2	160.45	PWD SOR 2018-19, LVIII, Sl. No 38
	Khasasi	day	3.33	466.2	1552.45	PWD SOR 2018-19, LXIV, Sl. No 148
	TOTAL				1863.45	
	Contracto's profit @10%				186.35	
	Contractor's over head @ 10%				186.35	
	TOTAL				2236.15	
	Excavation including refilling as required	cum	0.87	328.90	286.14	PWD SOR 2018-19, pg-6, Sl. No 2.3
	Cement concrete 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	cum	0.29	6279.9	1821.17	PWD SOR 2018-19, pg-13, Sl. No 4.1
				Total =	4057.32	
	say				4057	
1.3	Erection of metallic pole of following length in cement concrete 1 :3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 8 meter and upto 11 meter Existing poles (CPWD RA- E & M 2016, item 11.3.3, pg 373))					
	LABOUR					
	Mason, Grade 2	day	0.33	456.2	150.55	PWD SOR 2018-19, LVI, Sl. No 13
	Lineman	day	0.33	486.2	160.45	PWD SOR 2018-19, LVIII, Sl. No 38
	Khallasasi	day	3.66	466.2	1706.29	PWD SOR 2018-19, LXIV, Sl. No 148
	TOTAL				2017.29	
	Contracto's profit @10%				201.73	
	Contractor's over head @ 10%				201.73	
	TOTAL				2420.75	
	Excavation including refilling as required	cum	1.06	328.90	348.634	PWD SOR 2018-19, pg-6, Sl. No 2.3
	Cement concrete 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	cum	0.38	6279.9	2386.362	PWD SOR 2018-19, pg-13, Sl. No 4.1
	TOTAL				4807.112	
	say				4807	

Assistant Engineer
MSCL Mangaluru

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

Name of the Work :- Mangalore Smart City
3.2.3 Rate Analysis of Electrical Lighting for DPR-3 Roads

1	Lighting Poles			
1.1	Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (RA attached)			
	Basic Rate	Rate	1,681	Nos.
1.2	Erection of metallic pole of following length in cement concrete 1 :3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 6.5 meter and upto 8.0 meter Existing poles (RA attached)			
		Rate	4,057	Nos.
1.3	Erection of metallic pole of following length in cement concrete 1 :3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 8 meter and upto 11 meter Existing poles (RA attached)			
		Rate	4,807	Nos.
1.4	Lighting Pole, 9 m Fabrication, suppl and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)			
	Basic rate		17118	
		Rate	17,118	Nos.
1.5	Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)			
	Basic rate		12420	
		Rate	12420	Nos.

1.6	Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)			
	Basic rate		7398	
		Rate	7,398	Nos.
1.7	Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)			
	Basic rate		3540	
		Rate	3,540	Nos.
1.8	Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)			
	Basic rate		2400	
		Rate	2,400	Nos.
1.9	Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)			
	Basic rate		700	
		Rate	700	Nos.
1.1	Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-above 5.5 mtr to 7.5 mtr (Ref Electrical SOR SI No.16.28.2)			
	Basic rate		620	
		Rate	620	Nos.
2	Outdoor Box and Switch Gear			
2.1	Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets			
	Price list (Considering 30% discount , 18% GST & 10% profit)	Rate	11,783	Nos.
2.2	Supply and fixing of miniature circuit breaker on existiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN			
	Basic rate		1547	
		Rate	1,547	Nos.
3	LT Cable			

3.1	Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)			117	
	Basic rate			117	Rm
		Rate		117	Rm
3.2	Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)			81.6	
	Basic rate			81.6	
		Rate		81.60	Rm
3.3	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)			11.31	
	Basic rate			11.31	
		Rate		11.31	Nos.
3.4	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)			3.12	
	Basic rate			3.12	
		Rate		3.12	Nos.
4.1	Chemical Earthing for grounding,conduits,IC cut outs and otherequipments on the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)			5500	
	Basic rate			5500	
		Rate		5500.00	Kit
4.2	Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)			19.5	
	Basic rate			19.5	
		Rate		19.50	Rmt

Assistant Engineer
MSCL Mangaluru

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

Name of the Work :- Manglore Smart City

3.1 BOQ OF SOFTSCAPE

Sr.No.	Specifications	Unit	Quantity	Rate	Amount	Remarks
1.1	SOIL MIXES and Ground Preparation					
1.1.1	Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	170.99	140.00	23,939	
1.1.2	KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stacking complete as per specifications. MORTH Specification No. 308.2(KSRRB 18-19,Page No.150,SI.No.19.90)	Cum	84.23	224.40	18,900	
1.1.3	KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KSRRB 18-19,Page No.148,SI No.19.77)	Cum	255.23	113.30	28,918	
1.1.4	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	255.23	23.91	6,103	
1.1.5	Soil preparation of Lawn					
	KSRRB M300-3.Making lawns including ploughing and breaking of clod,removal of rubbish,dressing and supplying doobs grass roots and planting at 15 cm apart,including supplying and spreading of farm yard manure at rate of 0.18cum per 100 sqm complete as per specifications. MORTH Specification No.307 (KSRRB 18-19,Pg No. 148, SI No. 19.80)	Sqm	206.44	17.60	3,633	
1.2	TURF					
1.2.1	ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	382.19	156.80	59,927	

Sr.No.	Specifications	Unit	Quantity	Rate	Amount	Remarks
1.2	IRRIGATION					
1.2.1	supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	382.19	560.00	214,024	
Total					3,55,444	

SOR Base Item Total= 51,451

GST @ 12 % = 6,174.00

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

**Name of the Work :- Manglore Smart City
3.2 Measurement Sheet of softscape**

Sr.No.	Item	Unit	No.	L	B	H	Qty.
1.1	SOIL MIXES and Ground Preparation						
1.1.1	Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)						
	Island at Ch.350.0	Cum	0.67	66.50	Area	0.60	26.73
	Island at Ch.380.0	Cum	0.67	34.46	Area	0.60	13.85
	Pandeshwar Road Extended Median						
	Ch.147.00 to Ch.183.00	Cum	0.67	36.00	0.60	0.60	8.68
	Ch.187.0 to Ch.190.00	Cum	0.67	36.00	0.60	0.60	8.68
	Median Ch.380.0 to 530.0	Cum	0.67	150.00	0.60	0.60	36.18
	KMC Merkera Road Median	Cum	0.67	112.00	Area	0.60	45.02
	Roundabout	Cum	0.67	8.16	2.60	0.60	8.53
	Ch.150	Cum	0.67	29.00	2.00	0.60	23.32
	Consider 2/3rd Qty of Item No.1.1.7	Cum					170.99
1.1.2	KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(KSRRB 18-19,Page No.150,SI.No.19.90)						
	Island at Ch.350.0	Cum	0.33	66.5	Area	0.6	13.17
	Island at Ch.380.0	Cum	0.33	34.46	Area	0.6	6.82
	Pandeshwar Road Extended Median						
	Ch.147.00 to Ch.183.00	Cum	0.33	36	0.6	0.6	4.28
	Ch.187.0 to Ch.190.00	Cum	0.33	36	0.6	0.6	4.28
	Median Ch.380.0 to 530.0	Cum	0.33	150	0.6	0.6	17.82
	KMC Merkera Road Median	Cum	0.33	112	Area	0.6	22.18
	Roundabout	Cum	0.33	8.164	2.6	0.6	4.20
	Ch.150	Cum	0.33	29	2	0.6	11.48
	Consider 1/3rd Qty of Item No.1.1.7	Cum					84.23
1.1.3	KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KSRRB 18-19,Page No.148,SI No.19.77)						
	Island at Ch.350.0	Cum	1	66.5	Area	0.6	39.90
	Island at Ch.380.0	Cum	1	34.46	Area	0.6	20.68
	Pandeshwar Road Extended Median						
	Ch.147.00 to Ch.183.00	Cum	1	36	0.6	0.6	12.96

Sr.No.	Item	Unit	No.	L	B	H	Qty.
	Ch.187.0 to Ch.190.00	Cum	1	36	0.6	0.6	12.96
	Median Ch.380.0 to 530.0	Cum	1	150	0.6	0.6	54.00
	KMC Merkera Road Median	Cum	1	112	Area	0.6	67.20
	Roundabout	Cum	1	8.164	2.6	0.6	12.74
	Ch.150	Cum	1	29	2	0.6	34.80
						Total	255.23
1.1.4	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)						
	Consider Same Qty. of 1.1.7	Cum					255.23
1.1.5	Soil preparation of Lawn						
	KSRRB M300-3.Making lawns including ploughing and breaking of clod,removal of rubbish,dressing and supplying doobs grass roots and planting at 15 cm apart,including supplying and spreading of farm yard manure at rate of 0.18cum per 100 sqm complete as per specifications. MORTH Specification No.307 (KSRRB 18-19,Pg No. 148, SI No. 19.80)						
	In rows 5 cm apart in both directions						
	Ch.350.0	Sqm	2	66.50		0.15	19.95
	Ch.380.0	Sqm	2	34.46		0.15	10.34
	Pandeshwar Road Extended Median						
	Ch.147.00 to Ch.183.00	Sqm	2	36		0.6	43.20
	Ch.187.0 to Ch.190.00	Sqm	2	36		0.6	43.20
	Median Ch.380.0 to 530.0	Sqm	2	150.00		0.15	45.00
	KMC Merkera Road Median	Sqm	2	112.00		0.15	33.60
	Roundabout	Sqm	2	8.16		0.15	2.45
	Ch.150	Sqm	2	29.00		0.15	8.70
						Total	206.44
1.1.6	ZOYSIA JAPONICA (MAT) (Non SOR Item)						
	Island at Ch.350.0	Sqm	1	66.5	Area		66.50
	Island at Ch.380.0	Sqm	1	34.46	Area		34.46
	Median Ch.380.0 to 530.0	Sqm	1	150	0.6		90.00
	KMC Merkera Road Median	Sqm	1	112	Area		112.00
	Roundabout	Sqm	1	8.164	2.6		21.23
	Ch.150	Sqm	1	29	2		58.00
						Total	382.19

Sr.No.	Item	Unit	No.	L	B	H	Qty.
1.2	IRRIGATION						
1.2.1	supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Consider Same Qty. of 1.1.6) (Non SOR Item)						
	Island at Ch.350.0	Sqm	1	66.5	Area		66.50
	Island at Ch.380.0	Sqm	1	34.46	Area		34.46
	Median Ch.380.0 to 530.0	Sqm	1	150	0.6		90.00
	KMC Merkera Road Median	Sqm	1	112	Area		112.00
	Roundabout	Sqm	1	8.164	2.6		21.23
	Ch.150	Sqm	1	29	2		58.00
						Total	382.19

**Assistant Engineer
MSCL Mangaluru**

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City
3.3 Rate Analysis of SOFTSCAPE**

RATE ANALYSIS - SOFTSCAPE

1.1.1	Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.27	Rate	140.00	Cum
1.1.2	KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(KSRRB 18-19,Page No.150,SI.No.19.90)			
	Basic rate		204	
	Add 10% For area weightage		20.4	
		Rate	224.40	Cum
1.1.3	KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KSRRB 18-19,Page No.148,SI No.19.77)			
	Basic rate		103	
	Add 10% For area wightage		10.3	
		Rate	113.30	Cum
1.1.4	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.28	Rate	23.91	Cum
1.1.5	KSRRB M300-3.Making lawns including ploughing and breaking of clod,removal of rubbish,dressing and supplying doobs grass roots and planting at 15 cm apart,including supplying and spreading of farm yard manure at rate of 0.18cum per 100 sqm complete as per specifications. MORTH Specification No.307 (KSRRB 18-19,Pg No. 148, SI No. 19.80)			
	Basic rate		16	
	Add 10% For area wightage		1.6	
		Rate	17.60	Sqm

1.2	TURF			
1.2.1	ZOYSIA JAPONICA (MAT) (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.32	Rate	156.80	Sqm
1.2	IRRIGATION			
1.2.1	supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.34	Rate	560.00	Sqm

**Assistant Engineer
MSCL Mangaluru**

**Executive Engineer
MSCL Mangaluru**

**General Manager
Technical
MSCL Mangaluru**

Mangalore Smart City

4.0 Rate Analysis for Kerb Stone 900 mm High

Sr.No.	Description	Unit	Qty	Rate/Unit	Amount	Remarks
1	Providing and laying at or near ground level factory made kerb stone of M-20 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).					
	Kerb Dimension= Top Width=0.25m, Bottom Width=0.3 m, Height =0.9 m Details of cost 100 metre i.e. No. of kerb stones = 100/0.405=247 Nos. width of kerb stone =0.4m Precast C.C. Kerb stone M - 20 = $247 \times (((0.25+0.3)/2) \times 0.6 + 0.3 \times 0.3) \times 0.405 = 25.5 \text{ cum}$					
	Material					
	Precast C.C. Kerb stone M - 20	Cum	25.500	14381.53	366729.05	Rate attached
	Shuttering Work					
	Mortar 1:3 for fixing joints = 246x1x [[((0.250+0.30)/2)*0.60*0.005] (0.30x0.30x0.005) = 0.313cum. + Cement mortar 1:3 (1 cement : 3 coarse sand)	Cum	0.300	5666.00	1699.80	KSRB 18-19,SI No 1.3 Pg No 2
	Mason (brick layer) 1st class	day	2.500	466.20	1165.50	KSRB 18-19 Pg No LVI
	Mason (brick layer) 2nd class	day	2.500	456.20	1140.50	
	Beldar	day	2.500	446.20	1115.50	
	Coolie	day	1.650	446.20	736.23	
	Total				372586.58	
	Add 1 % Water charges				3725.87	
					376312.45	
	Add 10 % Contractor's profit				37631.24	
	Add 10% Contractor Overhead				37631.24	
	Cost of 25.5 cum				451574.93	
	cost for 1 cum.				17708.82	A
	Cost per Kerb of width 0.405m =A X 0.102cum (Vol of one Kerb)				1806	Per No

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

Name of the Work :- Mangalore Smart City
5.0 Rate Analysis of Pre Cast RCC Square Cover

Sr. No.	DESCRIPTION	Unit	No.	Qty	Rate	Amount
1	Rectangular shape 600x450 mm precast R.C.C. manhole cover with frame(CPWD 2016,Material rate-7130,Pg.No.35)	Nos.	1.00		700.00	700
	Transportation @ 1%	Nos.	1.00			7
	Fixing Charges @10%	Nos.	1.00			70
	Contractor Profit@10%	Nos.	1.00			70
	Contractor Overhead @10%	Nos.	1.00			70
	Sub Total					917
	Total					917

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

Name of the Work :- Mangalore Smart City

5.1 Rate Analysis of Dry Lean Concrete - Footpath

	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	Dry Lean Cement Concrete Sub- base					
	KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site, Manually laid and compacting with palte compactor ,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)					
	Unit = cum					
	Taking output = 450 cum (990 tonne)					
	a) Labour					
	Mate	day	1.120	466.20	522.14	SI.No.12,Pa ge No.LVI,
	Mazdoor skilled	day	6.000	446.20	2677.20	SI.No.6,Pag e No.LVI,
	Mazdoor	day	22.000	446.20	9816.40	SI.No.6,Pag e No.LVI,
	b) Machinery					
	Front end loader 1 cum bucket capacity	hour	6.000	593.00	3558.00	SI.No.26,Pa ge No.XLIX
	Cement concrete batch mix plant @ 75 cum per hour	hour	6.000	1525.00	9150.00	SI.No.104,P age No.LII
	Electric generator 100 KVA	hour	6.000	534.00	3204.00	SI.No.92,Pa ge No.LI
	Plate Vibrator Having 3 Ton compaction Force	Day	1.000	254.00	254.00	SI.No.65,Pa ge No.L
	Water tanker 6 KL capacity	hour	8.000	550.00	4400.00	
	Tipper	tonne .km	990 x L	4.00	39600.00	
	Add 10 per cent of cost of carriage to cover cost of loading and unloading				3960.00	
	c) Material					
	Crushed stone coarse aggregate of 25 mm and 12.5 mm nominal sizes graded as per table 600-1 @ 0.90 cum/cum of concrete conforming to clause 602.2.4.	cum	405.000	1460.00	591300.00	Page No.II,SI.No.2 7
	Coarse Sand as per IS: 383 @ 0.45 cum/cum of concrete	cum	203.000	1700.00	345100.00	Page No.II,SI.No.5 1
	Cement @ 160 kg/cum of concrete	tonne	72.000	4906.00	353232.00	Page No.V,SI.No.1 23

	Description	Unit	Quantity	Rate Rs	Cost Rs	Remarks/ Input ref.
	Cost of water	KL	48.000	40.00	1920.00	Page No.XXIX,Sl. No.745
	d) Overhead charges @ 10 % on (a+b+c)				136869.37	
	e) Contractor's profit @ 10 % on (a+b+c+d)				150556.31	
	Cost for 450 cum = a+b+c+d+e				1656119.43	
	Rate per cum = (a+b+c+d+e)/450				3680.27	
				say	<u>3680.00</u>	
Note	Quantity provided for aggregate is for estimating purpose. Exact quantity shall be as per mix design.					

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City

6.0 Rate Analysis of taking out paver block

Sr.No.	Description	Unit	Quantity	Rate	Amount	Reference
1	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.					
	Details of cost for 10 sqm.					
a	Labour					
b	Beldar	Day	0.25	446.20	111.55	KPWD 18-19 SOR, Pg No.LVI SI No.5
c	Collie	Day	1	446.20	446.2	KPWD18-19 SOR, Pg No.LVI,SI No.6
d	Sundries	LS	2.7	1.73	4.67	CPWD Pg No 29,
	Total				562.42	
e	Add 1% Water Charges				5.62	
	Total				568.04	
f	Add 10 % Contractor's profit				56.8	
g	Add 10 % Contractor's overheads				56.804	
	Cost of 10 sqm				681.644	
	Cost of 1 sqm				68.16	

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City

7.0 Comparitive Statement For Power Ducts

1	Providing and laying Dia 225mm HDPE Electrical pipe Conduits with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years.	Dura Line	Aadarsha	Utkarsha
	Basic Cost per RM	2500	2250	2875
	GST 18%	---	405	---
	Total Cost per RM	2500	2655	2875

2	Providing and HDPE Coupler for pipe Dia 225mm(O.D.) and conveying to work site including loading and unloading at both destination and lowering, Jointing into trenches, Complete.	Dura Line	Aadarsha (Including in pipe cost)	Utkarsha (Not Quoted)
	Basic Cost per Nos.	1175	0	0
	GST 18%	---	0	---
	Total Cost per Nos.	1175	0	0

3	Providing and laying Dia 160mm HDPE Electrical pipe Conduits with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years.	Dura Line	Aadarsha	Utkarsha
	Basic Cost per RM	1350	1135	1550
	GST 18%	---	204.3	---
	Total Cost per RM	1350	1339.3	1550

4	Supplying HDPE pipe Coupler for Dia 160mm(O.D.) and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe and special including encasing the pipe Complete.	Dura Line	Aadarsha (Including in pipe cost)	Utkarsha (Not Quoted)
	Basic Cost per Nos.	1475	0	0
	GST 18%	---	0	---
	Total Cost per Nos.	1475	0	0

5	Providing and Fixing Spacers for Power Ducts of size 225 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material.-2Rows in One Column	Dura Line	Aadarsha (Not Quoted)	Utkarsha
	Basic Cost per Nos.	1003	0	1150
	GST 18%	---	0	---
	Total Cost per Nos.	1003	0	1150

6	Providing and Fixing Spacers for Power Ducts of size 160 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material.-4 Rows in One Column	Dura Line	Aadarsha (Not Quoted)	Utkarsha
	Basic Cost per Nos.	1947	0	2150
	GST 18%	---	0	---
	Total Cost per Nos.	1947	0	2150

7	Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent indian standard and conveying to work site including loading and unloading at both destination and rolling,lowering into trenches,laying true to line and jointing of pipe etc.Complete.	Dura Line	Aadarsha	Utkarsha
	Basic Cost per Nos.	685	745	750
	GST 18%	---	134.1	---
	Total Cost per Nos.	685	879.1	750

8	Supplying Coupler for 7-way 40mmHDPE pipe With Multi-way Duct and conveying to work site including loading and unloading at both destination and lowering into trenches, and jointing of pipe.Complete.	Dura Line	Aadarsha	Utkarsha
	Basic Cost per Nos.	175	0	0
	GST 18%	---	0	---
	Total Cost per Nos.	175	0	0

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

8.0 Summary for Maintenance		
Sr.No.	description	Total Amount Rs.
1	2nd year Maintenance	3,720,646.00
2	3rd year Maintenance	3,863,378.00
3	4th year Maintenance	5,124,290.00
	Total Maintenance Amount	12,708,314.00
	GST @12% for Maintenance Period on SOR Base Items	1,212,260.00
	GST @18% for Maintenance Period on Market Base Items	230,869.00
	Total	14,151,443.00

Note:Maintenance cost is approved by KUIDFC

**EXECUTIVE ENGINEER
MSCL MANGALURU**

**GENERAL MANAGER TECHNICAL
MSCL MANGALURU**

Name of the Work :- Mangalore Smart City
8.1.0 Abstract for Maintenance of Road and Other Work for DPR 3-1st Year

Sr. No.	Specification	Unit	Total Qty.	Rate	Amount
Civil Works					
1.00	Maintenance for 1st Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	80.00	77.98	6,238
2.00	Maintenance for 1st Year: KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)	Cum	3.68	1028.46	3,785
3.00	Maintenance for 1st Year: KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)	Rmt	25.00	13.73	343
4.00	Maintenance for 1st Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)	Cum	10.00	446.16	4,462
5.00	Maintenance for 1st Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)	Cum	0.35	401.54	141
6.00	Maintenance for 1st Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)	Cum	137.50	46.90	6,449
7.00	Maintenance for 1st Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)	Cum	137.50	137.28	18,876
8.00	Maintenance for 1st Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)	Sqm	200.00	6.86	1,372

Sr. No.	Specification	Unit	Total Qty.	Rate	Amount
9.00	Maintenance for 1st Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills , including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	5.00	6749.60	33,748
10.00	Maintenance for 1st Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI . (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	150.00	2477.90	3,71,685
11.00	Maintenance for 1st Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters conforming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)	Cum	36.00	7090.51	2,55,258
12.00	Maintenance for 1st Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)	Sqm	360.00	300.87	108,313
13.00	Maintenance for 1st Year: KSRB 4.9.2 : Providing T.M.T steel reinforcement for RCC work including straightening,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500	MT	2.88	80974.61	2,33,207
14.00	Maintenance for 1st Year: KSRRB M300- Construction of Subgrade . KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305	Cum	36.75	643.19	23,637
15.00	Maintenance for 1st Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate conforming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)	Cum	7.35	4630.91	34,037

Sr. No.	Specification	Unit	Total Qty.	Rate	Amount
16.00	<p>Maintenance for 1st Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>	Cum	8.00	4209.92	33,679
17.00	<p>Maintenance for 1st Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts confirming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuos operation including provision of contraction, expansio, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealent primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)</p>	Cum	16.91	6595.16	1,11,524
18.00	<p>Maintenance for 1st Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)</p>	Rmt	50.00	119.60	5,980
19.00	<p>Maintenance for 1st Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)</p>	Rmt	50.00	378.66	18,933
20.00	<p>Maintenance for 1st Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)</p>	Cum	1.55	18417.17	28,547
21.00	<p>Maintenance for 1st Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	1.95	481.62	,939
22.00	<p>Maintenance for 1st Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	0.83	481.62	,400

Sr. No.	Specification	Unit	Total Qty.	Rate	Amount
23.00	Maintenance for 1st Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	m	100.00	112.11	11,211
24.00	Maintenance for 1st Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)	Sqm	11.55	91.52	1057
25.00	Maintenance for 1st Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)	Nos.	3.00	953.68	2,861
26.00	Maintenance for 1st Year: Providing and Fixing Recessed Inception chamber cover - size: (600 x 450)mm Material	Nos.	10.00	3640.00	36,400
27.00	Maintenance for 1st Year: Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7,KUWSDB SOR 2016-17)	Rmt	10.00	314.52	3,145
28.00	Maintenance for 1st Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia , of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16,P.No.86, SI.No.12.89)	Nos.	10.00	949.52	9,495
29.00	Maintenance for 1st Year: KSRRB M800-29.3.Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case-III :Triple row for three utility services. (PWD SR 2015-16,SI.No.24.36)	Rmt	4.00	5745.17	22,981
30.00	Maintenance for 1st Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	150.00	2052.29	3,07,844
31.00	Maintenance for 1st Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years.(Market Rate)	Rmt	200.00	1113.03	2,22,606
32.00	Maintenance for 1st Year: Providing and Fixing Spacers for Power Ducts of size 225 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	20.00	1043.12	20,862
33.00	Maintenance for 1st Year: Providing and Fixing Spacers for Power Ducts of size 160 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	20.00	2024.88	40,498

Sr. No.	Specification	Unit	Total Qty.	Rate	Amount
34.00	Maintenance for 1st Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)	Rmt	40.00	754.33	30,173
35.00	Maintenance for 1st Year: Providing and laying heavy duty cobble stones 60mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.6)	Sqm	80.00	1208.06	96,645
36.00	Maintenance for 1st Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)	Sqm	1.50	948.48	1,423
37.00	Maintenance for 1st Year: Providing and laying heavy duty cobble stones 75mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.7)	Sqm	30.00	1274.42	38,233
38.00	Maintenance for 1st Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)	Cum	12.00	8967.82	107,614
39.00	Maintenance for 1st Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 -using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen	Cum	3.20	10022.58	32,072
40.00	Maintenance for 1st Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications	Nos.	10.00	330.62	3,306

Sr. No.	Specification	Unit	Total Qty.	Rate	Amount
41.00	Maintenance for 1st Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)	Sqm	30.00	490.78	,14,723
42.00	Maintenance for 1st Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.	Nos	5.00	63648.00	3,18,240
43.00	Maintenance for 1st Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	1.00	4680.00	4,680
44.00	Maintenance for 1st Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	0.30	104000.00	31,200
45.00	Maintenance for 1st Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Cum	943.74	186.16	175,687
46.00	Maintenance for 1st Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Earth	Cum	58.53	94.49	5,530
47.00	Maintenance for 1st Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Debris	Cum	9.38	94.95	,891
	Electrical Works				
48.00	Maintenance for 1st Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))	Nos.	1.00	1747.87	1,748
49.00	Maintenance for 1st Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended	Nos.	0.00	17802.72	,0
50.00	Maintenance for 1st Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	1.00	12916.80	12,917

Sr. No.	Specification	Unit	Total Qty.	Rate	Amount
51.00	Maintenance for 1st Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	1.00	7693.92	7,694
52.00	Maintenance for 1st Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	1.00	3681.60	3,682
53.00	Maintenance for 1st Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	1.00	2496.00	2,496
54.00	Maintenance for 1st Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	184.00	644.80	118,643
55.00	Maintenance for 1st Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	Nos.	1.00	12254.24	12,254
56.00	Maintenance for 1st Year: Supply and fixing of miniature circuit breaker on existing board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	Nos.	1.00	1608.88	1,609
	LT Cable				
57.00	Maintenance for 1st Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)	m	60.00	121.68	7,301
58.00	Maintenance for 1st Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	10.00	84.86	849
59.00	Maintenance for 1st Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)	Nos	10.00	11.76	118
60.00	Maintenance for 1st Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	8.00	3.24	26
	Earthing system				

Sr. No.	Specification	Unit	Total Qty.	Rate	Amount
61.00	Maintenance for 1st Year: Chemical Earthing for grounding, conduits, IC cut outs and other equipments on the meter board by using copper /SS rod with earth enhancing backfill compound which is non corrosive, thermally, conductive, potential, to permissible, limits, superior, fault, conductive capacity, non toxic, weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64, SI No.7.23.6)	Kit	1.00	5720.00	5,720
62.00	Maintenance for 1st Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	50.00	20.28	1014
	Landscaping Works				
	SOIL MIXES and Ground Preparation				
63.00	Maintenance for 1st Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	0.84	145.60	122
64.00	Maintenance for 1st Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stacking complete as per specifications. MORTH Specification No. 308.2 (Page No.152, SI.No.19.90)	Cum	0.41	233.38	96
65.00	Maintenance for 1st Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17, Page No.150, SI No.19.77)	Cum	0.40	117.83	47
66.00	Maintenance for 1st Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	0.40	24.87	10
	Soil preparation of Lawn				
67.00	Maintenance for 2nd Year: Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc complete including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Sqm	382.19	117.83	45,033
	TURF				
68.00	Maintenance for 1st Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	3.00	163.07	,489
	IRRIGATION				
69.00	Maintenance for 1st Year: Watering with tanker to landscape area and plants for one year	Year	1.00	31085.11	31,085
70.00	Maintenance for 1st Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees, sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	3.00	582.40	1,747
				Total	30,95,630

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

**Name of the Work :- Mangalore Smart City
8.1.1 M.S. For Maintenance of Road and Other Work for DPR 3-1st Year**

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
Civil Works							
1.00	Maintenance for 1st Year: Taking out existing CC interlocking paver blocks from footpath/central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	1	40	2		80.00
2.00	Maintenance for 1st Year: KSRRB M200. Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)	Cum	1	3.5	3.5	0.3	3.68
3.00	Maintenance for 1st Year: KSRRB M200- Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)	Rmt	1	25			25.00
4.00	Maintenance for 1st Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)	Cum	1	20	1	0.5	10.00
5.00	Maintenance for 1st Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)	Cum	1	3	0.5	0.23	0.35
6.00	Maintenance for 1st Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)	Cum	1.00	55	5	0.5	137.50
7.00	Maintenance for 1st Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)	Cum	1.00	55	5	0.5	137.50
8.00	Maintenance for 1st Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)	Sqm	1.00	40		5	200.00
9.00	Maintenance for 1st Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills , ncluding cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	1.00	10	5	0.1	5.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
10.00	Maintenance for 1st Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	1.00	200	5	0.15	150.00
11.00	Maintenance for 1st Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters confirming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnspillers, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)	Cum	1.00	200	0.2	0.9	36.00
12.00	Maintenance for 1st Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)	Sqm	2.00	200		0.9	360.00
13.00	Maintenance for 1st Year: KSRB 4.9.2 : Providing T.M.T steel reinforcement for RCC work including straightening,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500	MT	1.00	2.88			2.88
14.00	Maintenance for 1st Year: KSRRB M300- Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murrum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305	Cum	6.00	3.5	3.5	0.5	36.75
15.00	Maintenance for 1st Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)	Cum	6.00	3.5	3.5	0.1	7.35
16.00	Maintenance for 1st Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site, Manually laid and compacting with palte compactor ,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)	Cum	1.00	40	2	0.1	8.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
17.00	<p>Maintenance for 1st Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts conforming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuous operation including provision of contraction, expansio, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealnt primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)</p>	Cum	6.00	3.5	3.5	0.23	16.91
18.00	<p>Maintenance for 1st Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)</p>	Rmt	1.00	50			50.00
19.00	<p>Maintenance for 1st Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)</p>	Rmt	1.00	50			50.00
20.00	<p>Maintenance for 1st Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)</p>	Cum	1	15	0.103		1.55
21.00	<p>Maintenance for 1st Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	1	70	0.0279		1.95
22.00	<p>Maintenance for 1st Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	1	70	0.0118		0.83
23.00	<p>Maintenance for 1st Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HCM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.</p>	Rmt	100				100.00
24.00	<p>Maintenance for 1st Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)</p>	Sqm	1	70	0.165		11.55
25.00	<p>Maintenance for 1st Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)</p>	Nos.	3.00				3.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
26.00	Maintenance for 1st Year: Providing and Fixing Recessed Inception chamber cover - size: (600 x 450)mm Material	Nos.	10.00				10.00
27.00	Maintenance for 1st Year: Providing gully pipe lowering, laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line. The rate shall include all jointing materials, testing apparatus and water for testing etc as directed by the Engineer in charge (page No.41, Item No.7, KUWSDB SOR 2016-17)	Rmt	1.00	10.00			10.00
28.00	Maintenance for 1st Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia , of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16,P.No.86, SI.No.12.89)	Nos.	1.00	10			10.00
29.00	Maintenance for 1st Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia , across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17, Item No.24.34, Pg.No.188)	Rmt	1	4.00			4.00
30.00	Maintenance for 1st Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	1	150			150.00
31.00	Maintenance for 1st Year: Providing and HDPE Coupler for pipe Dia 225mm(O.D.) and conveying to work site including loading and unloading at both destination and lowering, Jointing into trenches, Complete. (Market Rate)	Nos.	10				10.00
32.00	Maintenance for 1st Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	1	200			200.00
33.00	Maintenance for 1st Year: Providing and Fixing Spacers for Power Ducts of size 225 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	20				20.00
34.00	Maintenance for 1st Year: Providing and Fixing Spacers for Power Ducts of size 160 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	20				20.00
35.00	Maintenance for 1st Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)	Rmt	1	40			40.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
36.00	<p>Maintenance for 1st Year: Providing and laying heavy duty cobble stones 60mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.6)</p>	Sqm	1	40	2		80.00
37.00	<p>Maintenance for 1st Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)</p>	Sqm	1.00	5	0.3		1.50
38.00	<p>Maintenance for 1st Year: Providing and laying heavy duty cobble stones 75mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.7)</p>	Sqm	1.00	20	1.5		30.00
39.00	<p>Maintenance for 1st Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)</p>	Cum	4.00	2.5	8	0.15	12.00
40.00	<p>Maintenance for 1st Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen</p>	Cum	4.00	2.5	8	0.04	3.20
41.00	<p>Maintenance for 1st Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications</p>	Nos.	10.00				10.00
42.00	<p>Maintenance for 1st Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)</p>	Sqm	1.00	200	0.15		30.00
43.00	<p>Maintenance for 1st Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.</p>	Nos	5.00				5.00
44.00	<p>Maintenance for 1st Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)</p>	Nos.	1.00				1.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
45.00	Maintenance for 1st Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	1.00	0.3			0.30
46.00	Maintenance for 1st Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Cum	2.00	6741	0.7	0.1	943.74
47.00	Maintenance for 1st Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Earth	Cum	1.00	58.53			58.53
48.00	Maintenance for 1st Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Debris	Cum	1.00	9.38			9.38
Electrical Works							
49.00	Maintenance for 1st Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))	Nos.	1				1.00
50.00	Maintenance for 1st Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)	Nos.					0.00
51.00	Maintenance for 1st Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	1				1.00
52.00	Maintenance for 1st Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	1				1.00
53.00	Maintenance for 1st Year: Supplying and fixing of hot dip Galvinized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	1				1.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
54.00	Maintenance for 1st Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	1				1.00
55.00	Maintenance for 1st Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.- 8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	184.00				184.00
56.00	Maintenance for 1st Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	Nos.	1.00				1.00
57.00	Maintenance for 1st Year: Supply and fixing of miniature circuit breaker on exisiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	Nos.	1.00				1.00
LT Cable							
58.00	Maintenance for 1st Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)	m	1	60.00			60.00
59.00	Maintenance for 1st Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	1	10.00			10.00
60.00	Maintenance for 1st Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)	Nos	10				10.00
61.00	Maintenance for 1st Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	8				8.00
Earthing system							
62.00	Maintenance for 1st Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipmentson the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)	Kit	1				1.00
63.00	Maintenance for 1st Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	1	50			50.00
Landcaping Works							
SOIL MIXES and Ground Preparation							
64.00	Maintenance for 1st Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	1	10	0.558	0.15	0.84
65.00	Maintenance for 1st Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)	Cum	1	10	0.412	0.1	0.41

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
66.00	Maintenance for 1st Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)	Cum	1	10	0.404	0.1	0.40
67.00	Maintenance for 1st Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	1	10	0.404	0.1	0.40
Soil preparation of Lawn							
68.00	Maintenance for 2nd Year: Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc complete including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Sqm	1.00	382.19			382.19
TURF							
69.00	Maintenance for 1st Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	1	5	0.6		3.00
IRRIGATION							
70.00	Maintenance for 1st Year: Watering with tanker to landscape area and plants for one year						
71.00	Maintenance for 1st Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	1	5	0.6		3.00

Assistant Engineer
MSCL Mangaluru

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

Name of the Work :- Mangalore Smart City
8.1.2 R.A. For Maintenance of 1st Year- DPR 3

1	Maintenance for 1st Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)				
	Basic rate			68.16	
	Maintenance -1st year escalation of 4%			2.73	
	Add 10% For area weightage (Mangalore City)			7.09	
		Rate		77.98	Sqm
2	Maintenance for 1st Year: KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)				
	Basic rate			899	
	Maintenance -1st year escalation of 4%			35.96	
	Add 10% For area weightage (Mangalore City)			93.5	
		Rate		1028.46	Cum
3	Maintenance for 1st Year: KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)				
	Basic rate			12.00	
	Maintenance -1st year escalation of 4%			0.48	
	Add 10% For area weightage (Mangalore City)			1.25	
		Rate		13.73	Rmt
4	Maintenance for 1st Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)				
	Basic rate			390	
	Maintenance -1st year escalation of 4%			15.6	
	Add 10% For area weightage (Mangalore City)			40.56	
		Rate		446.16	Cum
5	Maintenance for 1st Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)				
	Basic rate			351	
	Maintenance -1st year escalation of 4%			14.04	
	Add 10% For area weightage			36.5	
		Rate		401.54	Cum

6	<p>Maintenance for 1st Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)</p>			41	
	Basic rate			1.64	
	Maintenance -1st year escalation of 4%			4.26	
	Add 10% For area weightage (Mangalore City)				
			Rate	46.90	Cum
7	<p>Maintenance for 1st Year: KSRRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)</p>			120	
	Basic rate			4.8	
	Maintenance -1st year escalation of 4%			12.48	
	Add 10% For area weightage (Mangalore City)				
			Rate	137.28	Cum
8	<p>Maintenance for 1st Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)</p>			6	
	Basic rate			0.24	
	Maintenance -1st year escalation of 4%			0.62	
	Add 10% For area weightage (Mangalore City)				
			Rate	6.86	Sqm
9	<p>Maintenance for 1st Year: KSRRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, ncluding cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>			5900	
	Basic Rate			236	
	Maintenance -1st year escalation of 4%			613.6	
	Add 10% For area weightage (Mangalore City)				
			Rate	6749.60	Cum
10	<p>Maintenance for 1st Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>			2166	
	Basic Rate			86.64	
	Maintenance -1st year escalation of 4%			225.26	
	Add 10% For area weightage (Mangalore City)				
			Rate	2477.90	Cum
11	<p>Maintenance for 1st Year: KSRRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters conforming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)</p>			6198	
	Basic Rate				

	Maintenance -1st year escalation of 4%		247.92	
	Add 10% For area weightage (Mangalore City)		644.59	
		Rate	7090.51	Cum
12	Maintenance for 1st Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)			
	Basic Rate		263	
	Maintenance -1st year escalation of 4%		10.52	
	Add 10% For area weightage (Mangalore City)		27.35	
		Rate	300.87	Sqm
13	Maintenance for 1st Year: KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straightening,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500			
	Basic Rate		70782	
	Maintenance -1st year escalation of 4%		2831.28	
	Add 10% For area weightage (Mangalore City)		7361.33	
		Rate	80974.61	MT
14	Maintenance for 1st Year: KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305			
	Basic Rate		513	
	Maintenance -1st year escalation of 4%		20.52	
	Add 20km lead (17.4 KSRRB M100-4.1-Cost of haulage excluding loading and unloading MORTH-100/Chapter 1-case 1-Surface Road)=2.5 Rs/ Tkm x 1.28 T x 20km		51.2	
	Sub Total		584.72	
	Add 10% For area weightage (Mangalore City)		58.47	
		Rate	643.19	Cum
15	Maintenance for 1st Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)			
	Basic Rate		4048	
	Maintenance -1st year escalation of 4%		161.92	
	Add 10% For area weightage (Mangalore City)		420.99	
		Rate	4630.91	Cum

16	<p>Maintenance for 1st Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>				
	Basic Rate			3680	
	Maintenance -1st year escalation of 4%			147.2	
	Add 10% For area weightage (Mangalore City)			382.72	
			Rate	4209.92	Cum
17	<p>Maintenance for 1st Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts confirming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuos operation including provision of contraction, expansio, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealent primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)</p>				
	Basic Rate			5765	
	Maintenance -1st year escalation of 4%			230.6	
	Add 10% For area weightage (Mangalore City)			599.56	
			Rate	6595.16	Cum
18	<p>Maintenance for 1st Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)</p>				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.2			115	
	Maintenance -1st year escalation of 4%			4.6	
			Rate	119.6	Rmt
19	<p>Maintenance for 1st Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)</p>				
	Basic Rate			331	
	Maintenance -1st year escalation of 4%			13.24	
	Add 10% For area weightage (Mangalore City)			34.42	
			Rate	378.66	Rmt
20	<p>Maintenance for 1st Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)</p>				
	Rate Arrived as per Rate analysis				

	Basic Rate		17708.82	
	Maintenance -1st year escalation of 4%		708.35	
		Rate	18417.17	Cum
21	Maintenance for 1st Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)			
	Basic rate		421	
	Maintenance -1st year escalation of 4%		16.84	
	Add 10% For area weightage		43.78	
		Rate	481.62	Cum
22	Maintenance for 1st Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)			
	Basic rate		421	
	Maintenance -1st year escalation of 4%		16.84	
	Add 10% For area weightage		43.78	
		Rate	481.62	Cum
23	Maintenance for 1st Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic rate		98	
	Maintenance -1st year escalation of 4%		3.92	
	Add 10% For area weightage		10.19	
		Rate	112.11	Rm
24	Maintenance for 1st Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)			
	Basic Rate		80	
	Maintenance -1st year escalation of 4%		3.2	
	Add 10% For area weightage (Mangalore City)		8.32	
		Rate	91.52	Sqm
25	Maintenance for 1st Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)			
	Rate Arrived as per Rate analysis			
	Basic Rate		917	
	Maintenance -1st year escalation of 4%		36.68	
		Rate	953.68	Nos.
26	Maintenance for 1st Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.15		3500.00	
	Maintenance -1st year escalation of 4%		140	
		Rate	3640.00	Nos.

27	Maintenance for 1st Year: Providing gully pipe lowering, laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line. The rate shall include all jointing materials, testing apparatus and water for testing etc as directed by the Engineer in charge (page No.41, Item No.7, KUWSDB SOR 2016-17)			
	Basic Rate		297	
	Maintenance -1st year escalation of 4%		11.88	
	Add 12% on Labor Charges=Rs.47, For area weightage (Mangalore City)		5.64	
		Rate	314.52	Rm
28	Maintenance for 1st Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia, of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16, P.No.86, SI.No.12.89)			
	Basic Rate		830	
	Maintenance -1st year escalation of 4%		33.2	
	Add 10% For area weightage (Mangalore City)		86.32	
		Rate	949.52	Nos.
29	Maintenance for 1st Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17, Item No.24.34, Pg.No.188)			
	Basic Rate		5022	
	Maintenance -1st year escalation of 4%		200.88	
	Add 10% For area weightage (Mangalore City)		522.29	
		Rate	5745.17	Rm
30	Maintenance for 1st Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)			
	Basic Rate		2300	
	Deduct GST @18%		-414	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		78	
	Add 12% For area weightage (Mangalore City)		9.36	
	Sub Total		1973.36	
	Maintenance -1st year escalation of 4%		78.93	
		Rate	2052.29	Rm
31	Maintenance for 1st Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)			
	Basic Rate		1215	
	Deduct GST @18%		-218.7	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		66	

	Add 12% For area weightage (Mangalore City)		7.92	
	Sub Total		1070.22	
	Maintenance -1st year escalation of 4%		42.81	
		Rate	1113.03	Rm
32	Maintenance for 1st Year: Providing and Fixing Spacers for Power Ducts of size 225 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)			
	Basic Rate		1003	
	Maintenance -1st year escalation of 4%		40.12	
		Rate	1043.12	Nos.
33	Maintenance for 1st Year: Providing and Fixing Spacers for Power Ducts of size 160 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)			
	Basic Rate		1947	
	Maintenance -1st year escalation of 4%		77.88	
		Rate	2024.88	Nos.
34	Maintenance for 1st Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)			
	Basic Rate		685	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		36	
	Add 12% For area weightage (Mangalore City)		4.32	
	Sub Total		725.32	
	Maintenance -1st year escalation of 4%		29.01	
		Rate	754.33	Rm
35	Maintenance for 1st Year: Providing and laying heavy duty cobble stones 60mm thick, using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.6)			
	Basic rate		1056.00	
	Maintenance -1st year escalation of 4%		42.24	
	Add 10% For area weightage (Mangalore City)		109.82	
		Rate	1208.06	Sqm
36	Maintenance for 1st Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and coarse sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore, Refer Sr.No.12		912.00	
	Maintenance -1st year escalation of 4%		36.48	
		Rate	948.48	Sqm

37	<p>Maintenance for 1st Year: Providing and laying heavy duty cobble stones 75mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.7)</p>				
	Basic rate			1114	
	Maintenance -1st year escalation of 4%			44.56	
	Add 10% For area weightage (Mangalore City)			115.86	
			Rate	1274.42	Sqm
38	<p>Maintenance for 1st Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)</p>				
	Basic rate			7839	
	Maintenance -1st year escalation of 4%			313.56	
	Add 10% For area weightage (Mangalore City)			815.26	
			Rate	8967.82	Cum
39	<p>Maintenance for 1st Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen</p>				
	Basic rate			8761	
	Maintenance -1st year escalation of 4%			350.44	
	Add 10% For area weightage (Mangalore City)			911.14	
			Rate	10022.58	Cum
40	<p>Maintenance for 1st Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications</p>				
	Basic rate			289	
	Maintenance -1st year escalation of 4%			11.56	
	Add 10% For area weightage (Mangalore City)			30.06	
			Rate	330.62	Nos.
41	<p>Maintenance for 1st Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)</p>				
	Basic Rate			429	
	Maintenance -1st year escalation of 4%			17.16	
	Add 10% For area weightage (Mangalore City)			44.62	
			Rate	490.78	Sqm
42	<p>Maintenance for 1st Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.</p>				

	Baisc rate		61200	
	Maintenance -1st year escalation of 4%		2448	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.1	Rate	63648	Nos.
43	Maintenance for 1st Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.13		4500.00	
	Maintenance -1st year escalation of 4%		180	
		Rate	4680	Nos.
44	Maintenance for 1st Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.26		100000.00	
	Maintenance -1st year escalation of 4%		4000	
		Rate	104000	MT
45	Maintenance for 1st Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic Rate		179.00	
	Maintenance -1st year escalation of 4%		7.16	
		Rate	186.16	Nos.
46	Maintenance for 1st Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Earth			
	Earth	2.0x1.28x10km		
	Baisc rate		25.60	
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00	
	Sub Total-1		82.60	
	Add 10% For area weightage (Mangalore City)		8.26	
	Sub Total-2		90.86	
	Maintenance -1st year escalation of 4%		3.63	
		Rate	94.49	Cum
47	Maintenance for 1st Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Debris			
	Debris	2.0x1.30x10Km		
	Baisc rate		26.00	
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00	
	Sub Total-1		83.00	
	Add 10% For area weightage (Mangalore City)		8.3	
	Sub Total-2		91.30	
	Maintenance -1st year escalation of 4%		3.65	
		Rate	94.95	Cum
	Lighting Poles			
48	Maintenance for 1st Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))			

	Basic Rate		1,681	
	Maintenance -1st year escalation of 4%		67.23	
		Rate	1747.87	Nos.
49	Maintenance for 1st Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)			
	Basic rate		17118	
	Maintenance -1st year escalation of 4%		684.72	
		Rate	17,802.72	Nos.
50	Maintenance for 1st Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)			
	Basic rate		12420	
	Maintenance -1st year escalation of 4%		496.8	
		Rate	12,916.80	Nos.
51	Maintenance for 1st Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)			
	Basic rate		7398	
	Maintenance -1st year escalation of 4%		295.92	
		Rate	7,693.92	Nos.
52	Maintenance for 1st Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)			
	Basic rate		3540	
	Maintenance -1st year escalation of 4%		141.6	
		Rate	3,681.60	Nos.
53	Maintenance for 1st Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)			
	Basic rate		2400	
	Maintenance -1st year escalation of 4%		96	
		Rate	2,496	Nos.
54	Maintenance for 1st Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)			

	Basic rate		620	
	Maintenance -1st year escalation of 4%		24.8	
		Rate	645	Nos.
	Outdoor Box and Switch Gear			
55	Maintenance for 1st Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets			
	Price list (Considering 30% discount , 18% GST & 10% profit)		11782.92	
	Maintenance -1st year escalation of 4%		471.32	
		Rate	12,254	Nos.
56	Maintenance for 1st Year: Supply and fixing of miniature circuit breaker on exisiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)			
	Basic rate		1547	
	Maintenance -1st year escalation of 4%		61.88	
		Rate	1,609	Nos.
	LT Cable			
57	Maintenance for 1st Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)			
	Basic rate		117	
	Maintenance -1st year escalation of 4%		4.68	
		Rate	121.68	Rm
58	Maintenance for 1st Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)			
	Basic rate		81.6	
	Maintenance -1st year escalation of 4%		3.26	
		Rate	84.86	Rm
59	Maintenance for 1st Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)			
	Basic rate		11.31	
	Maintenance -1st year escalation of 4%		0.45	
		Rate	11.76	Nos.
60	Maintenance for 1st Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)			
	Basic rate		3.12	
	Maintenance -1st year escalation of 4%		0.12	
		Rate	3.24	Nos.
61	Maintenance for 1st Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipments on the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)			

	Basic rate		5500	
	Maintenance -1st year escalation of 4%		220	
		Rate	5720	Kit
62	Maintenance for 1st Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)			
	Basic rate		19.5	
	Maintenance -1st year escalation of 4%		0.78	
		Rate	20.28	Rmt
63	Maintenance for 1st Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.27		140.00	
	Maintenance -1st year escalation of 4%		5.6	
		Rate	145.60	Cum
64	Maintenance for 1st Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)			
	Basic rate		204	
	Maintenance -1st year escalation of 4%		8.16	
	Add 10% For area weightage		21.22	
		Rate	233.38	Cum
65	Maintenance for 1st Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)			
	Basic rate		103	
	Maintenance -1st year escalation of 4%		4.12	
	Add 10% For area wightage		10.71	
		Rate	117.83	Cum
66	Maintenance for 1st Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.28		23.91	
	Maintenance -1st year escalation of 4%		0.96	
		Rate	24.87	Cum
67	Maintenance for 1st Year: Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc complete including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic rate		103	
	Maintenance -1st year escalation of 4%		4.12	
	Add 10% For area wightage		10.71	
		Rate	117.83	Sqm
	TURF			
68	Maintenance for 1st Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)			

	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.32		156.80	
	Maintenance -1st year escalation of 4%		6.27	
		Rate	163.07	Sqm
	IRRIGATION			
69	Maintenance for 1st Year: Watering with tanker to landscape area and plants for one year			
	Water Tanker =52 Rs/ Hour,One Year Cost=92 days x 3 hrs x 61rs/hr (365days-90 days of mansoon=275 days/3 days=92 days,consider watering at every 3 days)		16836	
	Mazdoor = 0.5 days x 446.20		11908.48	
	Add 10% For area wightage		1190.848	
	Maintenance -1st year escalation of 4%		1149.78	
		Rate	31085.11	Sqm
70	Maintenance for 1st Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.34		560.00	
	Maintenance -1st year escalation of 4%		22.4	
		Rate	582.40	Sqm

**Assistant Engineer
MSCL Mangaluru**

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City
8.2.0 Abstract for Maintenance of Road and Other Work for DPR 3-2nd Year

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
Civil Works					
1.00	Maintenance for 2nd Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	80.00	80.97	6,478
2.00	Maintenance for 2nd Year: KSRRB M200. Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications. MORTH specification No.202.(Including transporting charges, loading and unloading for lead 5km-Extra) (Page No 138, SI No : 18.47)	Cum	3.68	1068.01	3,930
3.00	Maintenance for 2nd Year: KSRRB M200- Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications. MORTH Specification No.202. (Page No.139, S.I.No.18.49)	Rmt	25.00	14.26	357
4.00	Maintenance for 2nd Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 & M-20. MORTH Specification No. 202 (KPWD SOR 16-17, 18.20, Page No.137)	Cum	10.00	463.32	4,633
5.00	Maintenance for 2nd Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i) Dismantling Brick/Tile work B. In Cement mortar (Page No 137, SI No : 18.23)	Cum	0.35	416.99	146
6.00	Maintenance for 2nd Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines and grades and cross sections, and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143, SI No : 19.14)	Cum	137.50	48.71	6,698
7.00	Maintenance for 2nd Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17, SI No.2.11, Pg. No.6)	Cum	137.50	142.56	19,602
8.00	Maintenance for 2nd Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17, SI No.19.64, Pg. No.149)	Sqm	200.00	7.13	1,426
9.00	Maintenance for 2nd Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills , including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	5.00	7009.20	35,046

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
10.00	<p>Maintenance for 2nd Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>	Cum	18.38	2573.21	,47,296
11.00	<p>Maintenance for 2nd Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters conforming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)</p>	Cum	54.00	7363.22	3,97,614
12.00	<p>Maintenance for 2nd Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)</p>	Sqm	540.00	312.44	1,68,718
13.00	<p>Maintenance for 2nd Year: KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500</p>	MT	4.32	84089.02	3,63,265
14.00	<p>Maintenance for 2nd Year: KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murrum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305</p>	Cum	61.25	665.76	,40,778
15.00	<p>Maintenance for 2nd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)</p>	Cum	12.25	4809.02	,58,910
16.00	<p>Maintenance for 2nd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>	Cum	17.00	4371.84	,74,321

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
17.00	<p>Maintenance for 2nd Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplasticizer at 3 lts conforming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints,including groove cutting charges, joints filler,separation membrane, sealant primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per specifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)</p>	Cum	30.63	6848.82	2,09,779
18.00	<p>Maintenance for 2nd Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)</p>	Rmt	500.00	124.20	,62,100
19.00	<p>Maintenance for 2nd Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)</p>	Rmt	500.00	393.23	1,96,615
20.00	<p>Maintenance for 2nd Year: Providing and laying at or near ground level factory made kerb stone of M-20 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 be 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). (RA Attached)</p>	Cum	1.55	19125.53	,29,645
21.00	<p>Maintenance for 2nd Year: Providing and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	1.95	500.15	,,975
22.00	<p>Maintenance for 2nd Year: Providing and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	0.83	500.15	,,415
23.00	<p>Maintenance for 2nd Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.</p>	Rmt	100.00	116.42	11,642
24.00	<p>Maintenance for 2nd Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)</p>	Sqm	980.00	95.04	,93,139
25.00	<p>Maintenance for 2nd Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)</p>	Nos.	10.00	990.36	9,904

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
26.00	Maintenance for 2nd Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)	Nos.	10.00	3780.00	,37,800
27.00	Maintenance for 2nd Year: Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7,KUWSDB SOR 2016-17)	Rmt	20.00	326.40	6,528
28.00	Maintenance for 2nd Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia , of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16,P.No.86, Sl.No.12.89)	Nos.	10.00	986.04	9,860
29.00	Maintenance for 2nd Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia , across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17,Item No.24.34,Pg.No.188)	Rmt	10.00	5966.14	59,661
30.00	Maintenance for 2nd Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil presuure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	50.00	2131.23	1,06,562
31.00	Maintenance for 2nd Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil presuure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years.(Market Rate)	Rmt	50.00	1155.84	,57,792
32.00	Maintenance for 2nd Year: Providing and Fixixng Spacers for Power Ducts of size 225 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34.00	1083.24	36,830
33.00	Maintenance for 2nd Year: Providing and Fixixng Spacers for Power Ducts of size 160 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34.00	2102.76	71,494
34.00	Maintenance for 2nd Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent indian standard and conveying to work site including loading and unloading at both destination and rolling,lowering into trenches,laying true to line and jointing of pipe etc.Complete. (Market Rate)	Rmt	10.00	783.35	7,834

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
35.00	Maintenance for 2nd Year: Providing and laying heavy duty cobble stones 60mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.6)	Sqm	170.00	1254.53	2,13,270
36.00	Maintenance for 2nd Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)	Sqm	27.00	984.96	26,594
37.00	Maintenance for 2nd Year: Providing and laying heavy duty cobble stones 75mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.7)	Sqm	300.00	1323.43	3,97,029
38.00	Maintenance for 2nd Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)	Cum	6.00	9312.73	55,876
39.00	Maintenance for 2nd Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen	Cum	3.20	10408.07	33,306
40.00	Maintenance for 2nd Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications	Nos.	50.00	343.33	17,167
41.00	Maintenance for 2nd Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)	Sqm	25.50	509.65	12,996
42.00	Maintenance for 1st Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.	Nos	2.00	66096.00	1,32,192

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
43.00	Maintenance for 2nd Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	1.00	4860.00	4,860
44.00	Maintenance for 2nd Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	0.30	108000.00	32,400
45.00	Maintenance for 2nd Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Cum	943.74	193.32	1,82,444
46.00	Maintenance for 2nd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Earth	Cum	58.53	98.13	5,744
47.00	Maintenance for 2nd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Debris	Cum	9.38	98.60	,925
	Electrical Works				
48.00	Maintenance for 2nd Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))	Nos.	1.00	1398.60	1,399
49.00	Maintenance for 2nd Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)	Nos.	0.00	18487.44	,0
50.00	Maintenance for 2nd Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	1.00	13413.60	13,414
51.00	Maintenance for 2nd Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	1.00	7989.84	7,990

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
52.00	Maintenance for 2nd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	1.00	3823.20	3,823
53.00	Maintenance for 2nd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	1.00	2592.00	2,592
54.00	Maintenance for 2nd Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	184.00	669.60	1,23,206
55.00	Maintenance for 2nd Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	Nos.	1.00	12725.55	12,726
56.00	Maintenance for 2nd Year: Supply and fixing of miniature circuit breaker on exisiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required conforming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	Nos.	1.00	1670.76	1,671
LT Cable					
57.00	Maintenance for 2nd Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)	m	600.00	126.36	75,816
58.00	Maintenance for 2nd Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	100.00	88.13	8,813
59.00	Maintenance for 2nd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)	Nos	45.00	12.21	549
60.00	Maintenance for 2nd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	40.00	3.37	135
Earthing system					
61.00	Maintenance for 2nd Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipmentson the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)	Kit	1.00	5940.00	5,940
62.00	Maintenance for 2nd Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	500.00	21.06	10,530
Landcaping Works					
SOIL MIXES and Ground Preparation					

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
63.00	Maintenance for 2nd Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	9.00	151.20	1,361
64.00	Maintenance for 2nd Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)	Cum	18.00	242.35	4,362
65.00	Maintenance for 2nd Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)	Cum	18.00	122.36	2,202
66.00	Maintenance for 2nd Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	1.20	25.82	31
	Soil preparation of Lawn				
67.00	Maintenance for 2nd Year: Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc complete including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Sqm	382.19	122.36	46,765
	TURF				
68.00	Maintenance for 2nd Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	3.00	169.34	508
	IRRIGATION				
69.00	Maintenance for 2nd Year: Watering with tanker to landscape area and plants for one year	Year	1.00	42402.62	42,403
70.00	Maintenance for 2nd Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	3.00	604.80	1,814
				Total	,37,20,646

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City
8.2.1 M.S. For Maintenance of Road and Other Work for DPR 3-2nd Year**

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
Civil Works							
1.00	Maintenance for 2nd Year: Taking out existing CC interlocking paver blocks from footpath/central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	1	40	2		80.00
2.00	Maintenance for 2nd Year: KSRRB M200. Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)	Cum	1	3.5	3.5	0.3	3.68
3.00	Maintenance for 2nd Year: KSRRB M200- Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)	Rmt	1	25			25.00
4.00	Maintenance for 2nd Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)	Cum	1	20	1	0.5	10.00
5.00	Maintenance for 2nd Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)	Cum	1	3	0.5	0.23	0.35
6.00	Maintenance for 2nd Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tipper,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)	Cum	1.00	55	5	0.5	137.50
7.00	Maintenance for 2nd Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)	Cum	1.00	55	5	0.5	137.50
8.00	Maintenance for 2nd Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)	Sqm	1.00	40		5	200.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
9.00	Maintenance for 2nd Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills , including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	1.00	10	5	0.1	5.00
10.00	Maintenance for 2nd Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	10.00	3.5	3.5	0.15	18.38
11.00	Maintenance for 2nd Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters confirming to IS 9103-1999 reaffirmed - 2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)	Cum	1.00	300	0.2	0.9	54.00
12.00	Maintenance for 2nd Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)	Sqm	2.00	300		0.9	540.00
13.00	Maintenance for 2nd Year: KSRB 4.9.2 : Providing T.M.T steel reinforcement for RCC work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500	MT	1.00	4.32			4.32
14.00	Maintenance for 2nd Year: KSRRB M300- Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305	Cum	10.00	3.5	3.5	0.5	61.25
15.00	Maintenance for 2nd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)	Cum	10.00	3.5	3.5	0.1	12.25

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
16.00	<p>Maintenance for 2nd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>	Cum	1.00	85	2	0.1	17.00
17.00	<p>Maintenance for 2nd Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts confirming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form or paver spread,compacted and finished in a continuous operation including provision of contraction, expansio, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealent primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)</p>	Cum	10.00	3.5	3.5	0.25	30.63
18.00	<p>Maintenance for 2nd Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)</p>	Rmt	1.00	500			500.00
19.00	<p>Maintenance for 2nd Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)</p>	Rmt	1.00	500			500.00
20.00	<p>Maintenance for 2nd Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)</p>	Cum	1	15	0.103		1.55
21.00	<p>Maintenance for 2nd Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	1	70	0.0279		1.95
22.00	<p>Maintenance for 2nd Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	1	70	0.0118		0.83

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
23.00	Maintenance for 2nd Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Rmt	100				100.00
24.00	Maintenance for 2nd Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)	Sqm	1	3500		0.28	980.00
25.00	Maintenance for 2nd Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)	Nos.	10.00				10.00
26.00	Maintenance for 2nd Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)	Nos.	10.00				10.00
27.00	Maintenance for 2nd Year: Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7,KUWSDB SOR 2016-17)	Rmt	1.00	20.00			20.00
28.00	Maintenance for 2nd Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia , of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16,P.No.86, SI.No.12.89)	Nos.	1.00	10			10.00
29.00	Maintenance for 2nd Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia , across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17,Item No.24.34,Pg.No.188)	Rmt	1	10.00			10.00
30.00	Maintenance for 2nd Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil presuure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	1	50			50.00
31.00	Maintenance for 2nd Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil presuure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	1	50			50.00
32.00	Maintenance for 2nd Year: Providing and Fixing Spacers for Power Ducts of size 225 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34				34.00
33.00	Maintenance for 2nd Year: Providing and Fixing Spacers for Power Ducts of size 160 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34				34.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
34.00	Maintenance for 2nd Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)	Rmt	1	10			10.00
35.00	Maintenance for 2nd Year: Providing and laying heavy duty cobble stones 60mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.6)	Sqm	1	85	2		170.00
36.00	Maintenance for 2nd Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles- 300 x 300 mm) 60mm thick and Yellow in colour, using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)	Sqm	1.00	90	0.3		27.00
37.00	Maintenance for 2nd Year: Providing and laying heavy duty cobble stones 75mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.7)	Sqm	1.00	200	1.5		300.00
38.00	Maintenance for 2nd Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen (KPWD 16-17, S.I.No.21.17.1, Page	Cum	2.00	8	2.5	0.15	6.00
39.00	Maintenance for 2nd Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen	Cum	4.00	2.5	8	0.04	3.20
40.00	Maintenance for 2nd Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lens reflectors, 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 BS: 873 part 4:1973 complete as per specifications	Nos.	50.00				50.00
41.00	Maintenance for 2nd Year: Road Marking with hot applied Thermoplastic Compound with Reflecting Glass Beads on Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streak and holes complete as per specifications. MORTH specification No.803 (Page No 192, SI No : 24.57)	Sqm	1.00	170	0.15		25.50

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
42.00	Maintenance for 2nd Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.	Nos	2.00				2.00
43.00	Maintenance for 2nd Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	1.00				1.00
44.00	Maintenance for 2nd Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	1.00	0.3			0.30
45.00	Maintenance for 2nd Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Cum	2.00	6741	0.7	0.1	943.74
46.00	Maintenance for 2nd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Earth	Cum	1.00	58.53			58.53
47.00	Maintenance for 2nd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Debris	Cum	1.00	9.38			9.38
Electrical Works							
48.00	Maintenance for 2nd Year: Dismantling, removal, transportation to client's storage place existing lighting poles (Non SOR Item)	Nos.	1				1.00
49.00	Maintenance for 2nd Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)	Nos.					0.00
50.00	Maintenance for 2nd Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	1				1.00
51.00	Maintenance for 2nd Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	1				1.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
52.00	Maintenance for 2nd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	1				1.00
53.00	Maintenance for 2nd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	1				1.00
54.00	Maintenance for 2nd Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole. 8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	184.00				184.00
55.00	Maintenance for 2nd Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	Nos.	1.00				1.00
56.00	Maintenance for 2nd Year: Supply and fixing of miniature circuit breaker on exisiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required conforming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	Nos.	1.00				1.00
	LT Cable						
57.00	Maintenance for 2nd Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)	m	1	600.00			600.00
58.00	Maintenance for 2nd Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	1	100.00			100.00
59.00	Maintenance for 2nd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)	Nos	45				45.00
60.00	Maintenance for 2nd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	40				40.00
	Earthing system						
61.00	Maintenance for 2nd Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipmentson the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)	Kit	1				1.00
62.00	Maintenance for 2nd Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	1	500			500.00
	Landcaping Works						
	SOIL MIXES and Ground Preparation						

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
63.00	Maintenance for 2nd Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	1	100	0.6	0.15	9.00
64.00	Maintenance for 2nd Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)	Cum	3	100	0.6	0.1	18.00
65.00	Maintenance for 2nd Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)	Cum	3	100	0.6	0.1	18.00
66.00	Maintenance for 2nd Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	3	100	0.04	0.1	1.20
Soil preparation of Lawn							
67.00	Maintenance for 2nd Year: Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc complete including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge	Sqm	1.00	382.19			382.19
TURF							
68.00	Maintenance for 2nd Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	1	5	0.6		3.00
IRRIGATION							
69.00	Maintenance for 2nd Year: Watering with tanker to landscape area and plants for one year	Year					1.00
70.00	Maintenance for 2nd Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	1	5	0.6		3.00

Assistant Engineer
MSCL Mangaluru

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

**Name of the Work :- Mangalore Smart City
8.2.2 R.A. For Maintenance of 2nd Year - DPR 3**

1	Maintenance for 2nd Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)			
	Basic rate		68.16	
	Maintenance- 2nd year escalation of 8%		5.45	
	Add 10% For area weightage (Mangalore City)		7.36	
		Rate	80.97	Sqm
2	Maintenance for 2nd Year: KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)			
	Basic rate		899	
	Maintenance- 2nd year escalation of 8%		71.92	
	Add 10% For area weightage (Mangalore City)		97.09	
		Rate	1068.01	Cum
3	Maintenance for 2nd Year: KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)			
	Basic rate		12.00	
	Maintenance- 2nd year escalation of 8%		0.96	
	Add 10% For area weightage (Mangalore City)		1.3	
		Rate	14.26	Rmt
4	Maintenance for 2nd Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 18-19,18.20,Page No.137)			
	Basic rate		390	
	Maintenance- 2nd year escalation of 8%		31.2	
	Add 10% For area weightage (Mangalore City)		42.12	
		Rate	463.32	Cum
5	Maintenance for 2nd Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)			
	Basic rate		351	
	Maintenance- 2nd year escalation of 8%		28.08	
	Add 10% For area weightage		37.91	
		Rate	416.99	Cum
6	Maintenance for 2nd Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)			

	Basic rate		41	
	Maintenance- 2nd year escalation of 8%		3.28	
	Add 10% For area weightage (Mangalore City)		4.43	
		Rate	48.71	Cum
7	Maintenance for 2nd Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 18-19,SI No.2.11,Pg. No.6)			
	Basic rate		120	
	Maintenance- 2nd year escalation of 8%		9.6	
	Add 10% For area weightage (Mangalore City)		12.96	
		Rate	142.56	Cum
8	Maintenance for 2nd Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 18-19,SI No.19.64,Pg. No.149)			
	Basic rate		6	
	Maintenance- 2nd year escalation of 8%		0.48	
	Add 10% For area weightage (Mangalore City)		0.65	
		Rate	7.13	Sqm
9	Maintenance for 2nd Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2018-19)			
	Basic Rate		5900	
	Maintenance- 2nd year escalation of 8%		472	
	Add 10% For area weightage (Mangalore City)		637.2	
		Rate	7009.20	Cum
10	Maintenance for 2nd Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2018-19)			
	Basic Rate		2166	
	Maintenance- 2nd year escalation of 8%		173.28	
	Add 10% For area weightage (Mangalore City)		233.93	
		Rate	2573.21	Cum
11	Maintenance for 2nd Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters conforming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)			
	Basic Rate		6198	
	Maintenance- 2nd year escalation of 8%		495.84	
	Add 10% For area weightage (Mangalore City)		669.38	
		Rate	7363.22	Cum

12	<p>Maintenance for 2nd Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)</p>			
	Basic Rate			263
	Maintenance- 2nd year escalation of 8%			21.04
	Add 10% For area weightage (Mangalore City)			28.4
		Rate	312.44	Sqm
13	<p>Maintenance for 2nd Year: KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500</p>			
	Basic Rate			70782
	Maintenance- 2nd year escalation of 8%			5662.56
	Add 10% For area weightage (Mangalore City)			7644.46
		Rate	84089.02	MT
14	<p>Maintenance for 2nd Year: KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305</p>			
	Basic Rate			513
	Maintenance- 2nd year escalation of 8%			41.04
	Add 20km lead (17.4 KSRRB M100-4.1-Cost of haulage excluding loading and unloading MORTH-100/Chapter 1-case 1-Surface Road)=2.0 Rs/ Tkm x 1.28 T x 20km			51.2
	Sub Total			605.24
	Add 10% For area weightage (Mangalore City)			60.52
		Rate	665.76	Cum
15	<p>Maintenance for 2nd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)</p>			
	Basic Rate			4048
	Maintenance- 2nd year escalation of 8%			323.84
	Add 10% For area weightage (Mangalore City)			437.18
		Rate	4809.02	Cum
16	<p>Maintenance for 2nd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>			
	Basic Rate			3680

	Maintenance- 2nd year escalation of 8%		294.4	
	Add 10% For area weightage (Mangalore City)		397.44	
		Rate	4371.84	Cum
17	Maintenance for 2nd Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplasticizer at 3 lts conforming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints,including groove cutting charges, joints filler,separation membrane, sealant primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per specifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)			
	Basic Rate		5765	
	Maintenance- 2nd year escalation of 8%		461.2	
	Add 10% For area weightage (Mangalore City)		622.62	
		Rate	6848.82	Cum
18	Maintenance for 2nd Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.2		115	
	Maintenance- 2nd year escalation of 8%		9.2	
		Rate	124.2	Rmt
19	Maintenance for 2nd Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1			
	Basic Rate		331	
	Maintenance- 2nd year escalation of 8%		26.48	
	Add 10% For area weightage (Mangalore City)		35.75	
		Rate	393.23	Rmt
20	Maintenance for 2nd Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)			
	Rate Arrived as per Rate analysis			
	Basic Rate		17708.82	
	Maintenance- 2nd year escalation of 8%		1416.71	
		Rate	19125.53	Cum
21	Maintenance for 2nd Year: Providing and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)			
	Basic rate		421	
	Maintenance- 2nd year escalation of 8%		33.68	
	Add 10% For area weightage		45.47	

		Rate	500.15	Cum
22	Maintenance for 2nd Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)			
	Basic rate		421	
	Maintenance- 2nd year escalation of 8%		33.68	
	Add 10% For area weightage		45.47	
		Rate	500.15	Cum
23	Maintenance for 2nd Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic rate		98	
	Maintenance- 2nd year escalation of 8%		7.84	
	Add 10% For area weightage		10.58	
		Rate	116.42	Nos.
24	Maintenance for 2nd Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)			
	Basic Rate		80	
	Maintenance- 2nd year escalation of 8%		6.4	
	Add 10% For area weightage (Mangalore City)		8.64	
		Rate	95.04	Sqm
25	Maintenance for 2nd Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)			
	Rate Arrived as per Rate analysis			
	Basic Rate		917	
	Maintenance- 2nd year escalation of 8%		73.36	
		Rate	990.36	Rmt
26	Maintenance for 2nd Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.15		3500.00	
	Maintenance- 2nd year escalation of 8%		280	
		Rate	3780.00	Nos.
27	Maintenance for 2nd Year: Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7,KUWSDB SOR 2016-17)			
	Basic Rate		297	
	Maintenance- 2nd year escalation of 8%		23.76	
	Add 12% on Labor Charges=Rs.47,For area weightage (Mangalore City)		5.64	
		Rate	326.4	Rm

28	Maintenance for 2nd Year: KSRRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia, of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2018-19,P.No.86, SI.No.12.89)			
	Basic Rate		830	
	Maintenance- 2nd year escalation of 8%		66.4	
	Add 10% For area weightage (Mangalore City)		89.64	
		Rate	986.04	Nos.
29	Maintenance for 2nd Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 18-19,Item No.24.34,Pg.No.188)			
	Basic Rate		5022	
	Maintenance- 2nd year escalation of 8%		401.76	
	Add 10% For area weightage (Mangalore City)		542.38	
		Rate	5966.14	Rm
30	Maintenance for 2nd Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)			
	Basic Rate		2300	
	Deduct GST @18%		-414	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		78	
	Add 12% For area weightage (Mangalore City)		9.36	
	Sub Total		1973.36	
	Maintenance- 2nd year escalation of 8%		157.87	
		Rate	2131.23	Rm
31	Maintenance for 2nd Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)			
	Basic Rate		1215	
	Deduct GST @18%		-218.7	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		66	
	Add 12% For area weightage (Mangalore City)		7.92	
	Sub Total		1070.22	
	Maintenance- 2nd year escalation of 8%		85.62	
		Rate	1155.84	Rm
32	Maintenance for 2nd Year: Providing and Fixing Spacers for Power Ducts of size 225 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)			
	Basic Rate		1003	
	Maintenance- 2nd year escalation of 8%		80.24	
		Rate	1083.24	Nos.

33	Maintenance for 2nd Year: Providing and Fixing Spacers for Power Ducts of size 160 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)		1947	
	Basic Rate			
	Maintenance- 2nd year escalation of 8%		155.76	
		Rate	2102.76	Nos.
34	Maintenance for 2nd Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)		685	
	Basic Rate			
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		36	
	Add 12% For area weightage (Mangalore City)		4.32	
	Sub Total		725.32	
	Maintenance- 2nd year escalation of 8%		58.03	
		Rate	783.35	Rm
35	Maintenance for 2nd Year: Providing and laying heavy duty cobble stones 60mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.6)		1056.00	
	Basic rate			
	Maintenance- 2nd year escalation of 8%		84.48	
	Add 10% For area weightage (Mangalore City)		114.05	
		Rate	1254.53	Sqm
36	Maintenance for 2nd Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)		912.00	
	Rate Approved as per EOI by MD MSCL Mangalore, Refer Sr.No.12			
	Maintenance- 2nd year escalation of 8%		72.96	
		Rate	984.96	Sqm
37	Maintenance for 2nd Year: Providing and laying heavy duty cobble stones 75mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.7)		1114	
	Basic rate			
	Maintenance- 2nd year escalation of 8%		89.12	
	Add 10% For area weightage (Mangalore City)		120.31	
		Rate	1323.43	Sqm

38	Maintenance for 2nd Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 18-19,S.I.No.21.17.1,Page No.163)			
	Basic rate		7839	
	Maintenance- 2nd year escalation of 8%		627.12	
	Add 10% For area weightage (Mangalore City)		846.61	
		Rate	9312.73	Cum
39	Maintenance for 2nd Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen			
	Basic rate		8761	
	Maintenance- 2nd year escalation of 8%		700.88	
	Add 10% For area weightage (Mangalore City)		946.19	
		Rate	10408.07	Cum
40	Maintenance for 2nd Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications			
	Basic rate		289	
	Maintenance- 2nd year escalation of 8%		23.12	
	Add 10% For area weightage (Mangalore City)		31.21	
		Rate	343.33	Nos.
41	Maintenance for 2nd Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)			
	Basic Rate		429	
	Maintenance- 2nd year escalation of 8%		34.32	
	Add 10% For area weightage (Mangalore City)		46.33	
		Rate	509.65	Sqm
42	Maintenance for 2nd Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.			
	Baisc rate		61200	
	Maintenance- 2nd year escalation of 8%		4896	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.1	Rate	66096	Nos.
43	Maintenance for 2nd Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.13		4500.00	
	Maintenance- 2nd year escalation of 8%		360	

		Rate	4860	Nos.
44	Maintenance for 2nd Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.26		100000.00	
	Maintenance- 2nd year escalation of 8%		8000	
		Rate	108000	MT
45	Maintenance for 2nd Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic Rate		179.00	
	Maintenance- 2nd year escalation of 8%		14.32	
		Rate	193.32	Nos.
46	Maintenance for 2nd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Earth			
	Earth	2.0x1.28x10km		
	Basic rate		25.60	
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00	
	Sub Total-1		82.60	
	Add 10% For area weightage (Mangalore City)		8.26	
	Sub Total-2		90.86	
	Maintenance- 2nd year escalation of 8%		7.27	
		Rate	98.13	Cum
47	Maintenance for 2nd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Debris			
	Debris	2.0x1.30x10Km		
	Basic rate		26.00	
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00	
	Sub Total-1		83.00	
	Add 10% For area weightage (Mangalore City)		8.3	
	Sub Total-2		91.30	
	Maintenance- 2nd year escalation of 8%		7.3	
		Rate	98.60	Cum
48	Lighting Poles Maintenance for 2nd Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))			
	Basic Rate		1,295	
	Maintenance- 2nd year escalation of 8%		103.6	
		Rate	1398.6	Nos.

49	<p>Maintenance for 2nd Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)</p>			17118	
	Basic rate			17118	
	Maintenance- 2nd year escalation of 8%			1369.44	
			Rate	18,487.44	Nos.
50	<p>Maintenance for 2nd Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)</p>			12420	
	Basic rate			12420	
	Maintenance- 2nd year escalation of 8%			993.6	
			Rate	13,413.60	Nos.
51	<p>Maintenance for 2nd Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)</p>			7398	
	Basic rate			7398	
	Maintenance- 2nd year escalation of 8%			591.84	
			Rate	7,989.84	Nos.
52	<p>Maintenance for 2nd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)</p>			3540	
	Basic rate			3540	
	Maintenance- 2nd year escalation of 8%			283.2	
			Rate	3,823.20	Nos.
53	<p>Maintenance for 2nd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)</p>			2400	
	Basic rate			2400	
	Maintenance- 2nd year escalation of 8%			192	
			Rate	2,592	Nos.
54	<p>Maintenance for 2nd Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)</p>			620	
	Basic rate			620	
	Maintenance- 2nd year escalation of 8%			49.6	
			Rate	670	Nos.
	Outdoor Box and Switch Gear				

55	Maintenance for 2nd Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets		11782.92	
	Price list (Considering 30% discount , 18% GST & 10% profit)			
	Maintenance- 2nd year escalation of 8%		942.63	
		Rate	12,726	Nos.
56	Maintenance for 2nd Year: Supply and fixing of miniature circuit breaker on exisiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)			
	Basic rate		1547	
	Maintenance- 2nd year escalation of 8%		123.76	
		Rate	1,671	Nos.
	LT Cable			
57	Maintenance for 2nd Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)			
	Basic rate		117	
	Maintenance- 2nd year escalation of 8%		9.36	
		Rate	126.36	Rm
58	Maintenance for 2nd Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)			
	Basic rate		81.6	
	Maintenance- 2nd year escalation of 8%		6.53	
		Rate	88.13	Rm
59	Maintenance for 2nd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)			
	Basic rate		11.31	
	Maintenance- 2nd year escalation of 8%		0.9	
		Rate	12.21	Nos.
60	Maintenance for 2nd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)			
	Basic rate		3.12	
	Maintenance- 2nd year escalation of 8%		0.25	
		Rate	3.37	Nos.
61	Maintenance for 2nd Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipmentson the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)			
	Basic rate		5500	
	Maintenance- 2nd year escalation of 8%		440	
		Rate	5940	Kit

62	Maintenance for 2nd Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)			
	Basic rate		19.5	
	Maintenance- 2nd year escalation of 8%		1.56	
		Rate	21.06	Rmt
63	Maintenance for 2nd Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.27		140.00	
	Maintenance- 2nd year escalation of 8%		11.2	
		Rate	151.20	Cum
64	Maintenance for 2nd Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stacking complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)			
	Basic rate		204	
	Maintenance- 2nd year escalation of 8%		16.32	
	Add 10% For area weightage		22.03	
		Rate	242.35	Cum
65	Maintenance for 2nd Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 18-19,Page No.150,SI No.19.77)			
	Basic rate		103	
	Maintenance- 2nd year escalation of 8%		8.24	
	Add 10% For area wightage		11.12	
		Rate	122.36	Cum
66	Maintenance for 2nd Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.28		23.91	
	Maintenance- 2nd year escalation of 8%		1.91	
		Rate	25.82	Cum
67	Maintenance for 2nd Year: Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc complete including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic rate		103	
	Maintenance- 2nd year escalation of 8%		8.24	
	Add 10% For area wightage		11.12	
		Rate	122.36	Sqm
	TURF			
68	Maintenance for 2nd Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.32		156.80	
	Maintenance- 2nd year escalation of 8%		12.54	
		Rate	169.34	Sqm

IRRIGATION			
69	Maintenance for 2nd Year: Watering with tanker to landscape area and plants for one year		
	Water Tanker =52 Rs/ Hour,One Year Cost=92 days x 3 hrs x 61rs/hr (365days-90 days of mansoon=275 days/3 days=92 days,consider watering at every 3 days)		16836
	Mazdoor = 0.5 days x 446.20		20525.2
	Add 10% For area wightage		2052.52
	Maintenance- 2nd year escalation of 8%		2988.9
		Rate	42402.62 Year
70	Maintenance for 2nd Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)		
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.34		560.00
	Maintenance- 2nd year escalation of 8%		44.8
		Rate	604.80 Sqm

**Assistant Engineer
MSCL Mangaluru**

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City
8.3.0 Abstract for Maintenance of Road and Other Work for DPR 3 - 3rd Year

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
Civil Works					
1.00	Maintenance for 3rd Year: Taking out existing CC interlocking paver blocks from footpath/central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	80.00	83.97	6,718
2.00	Maintenance for 3rd Year: KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)	Cum	3.68	1107.57	4,076
3.00	Maintenance for 3rd Year: KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)	Rmt	25.00	14.78	370
4.00	Maintenance for 3rd Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)	Cum	10.00	480.48	4,805
5.00	Maintenance for 3rd Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)	Cum	0.35	432.43	151
6.00	Maintenance for 3rd Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)	Cum	137.50	50.51	6,945
7.00	Maintenance for 3rd Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)	Cum	137.50	147.84	20,328
8.00	Maintenance for 3rd Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)	Sqm	200.00	7.39	1,478
9.00	Maintenance for 3rd Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills , ncluding cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	5.00	7268.80	36,344

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
10.00	Maintenance for 3rd Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	18.38	2668.51	,49,047
11.00	Maintenance for 3rd Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters confirming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnspillers, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)	Cum	54.00	7635.94	4,12,341
12.00	Maintenance for 3rd Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)	Sqm	540.00	324.02	1,74,971
13.00	Maintenance for 3rd Year: KSRB 4.9.2 : Providing T.M.T steel reinforcement for RCC work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KSB4.6.3. do with TMT bars Fe500	MT	4.32	87203.42	3,76,719
14.00	Maintenance for 3rd Year: KSRRB M300- Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murrum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305	Cum	61.25	688.34	,42,161
15.00	Maintenance for 3rd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)	Cum	12.25	4987.14	,61,092
16.00	Maintenance for 3rd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site, Manually laid and compacting with palte compactor ,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)	Cum	17.00	4533.76	,77,074

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
17.00	Maintenance for 3rd Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed, plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts confirming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuous operation including provision of contraction, expansio, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealent primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)	Cum	30.63	7102.48	2,17,549
18.00	Maintenance for 3rd Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)	Rmt	500.00	128.80	,64,400
19.00	Maintenance for 3rd Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)	Rmt	500.00	407.79	2,03,895
20.00	Maintenance for 3rd Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)	Cum	1.55	19833.88	,30,743
21.00	Maintenance for 3rd Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)	Cum	1.95	518.67	,1,011
22.00	Maintenance for 3rd Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)	Cum	0.83	518.67	,,430
23.00	Maintenance for 3rd Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Rmt	100.00	120.74	12,074
24.00	Maintenance for 3rd Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)	Sqm	980.00	98.56	,96,589
25.00	Maintenance for 3rd Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)	Nos.	10.00	1027.04	10,270

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
26.00	Maintenance for 3rd Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)	Nos.	10.00	3920.00	,39,200
27.00	Maintenance for 3rd Year: Providing gully pipe lowering, laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line. The rate shall include all jointing materials, testing apparatus and water for testing etc as directed by the Engineer in charge (page No.41, Item No.7, KUWSDB SOR 2016-17)	Rmt	20.00	338.28	6,766
28.00	Maintenance for 3rd Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia , of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16, P.No.86, Sl.No.12.89)	Nos.	10.00	1022.56	10,226
29.00	Maintenance for 3rd Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia , across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17, Item No.24.34, Pg.No.188)	Rmt	10.00	6187.10	61,871
30.00	Maintenance for 3rd Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	50.00	2210.16	1,10,508
31.00	Maintenance for 3rd Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	50.00	1198.65	,59,933
32.00	Maintenance for 3rd Year: Providing and Fixing Spacers for Power Ducts of size 225 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34.00	1083.24	36,830
33.00	Maintenance for 3rd Year: Providing and Fixing Spacers for Power Ducts of size 160 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34.00	2180.64	,74,142
34.00	Maintenance for 3rd Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)	Rmt	10.00	812.36	8,124

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
35.00	Maintenance for 3rd Year: Providing and laying heavy duty cobble stones 60mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.6)	Sqm	170.00	1300.99	2,21,168
36.00	Maintenance for 3rd Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)	Sqm	27.00	1021.44	27,579
37.00	Maintenance for 3rd Year: Providing and laying heavy duty cobble stones 75mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.7)	Sqm	300.00	1372.45	4,11,735
38.00	Maintenance for 3rd Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)	Cum	6.00	9657.65	57,946
39.00	Maintenance for 3rd Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen	Cum	3.20	10793.55	34,539
40.00	Maintenance for 3rd Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications	Nos.	50.00	356.05	17,803
41.00	Maintenance for 3rd Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)	Sqm	25.50	528.53	13,478
42.00	Maintenance for 3rd Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.	Nos	2.00	68544.00	1,37,088

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
43.00	Maintenance for 3rd Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	1.00	5040.00	5,040
44.00	Maintenance for 3rd Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	0.30	112000.00	33,600
45.00	Maintenance for 3rd Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Cum	943.74	200.48	189,201
46.00	Maintenance for 3rd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Earth	Cum	58.53	101.76	5,956
47.00	Maintenance for 3rd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Debris	Cum	9.38	102.26	,959
	Electrical Works				
48.00	Maintenance for 3rd Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))	Nos.	1.00	1450.40	1,450
49.00	Maintenance for 3rd Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)	Nos.	0.00	19172.16	,0
50.00	Maintenance for 3rd Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	1.00	13910.40	13,910
51.00	Maintenance for 3rd Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	1.00	8285.76	8,286

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
52.00	Maintenance for 3rd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	1.00	3964.80	3,965
53.00	Maintenance for 3rd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	1.00	2688.00	2,688
54.00	Maintenance for 3rd Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.- 8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	184.00	694.40	1,27,770
55.00	Maintenance for 3rd Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	Nos.	1.00	13196.87	,13,197
56.00	Maintenance for 3rd Year: Supply and fixing of miniature circuit breaker on exisiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	Nos.	1.00	1732.64	,1,733
	LT Cable				
57.00	Maintenance for 3rd Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5.7.5.4)	m	600.00	131.04	78,624
58.00	Maintenance for 3rd Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	100.00	91.39	9,139
59.00	Maintenance for 3rd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21.7.21.6)	Nos	45.00	12.67	570
60.00	Maintenance for 3rd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	40.00	3.49	140
	Earthing system				
61.00	Maintenance for 3rd Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipmentson the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)	Kit	1.00	6160.00	6,160
62.00	Maintenance for 3rd Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	500.00	21.84	10,920
	Landcaping Works				
	SOIL MIXES and Ground Preparation				
63.00	Maintenance for 3rd Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	36.00	156.80	5,645

Sr.No.	Specification	Unit	Total Qty.	Rate	Amount
64.00	Maintenance for 3rd Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)	Cum	27.00	251.33	6,786
65.00	Maintenance for 3rd Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)	Cum	18.00	126.90	2,284
66.00	Maintenance for 3rd Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	1.20	26.78	32
Soil preparation of Lawn					
67.00	Maintenance for 3rd Year: KSRRB M300-3.Making lawns including ploughing and breaking of clod,removal of rubbish,dressing and supplying doobs grass roots and planting at 15 cm apart,including supplying and spreading of farm yard manure at rate of 0.18cum per 100 sqm complete as per specifications. MORTH Specification No.307 (KSRRB 19.80)	Sqm	382.19	126.90	48,500
TURF					
68.00	Maintenance for 3rd Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	3.00	175.62	527
IRRIGATION					
69.00	Maintenance for 3rd Year: Watering with tanker to landscape area and plants for one year	Year	1.00	43897.06	43,897
70.00	Maintenance for 3rd Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	3.00	627.20	1,882
Total					,38,63,378

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City
8.3.1 M.S. For Maintenance of Road and Other Work for DPR 3 - 3rd Year

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
Civil Works							
1.00	Maintenance for 3rd Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	1	40	2		80.00
2.00	Maintenance for 3rd Year: KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)	Cum	1	3.5	3.5	0.3	3.68
3.00	Maintenance for 3rd Year: KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)	Rmt	1	25			25.00
4.00	Maintenance for 3rd Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)	Cum	1	20	1	0.5	10.00
5.00	Maintenance for 3rd Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)	Cum	1	3	0.5	0.23	0.35
6.00	Maintenance for 3rd Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)	Cum	1.00	55	5	0.5	137.50
7.00	Maintenance for 3rd Year: KSRRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)	Cum	1.00	55	5	0.5	137.50
8.00	Maintenance for 3rd Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)	Sqm	1.00	40		5	200.00
9.00	Maintenance for 3rd Year: KSRRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills , including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	1.00	10	5	0.1	5.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
10.00	<p>Maintenance for 3rd Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>	Cum	10.00	3.5	3.5	0.15	18.38
11.00	<p>Maintenance for 3rd Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters confirming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)</p>	Cum	1.00	300	0.2	0.9	54.00
12.00	<p>Maintenance for 3rd Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)</p>	Sqm	2.00	300		0.9	540.00
13.00	<p>Maintenance for 3rd Year: KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straightening,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500</p>	MT	1.00	4.32			4.32
14.00	<p>Maintenance for 3rd Year: KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305</p>	Cum	10.00	3.5	3.5	0.5	61.25
15.00	<p>Maintenance for 3rd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)</p>	Cum	10.00	3.5	3.5	0.1	12.25
16.00	<p>Maintenance for 3rd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>	Cum	1.00	85	2	0.1	17.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
17.00	Maintenance for 3rd Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed, plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts confirming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealent primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)	Cum	10.00	3.5	3.5	0.25	30.63
18.00	Maintenance for 3rd Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)	Rmt	1.00	500			500.00
19.00	Maintenance for 3rd Year: KSSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)	Rmt	1.00	500			500.00
20.00	Maintenance for 3rd Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)	Cum	1	15	0.1		1.55
21.00	Maintenance for 3rd Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)	Cum	1	70	0.03		1.95
22.00	Maintenance for 3rd Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)	Cum	1	70	0.01		0.83
23.00	Maintenance for 3rd Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Rmt	100				100.00
24.00	Maintenance for 3rd Year: KSSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)	Sqm	1	3500		0.28	980.00
25.00	Maintenance for 3rd Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)	Nos.	10.00				10.00
26.00	Maintenance for 3rd Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)	Nos.	10.00				10.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
27.00	Maintenance for 3rd Year: Providing gully pipe lowering, laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line. The rate shall include all jointing materials, testing apparatus and water for testing etc as directed by the Engineer in charge (page No.41, Item No.7, KUWSDB SOR 2016-17)	Rmt	1.00	20.00			20.00
28.00	Maintenance for 3rd Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia , of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16, P.No.86, SI.No.12.89)	Nos.	1.00	10			10.00
29.00	Maintenance for 3rd Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia , across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17, Item No.24.34, Pg.No.188)	Rmt	1	10.00			10.00
30.00	Maintenance for 3rd Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the overburden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	1	50			50.00
31.00	Maintenance for 3rd Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the overburden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	1	50			50.00
32.00	Maintenance for 3rd Year: Providing and Fixing Spacers for Power Ducts of size 225 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34				34.00
33.00	Maintenance for 3rd Year: Providing and Fixing Spacers for Power Ducts of size 160 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34				34.00
34.00	Maintenance for 3rd Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)	Rmt	1	10			10.00
35.00	Maintenance for 3rd Year: Providing and laying heavy duty cobble stones 60mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.6)	Sqm	1	85	2		170.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
36.00	Maintenance for 3rd Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)	Sqm	1.00	90	0.3		27.00
37.00	Maintenance for 3rd Year: Providing and laying heavy duty cobble stones 75mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.7)	Sqm	1.00	200	1.5		300.00
38.00	Maintenance for 3rd Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)	Cum	2.00	8	2.5	0.15	6.00
39.00	Maintenance for 3rd Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen	Cum	4.00	2.5	8	0.04	3.20
40.00	Maintenance for 3rd Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications	Nos.	50.00				50.00
41.00	Maintenance for 3rd Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)	Sqm	1.00	170	0.15		25.50
42.00	Maintenance for 3rd Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.	Nos	2.00				2.00
43.00	Maintenance for 3rd Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	1.00				1.00
44.00	Maintenance for 3rd Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	1.00	0.3			0.30

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
45.00	Maintenance for 3rd Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Cum	2.00	6741	0.7	0.1	943.74
46.00	Maintenance for 3rd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Earth	Cum	1.00	58.53			58.53
47.00	Maintenance for 3rd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Debris	Cum	1.00	9.38			9.38
Electrical Works							
48.00	Maintenance for 3rd Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))	Nos.	1				1.00
49.00	Maintenance for 3rd Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)	Nos.					0.00
50.00	Maintenance for 3rd Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	1				1.00
51.00	Maintenance for 3rd Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	1				1.00
52.00	Maintenance for 3rd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	1				1.00
53.00	Maintenance for 3rd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	1				1.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
54.00	Maintenance for 3rd Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	184.00				184.00
55.00	Maintenance for 2nd Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	Nos.	1.00				1.00
56.00	Maintenance for 2nd Year: Supply and fixing of miniature circuit breaker on existiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	Nos.	1.00				1.00
LT Cable							
57.00	Maintenance for 3rd Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)	m	1	600.00			600.00
58.00	Maintenance for 3rd Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	1	100.00			100.00
59.00	Maintenance for 3rd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)	Nos	45				45.00
60.00	Maintenance for 3rd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	40				40.00
Earthing system							
61.00	Maintenance for 3rd Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipments on the mter board by using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)	Kit	1				1.00
62.00	Maintenance for 3rd Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	1	500			500.00
Landcaping Works							
SOIL MIXES and Ground Preparation							
63.00	Maintenance for 3rd Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	1	100	0.6	0.6	36.00
64.00	Maintenance for 3rd Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)	Cum	3	100	0.6	0.15	27.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
65.00	Maintenance for 3rd Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)	Cum	3	100	0.6	0.1	18.00
66.00	Maintenance for 3rd Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	3	100	0.04	0.1	1.20
Soil preparation of Lawn							
67.00	Maintenance for 3rd Year: KSRRB M300-3.Making lawns including ploughing and breaking of clod,removal of rubbish,dressing and supplying doobs grass roots and planting at 15 cm apart,including supplying and spreading of farm yard manure at rate of 0.18cum per 100 sqm complete as per specifications. MORTH Specification No.307 (KSRRB 19.80)	Sqm	1.00	382.19			382.19
68.00	Maintenance for 3rd Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	1	5	0.6		3.00
IRRIGATION							
69.00	Maintenance for 3rd Year: Watering with tanker to landscape area and plants for one year	Year					1.00
70.00	Maintenance for 3rd Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	1	5	0.6		3.00

Assistant Engineer
MSCL Mangaluru

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

**Name of the Work :- Mangalore Smart City
8.3.2 R.A. For Maintenance of 3rd Year - DPR 3**

1	Maintenance for 3rd Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)			
	Basic rate		68.16	
	Maintenance- 3rd year escalation of 12%		8.18	
	Add 10% For area weightage (Mangalore City)		7.63	
		Rate	83.97	Sqm
2	Maintenance for 3rd Year: KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)			
	Basic rate		899	
	Maintenance- 3rd year escalation of 12%		107.88	
	Add 10% For area weightage (Mangalore City)		100.69	
		Rate	1107.57	Cum
3	Maintenance for 3rd Year: KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)			
	Basic rate		12.00	
	Maintenance- 3rd year escalation of 12%		1.44	
	Add 10% For area weightage (Mangalore City)		1.34	
		Rate	14.78	Rmt
4	Maintenance for 3rd Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)			
	Basic rate		390	
	Maintenance- 3rd year escalation of 12%		46.8	
	Add 10% For area weightage (Mangalore City)		43.68	
		Rate	480.48	Cum
5	Maintenance for 3rd Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)			
	Basic rate		351	
	Maintenance- 3rd year escalation of 12%		42.12	
	Add 10% For area weightage		39.31	
		Rate	432.43	Cum

6	<p>Maintenance for 3rd Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)</p>			
	Basic rate		41	
	Maintenance- 3rd year escalation of 12%		4.92	
	Add 10% For area weightage (Mangalore City)		4.59	
		Rate	50.51	Cum
7	<p>Maintenance for 3rd Year: KSRRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)</p>			
	Basic rate		120	
	Maintenance- 3rd year escalation of 12%		14.4	
	Add 10% For area weightage (Mangalore City)		13.44	
		Rate	147.84	Cum
8	<p>Maintenance for 3rd Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)</p>			
	Basic rate		6	
	Maintenance- 3rd year escalation of 12%		0.72	
	Add 10% For area weightage (Mangalore City)		0.67	
		Rate	7.39	Sqm
9	<p>Maintenance for 3rd Year: KSRRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, ncluding cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>			
	Basic Rate		5900	
	Maintenance- 3rd year escalation of 12%		708	
	Add 10% For area weightage (Mangalore City)		660.8	
		Rate	7268.80	Cum
10	<p>Maintenance for 3rd Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, speading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>			
	Basic Rate		2166	
	Maintenance- 3rd year escalation of 12%		259.92	
	Add 10% For area weightage (Mangalore City)		242.59	
		Rate	2668.51	Cum

11	<p>Maintenance for 3rd Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters confirming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)</p>				
	Basic Rate			6198	
	Maintenance- 3rd year escalation of 12%			743.76	
	Add 10% For area weightage (Mangalore City)			694.18	
			Rate	7635.94	Cum
12	<p>Maintenance for 3rd Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)</p>				
	Basic Rate			263	
	Maintenance- 3rd year escalation of 12%			31.56	
	Add 10% For area weightage (Mangalore City)			29.46	
			Rate	324.02	Sqm
13	<p>Maintenance for 3rd Year: KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500</p>				
	Basic Rate			70782	
	Maintenance- 3rd year escalation of 12%			8493.84	
	Add 10% For area weightage (Mangalore City)			7927.58	
			Rate	87203.42	MT
14	<p>Maintenance for 3rd Year: KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305</p>				
	Basic Rate			513	
	Maintenance- 3rd year escalation of 12%			61.56	
	Add 20km lead (17.4 KSRRB M100-4.1-Cost of haulage excluding loading and unloading MORTH-100/Chapter 1-case 1- Surface Road)=2.0 Rs/ Tkm x 1.28 T x 20km			51.2	
	Sub Total			625.76	
	Add 10% For area weightage (Mangalore City)			62.58	
			Rate	688.34	Cum

15	<p>Maintenance for 3rd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)</p>				
	Basic Rate			4048	
	Maintenance- 3rd year escalation of 12%			485.76	
	Add 10% For area weightage (Mangalore City)			453.38	
			Rate	4987.14	Cum
16	<p>Maintenance for 3rd Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>				
	Basic Rate			3680	
	Maintenance- 3rd year escalation of 12%			441.6	
	Add 10% For area weightage (Mangalore City)			412.16	
			Rate	4533.76	Cum
17	<p>Maintenance for 3rd Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts confirming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuos operation including provision of contraction, expansio, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealent primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)</p>				
	Basic Rate			5765	
	Maintenance- 3rd year escalation of 12%			691.8	
	Add 10% For area weightage (Mangalore City)			645.68	
			Rate	7102.48	Cum
18	<p>Maintenance for 3rd Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)</p>				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.2			115	
	Maintenance- 3rd year escalation of 12%			13.8	
			Rate	128.8	Rmt

19	<p>Maintenance for 3rd Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)</p>				
	Basic Rate			331	
	Maintenance- 3rd year escalation of 12%			39.72	
	Add 10% For area weightage (Mangalore City)			37.07	
			Rate	407.79	Rmt
20	<p>Maintenance for 3rd Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)</p>				
	Rate Arrived as per Rate analysis				
	Basic Rate			17708.82	
	Maintenance- 3rd year escalation of 12%			2125.06	
			Rate	19833.88	Cum
21	<p>Maintenance for 3rd Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>				
	Basic rate			421	
	Maintenance- 3rd year escalation of 12%			50.52	
	Add 10% For area weightage (Mangalore City)			47.15	
			Rate	518.67	Cum
22	<p>Maintenance for 3rd Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>				
	Basic rate			421	
	Maintenance- 3rd year escalation of 12%			50.52	
	Add 10% For area weightage (Mangalore City)			47.15	
			Rate	518.67	Cum
23	<p>Maintenance for 3rd Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.</p>				
	Basic rate			98	
	Maintenance- 3rd year escalation of 12%			11.76	
	Add 10% For area weightage (Mangalore City)			10.98	
			Rate	120.74	Cum

24	Maintenance for 3rd Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)			
	Basic Rate		80	
	Maintenance- 3rd year escalation of 12%		9.6	
	Add 10% For area weightage (Mangalore City)		8.96	
		Rate	98.56	Sqm
25	Maintenance for 3rd Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)			
	Rate Arrived as per Rate analysis			
	Basic Rate		917	
	Maintenance- 3rd year escalation of 12%		110.04	
		Rate	1027.04	Nos.
26	Maintenance for 3rd Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.15		3500.00	
	Maintenance- 3rd year escalation of 12%		420	
		Rate	3920.00	Nos.
27	Maintenance for 3rd Year: Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7,KUWSDB SOR 2016-17)			
	Basic Rate		297	
	Maintenance- 3rd year escalation of 12%		35.64	
	Add 12% on Labor Charges=Rs.47,For area weightage (Mangalore City)		5.64	
		Rate	338.28	Rm
28	Maintenance for 3rd Year: KSRRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia, of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16,P.No.86, SI.No.12.89)			
	Basic Rate		830	
	Maintenance- 3rd year escalation of 12%		99.6	
	Add 10% For area weightage (Mangalore City)		92.96	
		Rate	1022.56	Nos.

29	<p>Maintenance for 3rd Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17,Item No.24.34,Pg.No.188)</p>				
	Basic Rate			5022	
	Maintenance- 3rd year escalation of 12%			602.64	
	Add 10% For area weightage (Mangalore City)			562.46	
			Rate	6187.10	Rm
30	<p>Maintenance for 3rd Year: Providing and laying Dia 225mm HDPE Electrical pipe Conduits with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)</p>				
	Basic Rate			2300	
	Deduct GST @18%			-414	
	Labour Cost for laying and Jointing-KUWSDB,HDPE Pipes,Item No.50,Pg.No.123)			78	
	Add 12% For area weightage (Mangalore City)			9.36	
	Sub Total			1973.36	
	Maintenance- 3rd year escalation of 12%			236.8	
			Rate	2210.16	Rm
31	<p>Maintenance for 3rd Year: Providing and laying Dia 160mm HDPE Electrical pipe Conduits with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5,Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7.The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years.(Market Rate)</p>				
	Basic Rate			1215	
	Deduct GST @18%			-218.7	
	Labour Cost for laying and Jointing-KUWSDB,HDPE Pipes,Item No.50,Pg.No.123)			66	
	Add 12% For area weightage (Mangalore City)			7.92	
	Sub Total			1070.22	
	Maintenance- 3rd year escalation of 12%			128.43	
			Rate	1198.65	Rm
32	<p>Maintenance for 3rd Year: Providing and Fixing Spacers for Power Ducts of size 225 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)</p>				
	Basic Rate			1003	
	Maintenance- 3rd year escalation of 12%			80.24	
			Rate	1083.24	Nos.

33	Maintenance for 3rd Year: Providing and Fixing Spacers for Power Ducts of size 160 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)			
	Basic Rate		1947	
	Maintenance- 3rd year escalation of 12%		233.64	
		Rate	2180.64	Nos.
34	Maintenance for 3rd Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)			
	Basic Rate		685	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		36	
	Add 12% For area weightage (Mangalore City)		4.32	
	Sub Total		725.32	
	Maintenance- 3rd year escalation of 12%		87.04	
		Rate	812.36	Rm
35	Maintenance for 3rd Year: Providing and laying heavy duty cobble stones 60mm thick, using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.6)			
	Basic rate		1056.00	
	Maintenance- 3rd year escalation of 12%		126.72	
	Add 10% For area weightage (Mangalore City)		118.27	
		Rate	1300.99	Sqm
36	Maintenance for 3rd Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and coarse sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore, Refer Sr.No.12		912.00	
	Maintenance- 3rd year escalation of 12%		109.44	
		Rate	1021.44	Sqm
37	Maintenance for 3rd Year: Providing and laying heavy duty cobble stones 75mm thick, using cement and coarse sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.7)			
	Basic rate		1114	

	Maintenance- 3rd year escalation of 12%		133.68	
	Add 10% For area weightage (Mangalore City)		124.77	
		Rate	1372.45	Sqm
38	Maintenance for 3rd Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)			
	Basic rate		7839	
	Maintenance- 3rd year escalation of 12%		940.68	
	Add 10% For area weightage (Mangalore City)		877.97	
		Rate	9657.65	Cum
39	Maintenance for 3rd Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen			
	Basic rate		8761	
	Maintenance- 3rd year escalation of 12%		1051.32	
	Add 10% For area weightage (Mangalore City)		981.23	
		Rate	10793.55	Cum
40	Maintenance for 3rd Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications			
	Basic rate		289	
	Maintenance- 3rd year escalation of 12%		34.68	
	Add 10% For area weightage (Mangalore City)		32.37	
		Rate	356.05	Nos.
41	Maintenance for 3rd Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)			
	Basic Rate		429	
	Maintenance- 3rd year escalation of 12%		51.48	
	Add 10% For area weightage (Mangalore City)		48.05	
		Rate	528.53	Sqm
42	Maintenance for 3rd Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.			
	Baisc rate		61200	

	Maintenance- 3rd year escalation of 12%		7344	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.1	Rate	68544	Nos.
43	Maintenance for 3rd Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.13		4500.00	
	Maintenance- 3rd year escalation of 12%		540	
		Rate	5040	Nos.
44	Maintenance for 3rd Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.26		100000.00	
	Maintenance- 3rd year escalation of 12%		12000	
		Rate	112000	MT
45	Maintenance for 3rd Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic Rate		179.00	
	Maintenance- 3rd year escalation of 12%		21.48	
		Rate	200.48	Nos.
46	Maintenance for 3rd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Earth			
	Earth		2.0x1.28x10km	
	Basic rate		25.60	
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00	
	Sub Total-1		82.60	
	Add 10% For area weightage (Mangalore City)		8.26	
	Sub Total-2		90.86	
	Maintenance- 3rd year escalation of 12%		10.9	
		Rate	101.76	Cum
47	Maintenance for 3rd Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Debris			
	Debris		2.0x1.30x10Km	
	Basic rate		26.00	
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00	
	Sub Total-1		83.00	

	Add 10% For area weightage (Mangalore City)		8.3	
	Sub Total-2		91.30	
	Maintenance- 3rd year escalation of 12%		10.96	
		Rate	102.26	Cum
Lighting Poles				
48	Maintenance for 3rd Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.22		1,295	
	Maintenance- 3rd year escalation of 12%		155.4	
		Rate	1450.4	Nos.
49	Maintenance for 3rd Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)			
	Basic rate		17118	
	Maintenance- 3rd year escalation of 12%		2054.16	
		Rate	19,172.16	Nos.
50	Maintenance for 3rd Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)			
	Basic rate		12420	
	Maintenance- 3rd year escalation of 12%		1490.4	
		Rate	13,910.40	Nos.
51	Operation & Maintenance for 3rd Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)			
	Basic rate		7398	
	Maintenance- 3rd year escalation of 12%		887.76	
		Rate	8,285.76	Nos.

52	Maintenance for 3rd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)			
	Basic rate			3540
	Maintenance- 3rd year escalation of 12%			424.8
		Rate	3,964.80	Nos.
53	Operation & Maintenance for 3rd Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)			
	Basic rate			2400
	Maintenance- 3rd year escalation of 12%			288
		Rate	2,688	Nos.
54	Maintenance for 3rd Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)			
	Basic rate			620
	Maintenance- 3rd year escalation of 12%			74.4
		Rate	694	Nos.
	Outdoor Box and Switch Gear			
55	Maintenance for 3rd Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets			
	Price list (Considering 30% discount , 18% GST & 10% profit)			11782.92
	Maintenance- 3rd year escalation of 12%			1413.95
		Rate	13,197	Nos.
56	Maintenance for 3rd Year: Supply and fixing of miniature circuit breaker on existing board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)			
	Basic rate			1547
	Maintenance- 3rd year escalation of 12%			185.64
		Rate	1,733	Nos.
	LT Cable			
57	Maintenance for 3rd Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)			
	Basic rate			117
	Maintenance- 3rd year escalation of 12%			14.04
		Rate	131.04	Rm

58	Maintenance for 3rd Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)				
	Basic rate			81.6	
	Maintenance- 3rd year escalation of 12%			9.79	
			Rate	91.39	Rm
59	Maintenance for 3rd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)				
	Basic rate			11.31	
	Maintenance- 3rd year escalation of 12%			1.36	
			Rate	12.67	Nos.
60	Maintenance for 3rd Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)				
	Basic rate			3.12	
	Maintenance- 3rd year escalation of 12%			0.37	
			Rate	3.49	Nos.
61	Maintenance for 3rd Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipments on the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)				
	Basic rate			5500	
	Maintenance- 3rd year escalation of 12%			660	
			Rate	6160	Kit
62	Maintenance for 3rd Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)				
	Basic rate			19.5	
	Maintenance- 3rd year escalation of 12%			2.34	
			Rate	21.84	Rmt
63	Maintenance for 3rd Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.27			140.00	
	Maintenance- 3rd year escalation of 12%			16.8	
			Rate	156.80	Cum

64	Maintenance for 3rd Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stackin complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)			
	Basic rate			204
	Maintenance- 3rd year escalation of 12%			24.48
	Add 10% For area weightage (Mangalore City)			22.85
		Rate		251.33
				Cum
65	Maintenance for 3rd Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)			
	Basic rate			103
	Maintenance- 3rd year escalation of 12%			12.36
	Add 10% For area weightage (Mangalore City)			11.54
		Rate		126.90
				Cum
66	Maintenance for 3rd Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.28			23.91
	Maintenance- 3rd year escalation of 12%			2.87
		Rate		26.78
				Cum
67	Maintenance for 3rd Year: Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc complete including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic rate			103
	Maintenance- 3rd year escalation of 12%			12.36
	Add 10% For area weightage (Mangalore City)			11.54
		Rate		126.90
				Sqm

TURF			
68	Maintenance for 3rd Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)		
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.32		156.80
	Maintenance- 3rd year escalation of 12%		18.82
		Rate	175.62
			Sqm
IRRIGATION			
69	Maintenance for 3rd Year: Watering with tanker to landscape area and plants for one year		
	Water Tanker =52 Rs/ Hour,One Year Cost=92 days x 3 hrs x 61rs/hr (365days-90 days of mansoon=275 days/3 days=92 days,consider watering at every 3 days)		16836
	Mazdoor = 0.5 days x 446.20		20525.2
	Add 10% For area weightage (Mangalore City)		2052.52
	Maintenance- 3rd year escalation of 12%		4483.34
		Rate	43897.06
			Year
70	Maintenance for 3rd Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)		
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.34		560.00
	Maintenance- 3rd year escalation of 12%		67.2
		Rate	627.20
			Sqm

**Assistant Engineer
MSCL Mangaluru**

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City
8.4.0 Abstract for Maintenance of Road and Other Work for DPR 3 - 4th Year

	Specification	Unit	Total Qty.	Rate	Amount
	Civil Works				
1.00	Maintenance for 4th Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	80.00	86.98	6,958
2.00	Maintenance for 4th Year: KSRRB M200. Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)	Cum	3.68	1147.12	4,221
3.00	Maintenance for 4th Year: KSRRB M200- Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)	Rmt	25.00	15.31	383
4.00	Maintenance for 4th Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)	Cum	10.00	497.64	4,976
5.00	Maintenance for 4th Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)	Cum	0.35	447.88	157
6.00	Operation & Maintenance for 4th Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)	Cum	137.50	52.32	7,194
7.00	Maintenance for 4th Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)	Cum	137.50	153.12	21,054
8.00	Maintenance for 4th Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)	Sqm	200.00	7.66	1,532

	Specification	Unit	Total Qty.	Rate	Amount
9.00	Maintenance for 4th Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills , including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	5.00	7528.40	37,642
10.00	Maintenance for 4th Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI . (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	18.38	2763.82	,50,799
11.00	Maintenance for 4th Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters conforming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnspillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)	Cum	54.00	7908.65	4,27,067
12.00	Maintenance for 4th Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)	Sqm	540.00	335.59	1,81,219
13.00	Maintenance for 4th Year: KSRB 4.9.2 : Providing T.M.T steel reinforcement for RCC work including straightening,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500	MT	4.32	90317.83	3,90,173
14.00	Maintenance for 4th Year: KSRRB M300- Construction of Subgrade . KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305	Cum	61.25	710.91	43,543

	Specification	Unit	Total Qty.	Rate	Amount
15.00	<p>Maintenance for 4th Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)</p>	Cum	12.25	5165.25	,63,274
16.00	<p>Maintenance for 4th Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>	Cum	17.00	4695.68	,79,827
17.00	<p>Maintenance for 4th Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts confirming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuous operation including provision of contraction, expansio, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealent primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)</p>	Cum	30.63	7356.14	2,25,319
18.00	<p>Maintenance for 4th Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)</p>	Rmt	500.00	133.40	,66,700
19.00	<p>Maintenance for 4th Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)</p>	Rmt	500.00	422.36	2,11,180

	Specification	Unit	Total Qty.	Rate	Amount
20.00	<p>Maintenance for 4th Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)</p>	Cum	1.55	20542.23	,31,840
21.00	<p>Maintenance for 4th Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	1.95	537.20	,1,048
22.00	<p>Maintenance for 4th Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)</p>	Cum	0.83	537.20	,,446
23.00	<p>Maintenance for 4th Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.</p>	Rmt	100.00	125.05	12,505
24.00	<p>Maintenance for 4th Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)</p>	Sqm	980.00	102.08	1,00,038
25.00	<p>Maintenance for 4th Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)</p>	Nos.	10.00	1063.72	10,637
26.00	<p>Maintenance for 4th Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)</p>	Nos.	10.00	4060.00	,40,600
27.00	<p>Maintenance for 4th Year: Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7,KUWSDB SOR 2016-17)</p>	Rmt	20.00	350.16	7,003
28.00	<p>Maintenance for 4th Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia, of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16,P.No.86, SI.No.12.89)</p>	Nos.	10.00	1059.08	10,591

	Specification	Unit	Total Qty.	Rate	Amount
29.00	Maintenance for 4th Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17,Item No.24.34,Pg.No.188)	Rmt	10.00	6408.07	64,081
30.00	Maintenance for 4th Year: Providing and laying Dia 225mm Power Duct Conduits with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	50.00	2289.10	1,14,455
31.00	Maintenance for 4th Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	50.00	1241.46	,62,073
32.00	Maintenance for 4th Year: Providing and Fixing Spacers for Power Ducts of size 225 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34.00	1163.48	39,558
33.00	Maintenance for 4th Year: Providing and Fixing Spacers for Power Ducts of size 160 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34.00	2258.52	,76,790
34.00	Maintenance for 4th Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)	Rmt	10.00	841.37	8,414
35.00	Maintenance for 4th Year: Providing and laying heavy duty cobble stones 60mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101, SI No : 14.6)	Sqm	170.00	1347.46	2,29,068
36.00	Maintenance for 4th Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)	Sqm	27.00	1057.92	28,564

	Specification	Unit	Total Qty.	Rate	Amount
37.00	Maintenance for 4th Year: Providing and laying heavy duty cobble stones 75mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.7)	Sqm	300.00	1421.46	4,26,438
38.00	Maintenance for 4th Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)	Cum	6.00	10002.56	60,015
39.00	Maintenance for 4th Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen	Cum	3.20	11179.04	35,773
40.00	Maintenance for 4th Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications	Nos.	50.00	335.24	16,762
41.00	Maintenance for 4th Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)	Sqm	2078.72	547.40	1137,891
42.00	Maintenance for 4th Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.	Nos	2.00	70992.00	1,41,984
43.00	Maintenance for 4th Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	1.00	5220.00	5,220
44.00	Maintenance for 4th Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	0.30	116000.00	34,800
45.00	Maintenance for 4th Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Cum	943.74	207.64	1,95,958

	Specification	Unit	Total Qty.	Rate	Amount
46.00	Maintenance for 4th Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Earth	Cum	58.53	105.40	6,169
47.00	Maintenance for 4th Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Debris	Cum	9.38	105.91	,993
	Electrical Works				
48.00	Maintenance for 4th Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))	Nos.	1.00	1502.20	1,502
49.00	Maintenance for 4th Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)	Nos.	0.00	19856.88	,0
50.00	Maintenance for 4th Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	1.00	14407.20	14,407
51.00	Operation & Maintenance for 4th Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	1.00	8581.68	8,582
52.00	Maintenance for 4th Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	1.00	4106.40	4,106
53.00	Maintenance for 4thYear: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	1.00	2784.00	2,784

	Specification	Unit	Total Qty.	Rate	Amount
54.00	Maintenance for 4th Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	184.00	719.20	1,32,333
55.00	Maintenance for 4th Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	Nos.	1.00	13196.87	13,197
56.00	Maintenance for 4th Year: Supply and fixing of miniature circuit breaker on existiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	Nos.	1.00	1732.64	1,733
	LT Cable				
57.00	Maintenance for 4th Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)	m	600.00	135.72	81,432
58.00	Maintenance for 4th Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	100.00	94.66	9466
59.00	Maintenance for 4th Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)	Nos	45.00	13.12	590
60.00	Maintenance for 4thYear: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	40.00	3.62	145
	Earthing system				
61.00	Maintenance for 4th Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipments on the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)	Kit	1.00	6380.00	6,380
62.00	Maintenance for 4th Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	500.00	22.62	11,310
	Landcaping Works				
	SOIL MIXES and Ground Preparation				
63.00	Maintenance for 4th Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	36.00	162.40	5,846

	Specification	Unit	Total Qty.	Rate	Amount
64.00	Maintenance for 4th Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stacking complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)	Cum	27.00	260.30	7,028
65.00	Maintenance for 4th Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)	Cum	18.00	131.43	2,366
66.00	Maintenance for 4th Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	1.20	27.74	33
	Soil preparation of Lawn				
67.00	Maintenance for 4th Year: KSRRB M300-3.Making lawns including ploughing and breaking of clod,removal of rubbish,dressing and supplying doobs grass roots and planting at 15 cm apart,including supplying and spreading of farm yard manure at rate of 0.18cum per 100 sqm complete as per specifications. MORTH Specification No.307 (KSRRB 19.80)	Sqm	382.19	131.43	50,231
	TURF				
68.00	Operation & Maintenance for 4th Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	3.00	181.89	546
	IRRIGATION				
69.00	Operation & Maintenance for 4th Year: Watering with tanker to landscape area and plants for one year	Year	1.00	45391.51	45,392
70.00	Operation & Maintenance for 4th Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	3.00	649.60	1,949
				Total	,51,24,290

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City
8.4.1 M.S. For Maintenance of Road and Other Work for DPR 3 -4th Year

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
Civil Works							
1.00	Maintenance for 4th Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)	Sqm	1	40	2		80.00
2.00	Maintenance for 4th Year: KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)	Cum	1	3.5	3.5	0.3	3.68
3.00	Maintenance for 4th Year: KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)	Rmt	1	25			25.00
4.00	Maintenance for 4th Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)	Cum	1	20	1	0.5	10.00
5.00	Maintenance for 4th Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)	Cum	1	3	0.5	0.23	0.35
6.00	Maintenance for 4th Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)	Cum	1.00	55	5	0.5	137.50
7.00	Maintenance for 4th Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)	Cum	1.00	55	5	0.5	137.50
8.00	Maintenance for 4th Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occurring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)	Sqm	1.00	40		5	200.00
9.00	Maintenance for 4th Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregates @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills , ncluding cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	1.00	10	5	0.1	5.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
10.00	<p>Maintenance for 4th Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>	Cum	10.00	3.5	3.5	0.15	18.38
11.00	<p>Maintenance for 4th Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters confirming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)</p>	Cum	1.00	300	0.2	0.9	54.00
12.00	<p>Maintenance for 4th Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)</p>	Sqm	2.00	300		0.9	540.00
13.00	<p>Maintenance for 4th Year: KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straightening,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500</p>	MT	1.00	4.32			4.32
14.00	<p>Maintenance for 4th Year: KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305</p>	Cum	10.00	3.5	3.5	0.5	61.25
15.00	<p>Maintenance for 4th Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)</p>	Cum	10.00	3.5	3.5	0.1	12.25
16.00	<p>Maintenance for 4th Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>	Cum	1.00	85	2	0.1	17.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
17.00	Maintenance for 4th Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed, plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplasticizer at 3 lts conforming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints,including groove cutting charges, joints filler,separation memberane, sealant primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per specifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)	Cum	10.00	3.5	3.5	0.25	30.63
18.00	Maintenance for 4th Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)	Rmt	1.00	500			500.00
19.00	Maintenance for 4th Year: KSSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)	Rmt	1.00	500			500.00
20.00	Maintenance for 4th Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)	Cum	1	15	0.1		1.55
21.00	Maintenance for 4th Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)	Cum	1	70	0.03		1.95
22.00	Maintenance for 4th Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)	Cum	1	70	0.01		0.83
23.00	Maintenance for 4th Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Rmt	100				100.00
24.00	Maintenance for 4th Year: KSSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)	Sqm	1	3500		0.28	980.00
25.00	Maintenance for 4th Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)	Nos.	10.00				10.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
26.00	Maintenance for 4th Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)	Nos.	10.00				10.00
27.00	Maintenance for 4th Year: Providing gully pipe lowering, laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line. The rate shall include all jointing materials, testing apparatus and water for testing etc as directed by the Engineer in charge (page No.41, Item No.7, KUWSDB SOR 2016-17)	Rmt	1.00	20.00			20.00
28.00	Maintenance for 4th Year: KSRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia , of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16, P.No.86, Sl.No.12.89)	Nos.	1.00	10			10.00
29.00	Maintenance for 4th Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia , across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum 450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17, Item No.24.34, Pg.No.188)	Rmt	1	10.00			10.00
30.00	Maintenance for 4th Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	1	50			50.00
31.00	Maintenance for 4th Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)	Rmt	1	50			50.00
32.00	Maintenance for 4th Year: Providing and Fixing Spacers for Power Ducts of size 225 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34				34.00
33.00	Maintenance for 4th Year: Providing and Fixing Spacers for Power Ducts of size 160 mm , to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)	Nos.	34				34.00
34.00	Maintenance for 4th Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)	Rmt	1	10			10.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
35.00	Maintenance for 4th Year: Providing and laying heavy duty cobble stones 60mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.6)	Sqm	1	85	2		170.00
36.00	Maintenance for 4th Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)	Sqm	1.00	90	0.3		27.00
37.00	Maintenance for 4th Year: Providing and laying heavy duty cobble stones 75mm thick , using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.7)	Sqm	1.00	200	1.5		300.00
38.00	Maintenance for 4th Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)	Cum	2.00	8	2.5	0.15	6.00
39.00	Maintenance for 4th Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen	Cum	4.00	2.5	8	0.04	3.20
40.00	Maintenance for 4th Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lense reflectors, 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 BS: 873 part 4:1973 complete as per specifications	Nos.	50.00				50.00
41.00	Maintenance for 4th Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface: Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)	Sqm	0.50	4157.44			2078.72
42.00	Maintenance for 4th Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.	Nos	2.00				2.00
43.00	Maintenance for 4th Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	Nos.	1.00				1.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
44.00	Maintenance for 4th Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)	MT	1.00	0.3			0.30
45.00	Maintenance for 4th Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.	Cum	2.00	6741	0.7	0.1	943.74
46.00	Maintenance for 4th Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Earth	Cum	1.00	58.53			58.53
47.00	Maintenance for 4th Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1- Debris	Cum	1.00	9.38			9.38
Electrical Works							
48.00	Maintenance for 4th Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))	Nos.	1				1.00
49.00	Maintenance for 4th Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)	Nos.					0.00
50.00	Maintenance for 4th Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)	Nos.	1				1.00
51.00	Maintenance for 4th Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)	Nos.	1				1.00
52.00	Maintenance for 4th Year: Supplying and fixing of hot dip Galvinized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)	Nos.	1				1.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
53.00	Maintenance for 4th Year: Supplying and fixing of hot dip Galvanized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)	Nos.	1				1.00
54.00	Maintenance for 4th Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)	Nos.	184.00				184.00
55.00	Maintenance for 4th Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets	Nos.	1.00				1.00
56.00	Maintenance for 4th Year: Supply and fixing of miniature circuit breaker on exisiting board using necessasary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required confirming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)	Nos.	1.00				1.00
LT Cable							
57.00	Maintenance for 4th Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)	m	1	600.00			600.00
58.00	Maintenance for 4th Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)	m	1	100.00			100.00
59.00	Operation & Maintenance for 4th Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)	Nos	45				45.00
60.00	Operation & Maintenance for 4thYear: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)	Nos	40				40.00
Earthing system							
61.00	Maintenance for 4th Year: Chemical Earthing for grounding,conduits,IC cut outs and otherequipmentson the mter boardby using copper /SS rod with earth enhancing backfill compound which is non corrosive ,thermally,conductive,potential,to permissible,limits,superior,fault,conductive capacity,non toxic,weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64,SI No.7.23.6)	Kit	1				1.00
62.00	Maintenance for 4th Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessasary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)	Rmt	1	500			500.00
Landcaping Works							
SOIL MIXES and Ground Preparation							
63.00	Maintenance for 4th Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)	Cum	1	100	0.6	0.6	36.00

Sr.No.	Specification	Unit	No.	L	B	D	Qty.
64.00	Maintenance for 4th Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stacking complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)	Cum	3	100	0.6	0.15	27.00
65.00	Maintenance for 4th Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)	Cum	3	100	0.6	0.1	18.00
66.00	Maintenance for 4th Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	3	100	0.04	0.1	1.20
Soil preparation of Lawn							
67.00	Maintenance for 4th Year: KSRRB M300-3.Making lawns including ploughing and breaking of clod,removal of rubbish,dressing and supplying doobs grass roots and planting at 15 cm apart,including supplying and spreading of farm yard manure at rate of 0.18cum per 100 sqm complete as per specifications. MORTH Specification No.307 (KSRRB 19.80)	Sqm	1.00	382.19			382.19
TURF							
68.00	Maintenance for 4th Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)	Sqm	1	5	0.6		3.00
IRRIGATION							
69.00	Maintenance for 4th Year: Watering with tanker to landscape area and plants for one year	Year					1.00
70.00	Maintenance for 4th Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)	Sqm	1	5	0.6		3.00

Assistant Engineer
MSCL Mangaluru

Executive Engineer
MSCL Mangaluru

General Manager Technical
MSCL Mangaluru

**Name of the Work :- Mangalore Smart City
8.4.2 R.A. For Maintenance of 4th Year - DPR 3**

1	Maintenance for 4th Year: Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.(RA attached)				
	Basic rate			68.16	
	Maintenance- 4th year escalation of 16%			10.91	
	Add 10% For area weightage (Mangalore City)			7.91	
		Rate		86.98	Sqm
2	Maintenance for 4th Year: KSRRB M200.Dismantling of cement concrete pavement by mechanical means using pneumatic tools,breaking to pieces not exceeding 0.02 cum in volume and stock pilling at designated locations and disposal of dismantled material stacking serviceable and unserviceable materials separately complete as per specifications.MORTH specification No.202.(Including transporting charges,loading and unloading for lead 5km-Extra) (Page No 138,SI No : 18.47)				
	Basic rate			899	
	Maintenance- 4th year escalation of 16%			143.84	
	Add 10% For area weightage (Mangalore City)			104.28	
		Rate		1147.12	Cum
3	Maintenance for 4th Year: KSRRB M200-Dismantling of kerb Stone and Channel KSRRB M200-26. Dismantling Kerb stone by Manual means and disposal of dismantled materials with all lifts and complete as per specifications.MORTH Specification No.202. (Page No.139,S.I.No.18.49)				
	Basic rate			12.00	
	Maintenance- 4th year escalation of 16%			1.92	
	Add 10% For area weightage (Mangalore City)			1.39	
		Rate		15.31	Rmt
4	Maintenance for 4th Year: KSRRB M200-13.1. Dismantling of 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 specifications. II. By Mechanical Means. A. Cement Concrete Grade M-15 &M-20. MORTH Specification No. 202 (KPWD SOR 16-17,18.20,Page No.137)				
	Basic rate			390	
	Maintenance- 4th year escalation of 16%			62.4	
	Add 10% For area weightage (Mangalore City)			45.24	
		Rate		497.64	Cum
5	Maintenance for 4th Year: KSRRB M200-12.1. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, woodwork, 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 specifications. i)Dismantling Brick/Tile work B.In Cement mortar (Page No 137,SI No : 18.23)				
	Basic rate			351	
	Maintenance- 4th year escalation of 16%			56.16	
	Add 10% For area weightage			40.72	
		Rate		447.88	Cum

6	<p>Maintenance for 4th Year: KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tippers,trimming bottom and side slopes,in accordance with requirements of lines and grades and cross sections,and transporting disposal location up to a lead of 1.00Km and complete as per specifications. MORTH specification No.301(Including transporting charges, loading and unloading for lead 5km) (Page No 143,SI No : 19.14)</p>				
	Basic rate			41	
	Maintenance- 4th year escalation of 16%			6.56	
	Add 10% For area weightage (Mangalore City)			4.76	
			Rate	52.32	Cum
7	<p>Maintenance for 4th Year: KSRB 2-4 : Refilling available earth around pipe lines, cables in layers not exceeding 20cms in depth, compacting each deposited layer by ramming after watering with lead upto 50m. and lift upto 1.5 m. including cost of all labour complete as per specifications.(KPWD 16-17,SI No.2.11,Pg. No.6)</p>				
	Basic rate			120	
	Maintenance- 4th year escalation of 16%			19.2	
	Add 10% For area weightage (Mangalore City)			13.92	
			Rate	153.12	Cum
8	<p>Maintenance for 4th Year: KSRRB 300-Compaction KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depression occuring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3.(KPWD 16-17,SI No.19.64,Pg. No.149)</p>				
	Basic rate			6	
	Maintenance- 4th year escalation of 16%			0.96	
	Add 10% For area weightage (Mangalore City)			0.7	
			Rate	7.66	Sqm
9	<p>Maintenance for 4th Year: KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix M15 Grade with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggretes @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, ncluding cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>				
	Basic Rate			5900	
	Maintenance- 4th year escalation of 16%			944	
	Add 10% For area weightage (Mangalore City)			684.4	
			Rate	7528.40	Cum
10	<p>Maintenance for 4th Year: KSRRB 400 Granular Sub-Base with Coarse Graded Material (table 400-2) KSRRB M400-7. Construction of granular sub-base by providing Coarse graded crushed stone aggregates of granite / trap / basalt material, speading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per MORTH specifications clause 401 and Table 400-1 Grading VI. (P.No.12, I.No. 4.6 of PWD SR 2015-16)</p>				
	Basic Rate			2166	
	Maintenance- 4th year escalation of 16%			346.56	
	Add 10% For area weightage (Mangalore City)			251.26	
			Rate	2763.82	Cum

11	<p>Maintenance for 4th Year: KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @340Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters conforming to IS 9103-1999 reaffirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls,return walls,walls (any thickness) including attached pilasters, columnpillars, posts, struts, buttresses, bed blocks,anchor blocks & plinths etc.,Including cost of labour,HOM of machinery,curing,complete but excluding cost of reinforcement as per specifications. (Page No 13,SI No : 4.10)</p>				
	Basic Rate			6198	
	Maintenance- 4th year escalation of 16%			991.68	
	Add 10% For area weightage (Mangalore City)			718.97	
			Rate	7908.65	Cum
12	<p>Maintenance for 4th Year: KSRB 4.6.1 Providing and removing centering, shuttering, strutting, propping etc.,and removal of formwork for foundations, footings, bases of columns for mass concrete including cost of all materials,labour complete as per specifications. Specification No. KSB 4.6.2 (Page No 15,SI No : 4.28)</p>				
	Basic Rate			263	
	Maintenance- 4th year escalation of 16%			42.08	
	Add 10% For area weightage (Mangalore City)			30.51	
			Rate	335.59	Sqm
13	<p>Maintenance for 4th Year: KSRB 4.9.2 :Providing T.M.T steel reinforcement for RCC work including straighting,cutting,bending,hooking,placing in position,lapping and/or welding wherever required,tying with binding wire and anchoring to thr adjoining members wherever necessary complete as per design (laps,hooks and wastage shall not be measured and paid) cost of materials,labour,HOM of machinary complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500</p>				
	Basic Rate			70782	
	Maintenance- 4th year escalation of 16%			11325.12	
	Add 10% For area weightage (Mangalore City)			8210.71	
			Rate	90317.83	MT
14	<p>Maintenance for 4th Year: KSRRB M300-Construction of Subgrade. KSRRB M300-55. Construction of sub-grade with approved material Gravel/Murum with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of Table No. 300-2 complete as per specifications (including cost of earth, watering charges & compaction by vibratory rollercompaction by vibratory roller to 97% of proctors density) MORTH Specification No. 305</p>				
	Basic Rate			513	
	Maintenance- 4th year escalation of 16%			82.08	
	Add 20km lead (17.4 KSRRB M100-4.1-Cost of haulage excluding loading and unloading MORTH-100/Chapter 1-case 1-Surface Road)=2.0 Rs/ Tkm x 1.28 T x 20km			51.2	
	Sub Total			646.28	
	Add 10% For area weightage (Mangalore City)			64.63	
			Rate	710.91	Cum

15	<p>Maintenance for 4th Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,laid with a paver with electronic sensor,compacting with 8-10 tonnes double drum vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)</p>				
	Basic Rate			4048	
	Maintenance- 4th year escalation of 16%			647.68	
	Add 10% For area weightage (Mangalore City)			469.57	
		Rate		5165.25	Cum
16	<p>Maintenance for 4th Year: KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 1:5:10 OPC cement @160Kgs,with 25mm and down size graded granite/trap/basalt metal coarse aggregate at 0.86cum and fine aggregate @ 0.58cum Sub-base over prepared sub grade with (coarse and fine aggregate confirming to IS:383) aggregate cement ration not to excee 15:1. Aggregate gradation after blending to be as per Table 600-1, cement content to be determined during trail length construction, concrete strength not to be less than 10Mpa at 7 days,mixed in a batching plant,transported to site,Manually laid and compacting with palte compactor,finishing and curing complete as per specifications.Morth specification No.601 (RA attached)</p>				
	Basic Rate			3680	
	Maintenance- 4th year escalation of 16%			588.8	
	Add 10% For area weightage (Mangalore City)			426.88	
		Rate		4695.68	Cum
17	<p>Maintenance for 4th Year: KSSRRB M600-2.Construction of unreinforced,dowel jointed,plain cement concrete pavement over a prepared sub base with 25mm and down size graded granite metal coarse aggregate with superplastisizer at 3 lts confirming to IS9103-1999 reaffirmed 2008(Coarse and fine aggregate conforming to IS:383) mixed in a batching and mixing plant as per approved mix design,transported to site,laid with a fixed form paver spread,compacted and finished in a continuos operation including provision of contraction, expansio, construction and longitudinal joints,including groove cutting chrges, joints filler,separation memberane, sealnt primer, joints sealant, debonding strip, dowel bars at 4.5m intervals, tie rod, admixtures as approved, curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602.do with M40 (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)</p>				
	Basic Rate			5765	
	Maintenance- 4th year escalation of 16%			922.4	
	Add 10% For area weightage (Mangalore City)			668.74	
		Rate		7356.14	Cum
18	<p>Maintenance for 4th Year: Providing and placing joint sealant compound of cold polysulphide in the grooves after widening the groove to required width, sand blasting the groove face if recommended by the sealant manufacturer, cleaning the groove with air compressor, insertion of debonding strip, priming the sides of the sealant if the sealant manufacturer recommends and pouring the sealant all complete including material, manpower (Non SOR Item)</p>				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.2			115	
	Maintenance- 4th year escalation of 16%			18.4	
		Rate		133.4	Rmt

19	Operation & Maintenance for 4th Year: KSRRB 3000 Repair of Joint Grooves with Epoxy Mortar KSRRB M3000-8 Repairs of spalled joints grooves of contraction joints longitudinal joints and expansion joints in concrete pavement using epoxy mortar concrete complete as per specifications.Morth specification No.3005.1 (Page No 257,SI No : 35.8)			
	Basic Rate		331	
	Maintenance- 4th year escalation of 16%		52.96	
	Add 10% For area weightage (Mangalore City)		38.4	
		Rate	422.36	Rmt
20	Maintenance for 4th Year: Providing and laying at or near ground level factory made kerb stone of M-20 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). (RA Attached)			
	Rate Arrived as per Rate analysis			
	Basic Rate		17708.82	
	Maintenance- 4th year escalation of 16%		2833.41	
		Rate	20542.23	Cum
21	Maintenance for 4th Year: Providin and fixing pre cast solid concrete Kerb stones as per the drawing,made out of CC 1:2:4 and Jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)			
	Basic rate		421	
	Maintenance- 4th year escalation of 16%		67.36	
	Add 10% For area weightage		48.84	
		Rate	537.20	Cum
22	Maintenance for 4th Year: Providin and fixing pre cast solid concrete water table(longitudinal gutter) as per the drawing,made out of CC 1:2:4 and jointed with CM 1:3 and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,SI No : 5.3)			
	Basic rate		421	
	Maintenance- 4th year escalation of 16%		67.36	
	Add 10% For area weightage		48.84	
		Rate	537.20	Cum
23	Maintenance for 4th Year: Removing and resetting of kerb stones. including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic rate		98	
	Maintenance- 4th year escalation of 16%		15.68	
	Add 10% For area weightage		11.37	
		Rate	125.05	Rmt

24	Maintenance for 4th Year: KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)				
	Basic Rate			80	
	Maintenance- 4th year escalation of 16%			12.8	
	Add 10% For area weightage (Mangalore City)			9.28	
		Rate		102.08	Sqm
25	Maintenance for 4th Year: P/F Square shape 600mmx450 mm precast R.C.C. manhole cover with frame (Rate analysis attached)				
	Rate Arrived as per Rate analysis				
	Basic Rate			917	
	Maintenance- 4th year escalation of 16%			146.72	
		Rate		1063.72	Nos.
26	Maintenance for 4th Year: Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.15			3500.00	
	Maintenance- 4th year escalation of 16%			560	
		Rate		4060.00	Nos.
27	Maintenance for 4th Year: Providing gully pipe lowering,laying of PVC 100 mm dia pipes to the required alignments including specials and grade as indicated in drawings/design and hydraulically testing of the pipe line.The rate shall include all jointing materials,testing apparatus and water for testi g etc as directed by the Engineer in charge (page No.41,Item No.7,KUWSDB SOR 2016-17)				
	Basic Rate			297	
	Maintenance- 4th year escalation of 16%			47.52	
	Add 12% on Labor Charges=Rs.47,For area weightage (Mangalore City)			5.64	
		Rate		350.16	Rm
28	Maintenance for 4th Year: KSRRB 11-18-17.1 : Providing and fixing sand cast iron trap of 100mm dia, of self cleaning design with screwed down or hinged grating with or without vent arm including cutting and making good the walls and floors, cost of materials, labour, testing, complete as per specifications Specification No. KBS 11.1.10. (PWD SR 2015-16,P.No.86, SI.No.12.89)				
	Basic Rate			830	
	Maintenance- 4th year escalation of 16%			132.8	
	Add 10% For area weightage (Mangalore City)			96.28	
		Rate		1059.08	Nos.
29	Maintenance for 4th Year: KSRRB M800- Cable Duct Across the road KSRRB M800-29.1. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material over top and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum450 mm in case of double and triple row ducts, joints to be made leak proof, invert level of duct to be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98 - 1997 and approved drawings complete as per specifications. Case - I : Single row for one utility service (KPWD SOR 16-17,Item No.24.34,Pg.No.188)				

	Basic Rate		5022	
	Maintenance- 4th year escalation of 16%		803.52	
	Add 10% For area weightage (Mangalore City)		582.55	
		Rate	6408.07	Rm
30	Maintenance for 4th Year: Providing and laying Dia 225mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)			
	Basic Rate		2300	
	Deduct GST @18%		-414	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		78	
	Add 12% For area weightage (Mangalore City)		9.36	
	Sub Total		1973.36	
	Maintenance- 4th year escalation of 16%		315.74	
		Rate	2289.10	Rm
31	Maintenance for 4th Year: Providing and laying Dia 160mm HDPE Power Duct with Silicore Lubricant inner layer with ribs, dimensional ratio of 13.5, Deflection not greater than 5% when exposed to the normal operating temperature 90°C under the over burden soil pressure and other physical properties conforming to ASTM F 2160 and /or NEMA TC7. The expected service life of HDPE pipe conduits and accessories shall not be less than 50 years. (Market Rate)			
	Basic Rate		1215	
	Deduct GST @18%		-218.7	
	Labour Cost for laying and Jointing-KUWSDB, HDPE Pipes, Item No.50, Pg.No.123)		66	
	Add 12% For area weightage (Mangalore City)		7.92	
	Sub Total		1070.22	
	Maintenance- 4th year escalation of 16%		171.24	
		Rate	1241.46	Rm
32	Maintenance for 4th Year: Providing and Fixing Spacers for Power Ducts of size 225 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)			
	Basic Rate		1003	
	O&M 4th year escalation of 16%		160.48	
		Rate	1163.48	Nos.
33	Maintenance for 4th Year: Providing and Fixing Spacers for Power Ducts of size 160 mm, to be placed at an interval of 1.5 meter. Spacers shall be made of ABS raw material. (Market rate)			
	Basic Rate		1947	
	Maintenance- 4th year escalation of 16%		311.52	
		Rate	2258.52	Nos.
34	Maintenance for 4th Year: Supplying 7-way 40mm HDPE pipe Multi-way Duct Silicore Lubricant inner layer for ICT fibre cables conforming to ASTM F 2160 and /or equivalent Indian standard and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and jointing of pipe etc. Complete. (Market Rate)			
	Basic Rate		685	

	Labour Cost for laying and Jointing-KUWSDB,HDPE Pipes,Item No.50,Pg.No.123)		36	
	Add 12% For area weightage (Mangalore City)		4.32	
	Sub Total		725.32	
	Maintenance- 4th year escalation of 16%		116.05	
		Rate	841.37	Rm
35	Maintenance for 4th Year: Providing and laying heavy duty cobble stones 60mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.6)			
	Basic rate		1056.00	
	Maintenance- 4th year escalation of 16%		168.96	
	Add 10% For area weightage (Mangalore City)		122.5	
		Rate	1347.46	Sqm
36	Maintenance for 4th Year: Providing and laying heavy duty Tactile Tiles (Direction and Stop tiles-300 x 300 mm) 60mm thick and Yellow in colour , using cement and course sand for manufacture of blocks of approved size, shape with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.12		912.00	
	Maintenance- 4th year escalation of 16%		145.92	
		Rate	1057.92	Sqm
37	Maintenance for 4th Year: Providing and laying heavy duty cobble stones 75mm thick, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 30mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. (Page No 101,SI No : 14.7)			
	Basic rate		1114	
	Maintenance- 4th year escalation of 16%		178.24	
	Add 10% For area weightage (Mangalore City)		129.22	
		Rate	1421.46	Nos.
38	Maintenance for 4th Year: KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10 complete in all respects complete as per specifications.. MORTH Specification No. 507 -using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (50 mm to 75 mm) with 4.5 % VG-30 Bitumen(KPWD 16-17,S.I.No.21.17.1,Page No.163)			
	Basic rate		7839	
	Maintenance- 4th year escalation of 16%		1254.24	
	Add 10% For area weightage (Mangalore City)		909.32	
		Rate	10002.56	Cum

39	Maintenance for 4th Year: KSRRB M500-19. Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-40 Bitumen				
	Basic rate			8761	
	Maintenance- 4th year escalation of 16%			1401.76	
	Add 10% For area weightage (Mangalore City)			1016.28	
			Rate	11179.04	Cum
40	Maintenance for 4th Year: KSRRB M800 Road markers / Road stud KSRRB M800-35. Providing and fixing of road stud 100x 100 mm, diecast in aluminium, resistant to corrosive effect of salt and grit, fitted with lens reflectors, 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 BS: 873 part 4:1973 complete as per specifications				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.12			289.00	
	Maintenance- 4th year escalation of 16%			46.24	
			Rate	335.24	Sqm
41	Maintenance for 4th Year: Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:Providing and laying of hot applied thermoplastic compound 2.5mm thick including reflectorising glass beads at 250 gms and 2 ltr of primer per sqm area,thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level,uniform and free from streak and holes complete as per specifications.MORTH specification No.803 (Page No 192,SI No : 24.57)				
	Basic Rate			429	
	Maintenance- 4th year escalation of 16%			68.64	
	Add 10% For area weightage (Mangalore City)			49.76	
			Rate	547.40	Sqm
42	Maintenance for 4th Year: Operation and Maintenance for eToilets Stainless Steel Public Model as specified in Road and Other works BOQ Item No.45.				
	Baisc rate			61200	
	Maintenance- 4th year escalation of 16%			9792	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.1		Rate	70992	Nos.
43	Maintenance for 4th Year: Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.13			4500.00	
	O&M 4th year escalation of 16%			720	
			Rate	5220	Nos.
44	Maintenance for 4th Year: Providing and fixing of railing as detail design in MS HOLLOW SECTION and bars (shop drawing to be approved),with vertical support of 0.9m @2.2mc/c , all complete to the satisfaction of the Landscape architect.(Non SOR Item)				
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.26			100000.00	

	Maintenance- 4th year escalation of 16%		16000	
		Rate	116000	MT
45	Maintenance for 4th Year: Excavation and removal of silt and silt mixed with sand in slussy condition from canal bed including disposing off the same in spoil bank or on the canal embankment in layers as directed etc., complete with lead upto 50 m and all lifts. For Desilting of drains and grit chambers including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic Rate		179.00	
	Maintenance- 4th year escalation of 16%		28.64	
		Rate	207.64	Nos.
46	Maintenance for 4th Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Earth			
	Earth	2.0x1.28x10km		
	Basic rate		25.60	
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00	
	Sub Total-1		82.60	
	Add 10% For area weightage (Mangalore City)		8.26	
	Sub Total-2		90.86	
	Maintenance- 4th year escalation of 16%		14.54	
		Rate	105.40	Cum
47	Maintenance for 4th Year: Extra Lead for Disposing off unserviceable materials upto 10 Km beyond initial Lead Item No 17.4 KSRRB M100-4.1-Debris			
	Debris	2.0x1.30x10Km		
	Basic rate		26.00	
	Add Loading and unloading charges(Item No 17.1 KSRRB M100-1)		57.00	
	Sub Total-1		83.00	
	Add 10% For area weightage (Mangalore City)		8.3	
	Sub Total-2		91.30	
	Maintenance- 4th year escalation of 16%		14.61	
		Rate	105.91	Cum
	Lighting Poles			
48	Maintenance for 4th Year: Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. as required (Delhi analysis of rates E & M 2016, item 12.42, pg 395))			
	Basic Rate		1,295	
	Maintenance- 4th year escalation of 16%		207.2	
		Rate	1502.2	Nos.
49	Maintenance for 4th Year: Lighting Pole, 9 m Fabrication, supply and erection of 9 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, including suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.7)			

	Basic rate		17118	
	Maintenance- 4th year escalation of 16%		2738.88	
		Rate	19,856.88	Nos.
50	Maintenance for 4th Year: Lighting Pole, 7 m Fabrication, suppl and erection of 7 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with oor opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 m pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 155 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No. 5.14.5)			
	Basic rate		12420	
	Maintenance- 4th year escalation of 16%		1987.2	
		Rate	14,407.20	Nos.
51	Maintenance for 4th Year: Lighting Pole, 4 m Fabrication, supply and erection of 4 meters long hot dip Galvanised Octagonal pole with BSE 10025 grade S 355 JO steel plate for shaft, IS 2062 for base plate with door opening arrangement, icluding suitable boards, bakelite sheet and MCBs as per IS specifications suitable for wind speed of 47 m/sec for 5 4 pole in single section and single joint welded as per IS 9595/IS 10178 AWG having dimensions bottom 130 mm dia, top 70 mm with 3 mm thick, suitable base plate and 4 nos. of long J bolts along with template and the pole shall be hot dip galvanized in single dipping with not less than 65 micron as per ASTM - A123 and 153 etc., (excluding foundation) as per drawing appended (Ref Electrical SOR SI No.5.14.2)			
	Basic rate		7398	
	Maintenance- 4th year escalation of 16%		1183.68	
		Rate	8,581.68	Nos.
52	Maintenance for 4th Year: Supplying and fixing of hot dip Galvinized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Double Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.5)			
	Basic rate		3540	
	Maintenance- 4th year escalation of 16%		566.4	
		Rate	4,106.40	Nos.
53	Maintenance for 4th Year: Supplying and fixing of hot dip Galvinized M.S.bracket Suitable for outdoor luminaries and mounted on Octagonal pole using necessary bolts,nuts, etc. complete Single Cross arm - 1500 mm (Ref Electrical SOR SI No.5.18.2)			
	Basic rate		2400	
	O&M 4th year escalation of 16%		384	
		Rate	2,784	Nos.
54	Maintenance for 4th Year: Painting of Existing street light pole after scrapping the old paint and painted with suitable colour enamel including coping/footing of the pole.-8mtr and above street light pole (Ref Electrical SOR SI No.16.28.3)			
	Basic rate		620	
	Maintenance- 4th year escalation of 16%		99.2	
		Rate	719	Nos.
	Outdoor Box and Switch Gear			
55	Maintenance for 4th Year: Supply, installation, testing and commissioning of outdoor junction box for mounting MCB/Contactors with all required accessories and componenets			
	Price list (Considering 30% discount , 18% GST & 10% profit)		11782.92	

	Maintenance- 3rd year escalation of 12%		1413.95	
		Rate	13,197	Nos.
56	Maintenance for 4th Year: Supply and fixing of miniature circuit breaker on existing board using necessary fixing material and 'C' type curve, indicator ON/OFF, energy cross-3 with short circuit breaking capacity of 10 KA complete wiring as required conforming to IEC 60898 5- 32A TPN Electrical SOR- 6.16.5)			
	Basic rate		1547	
	Maintenance- 3rd year escalation of 12%		185.64	
		Rate	1,733	Nos.
	LT Cable			
57	Maintenance for 4th Year: Supplying of 1.1 kV LT cable having aluminium conductor PVC insulated, extruded inner sheathed, galvanised, steel strips (except 2C x 10 sq. mm wire armoured) as per IS-3975:1990 and extruded PVC outer sheathed armoured cable as per IS - 1554 Part 1:1988 & conforming to GTP of GROUP B 4 Core x16 Sq.mm PVC Aluminium Conductor, (Ref Electrical SOR SI No.7.5,7.5.4)			
	Basic rate		117	
	Maintenance- 4th year escalation of 16%		18.72	
		Rate	135.72	Rm
58	Maintenance for 4th Year: Supply and drawing flexible multicore cable with electrolyte grade flexible copper with low conductor conforming to Table 3 Class 5 of IS:8130-1984 and vargin PVC insulation and sheathed suitable for working voltage up to 1100 V as per IS-694:1990 and conforming to GTP of Group A. 3C x 2.5 sq. mm (Ref. Electrical SOR 2.8.8)			
	Basic rate		81.6	
	Maintenance- 4th year escalation of 16%		13.06	
		Rate	94.66	Rm
59	Maintenance for 4th Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor (Ref Electrical SOR SI No.7.21,7.21.6)			
	Basic rate		11.31	
	Maintenance- 4th year escalation of 16%		1.81	
		Rate	13.12	Nos.
60	Maintenance for 4th Year: Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor (Ref Electrical SOR SI No.7.21.2)			
	Basic rate		3.12	
	Maintenance- 4th year escalation of 16%		0.5	
		Rate	3.62	Nos.
61	Maintenance for 4th Year: Chemical Earthing for grounding, conduits, IC cut outs and other equipments on the meter board by using copper /SS rod with earth enhancing backfill compound which is non corrosive, thermally, conductive, potential, to permissible, limits, superior, fault, conductive capacity, non toxic, weather resistance and capable of achieving ohmic value less than one ohm (Ref Electrical SOR Pg.No.64, SI No.7.23.6)			
	Basic rate		5500	
	Maintenance- 4th year escalation of 16%		880	

		Rate	6380	Kit
62	Maintenance for 4th Year: Supply and running GI conductor for grounding and (along with other wires in conduits system of wiring) using necessary suitable size clamps, nails, guttas/spacers etc-8 SWG (Ref Electrical SOR SI No.7.22.3)			
	Basic rate		19.5	
	Maintenance- 4th year escalation of 16%		3.12	
		Rate	22.62	Rmt
63	Maintenance for 4th Year: Supplying and stacking of good earth at site including royalty and carriage upto 5 k.m. lead complete (earth measured in stacks will be reduced by 20% for payment). (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.27		140.00	
	Maintenance- 4th year escalation of 16%		22.4	
		Rate	162.40	Cum
64	Maintenance for 4th Year: KSRRB M300-Supply at site of work well decayed farm yard manure KSRRB M300-11. Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stacking complete as per specifications. MORTH Specification No. 308.2(Page No.152,SI.No.19.90)			
	Basic rate		204	
	Maintenance- 4th year escalation of 16%		32.64	
	Add 10% For area weightage		23.66	
		Rate	260.30	Cum
65	Maintenance for 4th Year: KSRRB M300-Horticulture KSRRB M300-Spreading of sludge farm yard manure or/ and good earth KSRRB M300-1. Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm yard manure or/and good earth to be paid for separately) complete as per specifications. MORTH Specification No. 307 (KPWD SR 16-17,Page No.150,SI No.19.77)			
	Basic rate		103	
	Maintenance- 4th year escalation of 16%		16.48	
	Add 10% For area wightage		11.95	
		Rate	131.43	Cum
66	Maintenance for 4th Year: Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.28		23.91	
	Maintenance- 4th year escalation of 16%		3.83	
		Rate	27.74	Cum
67	Maintenance for 4th Year: Maintenance of lawns or Turfing of slopes (rough grassing) for a period of one year including watering etc complete including cost of all materials, scaffolding HOM of machineries with all lead and lifts, labour charges including implementation of Environmental and Social Safeguards & as per design, drawing, technical specifications and directions of Engineer-in-charge.			
	Basic rate		103	
	Maintenance- 4th year escalation of 16%		16.48	
	Add 10% For area wightage		11.95	
		Rate	131.43	Sqm
	TURF			

68	Maintenance for 4th Year: ZOYSIA JAPONICA (MAT) (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.32		156.80	
	Maintenance- 4th year escalation of 16%		25.09	
		Rate	181.89	Sqm
	IRRIGATION			
69	Maintenance for 4th Year: Watering with tanker to landscape area and plants for one year			
	Water Tanker =52 Rs/ Hour,One Year Cost=92 days x 3 hrs x 61rs/hr (365days-90 days of manson=275 days/3 days=92 days,consider watering at every 3 days)		16836	
	Mazdoor = 0.5 days x 446.20		20525.2	
	Add 10% For area wightage		2052.52	
	Maintenance- 4th year escalation of 16%		5977.79	
		Rate	45391.51	Year
70	Maintenance for 4th Year: supply and fixing of irrigation lines such that all the green areas and plants are adequately watered; by means of drip irrigation for trees , sub surface for shrubs and lawn areas / ground covers and pop up sprinklers for lawn areas. (Equipment make - Rainbird or equivalent) All material used should be comply to BSI code. All the necessary value and pump required for complete commissioning to be installed. (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.34		560.00	
	Maintenance- 4th year escalation of 16%		89.6	
		Rate	649.60	Sqm

**Assistant Engineer
MSCL Mangaluru**

**Executive Engineer
MSCL Mangaluru**

**General Manager Technical
MSCL Mangaluru**