

**Project Name: Manglore Smart City  
Grand Summary for Maidan Road**

<b>Sl. No.</b>	<b>Description</b>	<b>Cost In INR</b>
1	Road and Junction Pavement and Bus Shelter	34092488
2	Footpath and Parking	12172584
3	Storm Water Drainage	1733760
4	Water Supply	1125250
5	Street Lighting	5355428
6	Hardscape and Landscape	3962490
	<b>Sub Total</b>	<b>5,84,42,000</b>
	Add 3% Contengency	17,53,260
	Add Amount for Taxes as applicable	70,13,040
	Tender Premium @ 10%	58,44,200
	For Periodic maintenance of lawn,painting etc. complete & Misc.Work	25,47,500
	<b>Grand Total</b>	<b>7,56,00,000</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Managing Director  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**  
**3.1 BOQ of Road and Junction Pavement for Maidan Road**

Sl.No.	Specification	Unit	Qty.	Rate	Amount	Remarks
1.00	KSRRB M200-14.2 Dismantling brick/Tile work /Paver Block B.in Cement Mortar retaining walls and other structure comprising of masonry cement concrete,wood work, Including T and P.sorting and dismatled material,disposal of unserviceable material and stacking the servicable material with all lifts complete as per specification. (Page No 137,SI No : 18.23)	Cum	288.72	291.48	84,156	
2.00	KSRRB M200-15.1. 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. iii) Dismantling Stone Masonry. A. Rubble Stone masonry in lime mortar. MORTH Specification No. 202. KSRRB M200-17.1-do-v) Dismantling Steel work in all types of sections upto a heigh of 5m above plinth level including cutting of dismembering (Page No 138,SI No : 18.33)	MT	9.87	1346.24	13,292	
3.00	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)Lime/cement concrete by mechanical means. (Page No 137,SI No : 18.22)	Cum	46.16	200.48	9,254	
4.00	KSRRB M800-Portable barricade in construction zone KSEEB M800-43.Installation of a steel portable barricade with horizontal rail 300mm wide.2.5m in length fitted on a 'A' frame made with 45x45x5mm angle iron section,1.5m height horizontal rail painted(2 coats) with yellow and white stripes,150mm in width at an angle of 45 degree,'A' Frame painted with 2 Coats of yellow paint,complete as per IRC:SP:55-2001 Complete as per specifications. (Page No 190,SI No : 24.44)	Each	120.00	2656.64	3,18,797	
5.00	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. (Page No.139,S.I.No.18.49)	Rmt	37.68	11.20	422	
6.00	Removing existing Sculpture from Junction Round about and preserving at safe place and to be installed after completion of the work as directed by engineer incharge (If any damages the reponsibility will be at the cost of contractor) (Non SOR Item)	Nos.	1.00	100000.00	1,00,000	
7.00	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(Including transporting charges,loading and unloading for lead 5km) (Page No 143,SI No : 19.14)	Cum	1416.1	69.44	98,334	
8.00	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 (Page No.149,SI No.19.64)	Sqm	2406.00	5.60	13,474	
9.00	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 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)	Cum	59.89	969.08	58,042	

Sl.No.	Specification	Unit	Qty.	Rate	Amount	Remarks
10.00	KSRB 4-1-6 Providing and laying in position plain cement concrete of Mix 1:2:4 with cement @240Kgs,with 20mm and down size graded granite metal coarse aggregates @0.878 cum and fine aggregate @0.530 cum machine mixed,concrete laid in layers not exceeding 15cms. thick,well compacted in foundation,plinth and cills,including cost of all materials,labour,HOM of machinery ,curing complete as per specification No.KBS4.1,4.2 (Page No 12,SI No : 4.6)	Cum	47.67	5886.56	2,80,590	
11.00	KSRB 2.8 :Providing and Filling in Foundation with Granite /Trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering including cost of all materials and labour with all leads and lift.complete as per specifications. (Page No 6,SI No : 2.15)	Cum	74.14	2367.68	1,75,549	
12.00	KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @240Kgs,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,pedastals,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	206.92	6760.16	13,98,812	
13.00	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 (Page No 15,SI No : 4.28)	Sqm	313.20	258.72	81,031	
14.00	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 machinery complete as per specifications.Specification No. KBS4.6.3. do with TMT bars Fe500	MT	13.10	79156.00	10,36,557	
15.00	KSRRB M400-6.2.Construction of granular sub base by providing close graded crushed stone aggregate of granite/trap/basalt material,spreading in uniform layers with motor on prepared surface,mixing by mix in place methode by rotavator at OMC, and compacting with vibratory power roller to achieve the desired density,complete as per specification.B.By <b>Mix in Place Methode.</b> Close graded granular sub base material as per 400-1 <b>For Grading II material</b> (Page No 155,SI No : 20.5.2)	Cum	423.54	1576.96	6,67,909	
16.00	KSRRB M600-1.Construction of <b>dry lean cement concrete</b> mix M15 with 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 vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)	Cum	282.36	4074.08	11,50,364	

Sl.No.	Specification	Unit	Qty.	Rate	Amount	Remarks
17.00	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 slip 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,sealant primer,joints sealant,debonding strip,dowel bars at 4.5m intervals,tie rod,admxtures as approved,curing compound,finishing to lines and grades as per drawing complete as per sprcifications MORTH specification No.602. do with <b>M40</b> (420Kg per cum Cement,C.A,0.67 cum F.A.044Cum (Page No 176,SI No : 22.2.2)	Cum	847.08	7663.04	64,91,244	
18.00	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 (Non SOR Item)	Rmt	4243.53	129.00	5,47,415	
19.00	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	4243.53	385.28	16,34,947	
20.00	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 (Non SOR Item,RA Attached)	Nos	574	1579.00	9,06,346	
21.00	KSSRRB 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. <b>900MM Equilateral Triangle-TYPE XI</b>	No.	17.00	5807.20	98,722	

Sl.No.	Specification	Unit	Qty.	Rate	Amount	Remarks
22.00	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 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	Nos.	6.00	8471.68	50,830	
23.00	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 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	Nos.	2.00	5299.84	10,600	
24.00	<b>Road Marking with hot applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:</b> 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	919.38	724.64	6,66,221	
25.00	KSRRB 800-1.Painting two coats after filling the surface with synthetic enamel paint in approved shades on new palstered concrete surfaces,with materials,labour complete as per specification.for Kerb Stone (Page No 182,SI No : 24.1)	Sqm	124.57	67.20	8,371	

Sl.No.	Specification	Unit	Qty.	Rate	Amount	Remarks
26.00	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 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.	8.00	1500000.00	1,20,00,000	
27.00	KSRB 14.6-1:Providing and laying heavy duty cobble stones 60mm thick interlocking pavers,using cement and coarse sand for manufacture of blocks of approved size,shapes and colour 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 specification (Page No 101.SI No : 14.6)	Sqm	172.50	1021.44	1,76,198	
28.00	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 Acess 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	Nos	6.00	575000.00	34,50,000	
29.00	Providing and Installing Waste water treatment and recycling unit for each E-Toilet: Bio digester tank suitable for maintenance free processing the soil waste with 2000 litre capacity, made of FRP. The bio digester shall be of anaerobic type with compartments followed by disinfection. The compartments shall have polygrass mats for protection of bacteria on side partition walls. The bio digester shall be fitted with ball valve or bypass arrangement. Dosed with approved microbial solution at recommended interval (NON SOR Item)	Nos.	6.00	150000.00	9,00,000	

Sl.No.	Specification	Unit	Qty.	Rate	Amount	Remarks
30.00	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.	10.00	18691.00	1,86,910	
31.00	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.	7.00	52850.00	3,69,950	
32.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (blow) as per Specification (NON SOR Item)	Nos.	17.00	11082.00	1,88,394	
33.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Amber (blow) as per Specification (NON SOR Item)	Nos.	17.00	11082.00	1,88,394	
34.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (arrow/U- Turn) EN-12368 as per Specification (NON SOR Item)	Nos.	17.00	13973.00	2,37,541	
35.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (ped. standing) EN-12368 as per Specification (NON SOR Item)	Nos.	16.00	11082.00	1,77,312	
36.00	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (ped.walking) EN-12368 as per Specification (NON SOR Item)	Nos.	16.00	13973.00	2,23,568	
37.00	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.	15.00	6196.00	92,940	
		<b>Total</b>			<b>3,40,92,488</b>	

EXECUTIVE ENGINEER  
MSCL MANGALURU

SUPERINTENDING ENGINEER  
MSCL MANGALURU

**Name of the Work :- Mangalore Smart City**

**3.1.1 Measurement Sheet of Road and Junction Pavement for Maidan Road**

Sl. No.	Description	Unit	No's	L	B	H	Qty.
<b>Road and Junction Pavment and Other Works</b>							
1	KSRRB M200-14.2 Dismantling brick/Tile work /Paver Block B.in Cement Mortar retaining walls and other structure comprising of masonarycement concrete,wood work, Including T and P.sorting and dismatled material,disposal of unserviceable material and stacking the servicable material with all lifts complete as per specification. (Page No 137,SI No : 18.23)						
<b>a</b>	<b>Maidan Side-Paver Block on Carriageway(LHS)</b>						
1	Ch. 0.0 to 100.0	Cum	1	100	2.93	0.12	35.16
2	Ch. 100. to 180.00	Cum	1	80	2.565	0.12	24.62
3	Ch.180.0 to 190.0	Cum	1	10	3.85	0.12	4.62
4	Ch.190.0 to 445.22	Cum	1	255.22	2.6	0.12	79.63
<b>b</b>	<b>Clock tower Junction Area-(Paver Block area)</b>	Cum					0.00
1	Trapezoidal area	Cum	1	28.055	39.4	0.12	132.64
2	Ded. Triangular portion	Cum	-0.5	14.115	2.17	0.12	-1.84
3	Ded.Circle-Dia 6.0m	Cum	-1	3.14	9	0.12	-3.39
4	Add triangular area -1	Cum	0.5	26.03	8.84	0.12	13.81
	Ded. Area	Cum	-1		57	0.12	-6.84
5	Add triangular area -2	Cum	0.5	31.49	11.73	0.12	22.16
	Ded. Area	Cum	-1		98.81	0.12	-11.86
		<b>Cum</b>				<b>Total</b>	<b>288.72</b>
2	KSRRB M200-15.1. 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. iii) Dismantling Stone Masonry. A. Rubble Stone masonry in lime mortar. MORTH Specification No. 202. KSRRB M200-17.1-do-v) Dismantaling Steel work in all types of sections upto a heigh of 5m above plinth level including cutting of dismembering						
	<b>Total Bus stop =9 Nos.</b>				Thk.		
1	Vertical Support-Dia 150mm Pipe	Sqm	6	0.471	0.0032	5	0.045
2	Truss( 2 nos. per Bus stop)						0.000
3	Bottom Chord - Dia.50mm Hollow Pipe	Sqm	2	7.5	0.002	0.157	0.005
4	Top Chord -Dia 50mm Hollow Pipe	Sqm	4	4	0.002	0.157	0.005
5	Vertical member	Sqm	2	1	0.002	0.157	0.001
6	Web Longer to shorter						0.000
a	Web-1	Sqm	4	1.5	0.002	0.157	0.002
b	Web-2	Sqm	4	1	0.002	0.157	0.001
c	Web-3	Sqm	4	0.8	0.002	0.157	0.001
7	MS sheet at back side of Truss	Sqm	0.5	7.5	0.001	1	0.004
8	MS Grill at front side	Sqm	0.25	7.5	0.002	1	0.004
9	Benche-4 Nos at each bus stop						0.000
10	Verical support	Sqm	8	0.157	0.002	1	0.003
11	Horizontal Support	Sqm	4	0.157	0.002	1.2	0.002
12	Side Advertisment Board-2 nos each bustop	Sqm	4	1.2	0.002	3.5	0.034
		Sqm				Total	<b>0.10</b>
		KG					823.01
		MT				<b>Sub Total A</b>	<b>0.82</b>
13	<b>Purlin</b>						
a	ISA 50 x 50 x 4 ( 10 nos. in each bus stop )	Rm	10	2.5			25.000
b	Granite support -ISA 50 x 50 x 4	Rm	4	3.9			15.600
	<b>Total</b>	Rm					<b>40.60</b>
		Kg/ Rm					3.00
		Kg/ Rm					121.80
		MT				<b>Sub Total B</b>	<b>0.12</b>
	MS Roofing Sheet @0.4 mm thk	Sqm	1	7		2.5	17.500
		Kg/Sqm					3.00
		Kg					52.50
		MT				<b>Sub Total C</b>	<b>0.05</b>
	<b>Total Weight (A+B+C)</b>	<b>MT</b>					<b>0.997</b>
	<b>Consider 10% Extra for Misc Items</b>	MT				Total	1.10
			Nos.				
		<b>MT</b>	<b>9</b>	<b>Total Qty for 9 Bus Stop</b>			<b>9.87</b>



Sl. No.	Description	Unit	No's	L	B	H	Qty.
3	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) Lime/cement concrete by mechanical means. (Page No 137 SI No - 18-22)						
	A B Shetty Circle Kerb Stone	Cum	1	3.14	49.00	0.30	46.16
4	KSRRB M800-Portable barricade in construction zone KSEEB M800-43. Installation of a steel portable barricade with horizontal rail 300mm wide, 2.5m in length fitted on a 'A' frame made with 45x45x5mm angle iron section, 1.5m height horizontal rail painted (2 coats) with yellow and white stripes, 150mm in width at an angle of 45 degree, 'A' Frame painted with 2 Coats of yellow paint, complete as per IRC:SP:55-2001 Complete as per specifications. (Page No 190 SI No - 24-44)	Each	120				120.00
5	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)						
	Kerb Stone						
	Clock tower Junction @ Ch.0.00						
	Circle Dia.6m	Rmt	1	18.84			18.84
	A B shetty Junction @ Ch. 520.00						
	Circle Dia.6m	Rmt	1	18.84			18.84
		Rmt				Total	37.68
6	Removing existing Sculpture from Junction Round about and preserving at safe place and to be installed after completion of the work as directed by engineer incharge (If any damages the responsibility will be at the cost of contractor)	Nos.	1				1.00
7	KSRRB M300-14. Excavation for roadwork in all types of soil with hydraulic excavator of 0.9 bucket capacity including cutting and loading in tipplers, 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(Including transporting charges, loading and unloading for lead 5km) (Page No 143 SI No - 19-14)						
	For Concrete Road						
a	Maidan Side-Paver Block on Carriageway(LHS)						
1	Ch. 0.0 to 100.0	Cum	1	100	2.93	0.43	125.99
2	Ch. 100. to 180.00	Cum	1	80	2.565	0.43	88.24
3	Ch.180.0 to 190.0	Cum	1	10	3.85	0.43	16.56
4	Ch.190.0 to 445.22	Cum	1	255.22	2.6	0.43	285.34
b	Clock tower Junction Area-(Paver Block area)						0.00
1	Trapezoidal area	Cum	1	28.055	39.4	0.43	475.31
2	Ded. Triangular portion	Cum	-0.5	14.115	2.17	0.43	-6.59
3	Ded.Circle area	Cum	-1	3.14	9	0.43	-12.15
4	Add triangular area -1	Cum	0.5	26.03	8.84	0.43	49.47
	Ded. Area	Cum	-1		57	0.43	-24.51
5	Add triangular area -2	Cum	0.5	31.49	11.73	0.43	79.42
	Ded. Area	Cum	-1		98.81	0.43	-42.49
							0.00
b	For Bus Pedstal	Cum	8	14	2.5	0.50	140.00
c	Bus stop foundation	Cum	32	1.5	1.5	1.30	93.60
d	AB Shetty Junction	Cum	1	3.14	36	0.50	56.52
e	Clock tower	Cum	1	3.14	36	0.50	56.52
f	Signal Pole RCC Pedstal at AB shetty Circle	Cum	16	1.5	1.50	0.50	18.00
g	Signal Pole RCC Pedstal at Hampankatta Circle	Cum	15	1.5	1.50	0.50	16.88
		Cum				Total	1416.09
8	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 (Page No.149,SI No.19.64)	Sqm					
	For Concrete Road						
a	Maidan Side-Paver Block on Carriageway(LHS)						
1	Ch. 0.0 to 100.0		1	100	2.93		293.00

Sl. No.	Description	Unit	No's	L	B	H	Qty.
2	Ch. 100. to 180.00		1	80	2.565		205.20
3	Ch.180.0 to 190.0		1	10	3.85		38.50
4	Ch.190.0 to 445.22		1	255.22	2.6		663.57
<b>b</b>	<b>Clock tower Junction Area-(Paver Block area)</b>						
1	Trapezoidal area		1	28.055	39.4		1105.37
2	Ded. Triangular portion		-0.5	14.115	2.17		-15.31
3	Ded.Circle area		-1	3.14	9		-28.26
4	Add triangular area -1		0.5	26.03	8.84		115.05
	Ded. Area		-1		57		-57.00
5	Add triangular area -2		0.5	31.49	11.73		184.69
	Ded. Area		-1		98.81		-98.81
		<b>Sqm</b>					<b>2406.00</b>
9	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)						
<b>a</b>	<b>At Junction-Clock Tower</b>						
i	Round About-Kerb Stone	Cum	1	314	0.365	0.3	34.38
<b>b</b>	<b>At Junction-A B Shetty</b>						
i	Round About-Kerb Stone	Cum	1	21.98	0.365	0.3	2.41
<b>c</b>	<b>Junction -1 Clock Tower</b>						
ii	Maidan road	Cum	1	45	0.365	0.3	4.93
ii	Bibi alabi road	Cum	1	41	0.365	0.3	4.49
iii	Maidan 1st cross road	Cum	1	22	0.365	0.3	2.41
iv	Balmata Road	Cum	1	31	0.365	0.3	3.39
<b>d</b>	<b>Junction -2 A B Shetty</b>						
i	Midan road	Cum	1	21	0.365	0.3	2.30
ii	Old kent road	Cum	1	0	0.365	0.3	0.00
iii	Mangladevi road	Cum	1	10	0.365	0.3	1.10
iv	Midan Road (Towards Hamilton Circle)	Cum	1	41	0.365	0.3	4.49
		<b>Cum</b>				<b>Total</b>	<b>59.89</b>
10	KSRB 4-1-6 Providing and laying in position plain cement concrete of Mix 1:2:4 with cement @240Kgs,with 20mm and down size graded granite metal coarse aggregates @0.878 cum and fine aggregate @0.530 cum machine mixed,concrete laid in layers not exceeding 15cms. thick,well compacted in foundation,plinth and cills,including cost of all materials,labour,HOM of machinery ,curing complete as per specification No.KBS4.1,4.2 (Page No 12 SI No : 4.6)						
	<b>Road</b>						
	For Bus Pedstal	Cum	8	14	2.50	0.10	28.00
	Rcc foundation	Cum	32	1.2	1.20	0.10	4.61
	Signal Pole RCC Pedstal at AB shetty Circle	Cum	16	1.2	1.20	0.10	2.30
	Signal Pole RCC Pedstal at Clock tower Circle	Cum	15	1.2	1.20	0.10	2.16
		<b>Cum</b>				<b>Total A=</b>	<b>37.07</b>
<b>a</b>	<b>At Junction-Clock Tower</b>						
i	Round About -Base of Kerb	Cum	1	12.56	0.365	0.1	0.46
ii	Round About -Side of Kerb	Cum	2	12.56	0.135	0.175	0.59
<b>b</b>	<b>At Junction-A B Shetty</b>						
i	Round About	Cum	1	21.98	0.365	0.1	0.80
ii	Round About -Side of Kerb	Cum	2	21.98	0.135	0.175	1.04
<b>c</b>	<b>At Junction-Clock Tower</b>						
i	Maidan road	Cum	1	45	0.365	0.1	1.64
ii	Bibi alabi road	Cum	1	41	0.365	0.1	1.50
iii	Maidan 1st cross road	Cum	1	22	0.365	0.1	0.80
iv	Balmata Road	Cum	1	31	0.365	0.1	1.13
<b>d</b>	<b>At Junction-A B Shetty</b>						
i	Midan road	Cum	1	21	0.365	0.1	0.77
ii	Old kent road	Cum	1	0	0.365	0.1	0.00
iii	Mangladevi road	Cum	1	10	0.365	0.1	0.37
iv	Midan Road (Towards Hamilton Circle)	Cum	1	41	0.365	0.1	1.50
		<b>Cum</b>		<b>280.08</b>		<b>Total B=</b>	<b>10.59</b>
		<b>Cum</b>			<b>Total Qty.(A+B)</b>		<b>47.67</b>
11	KSRB 2.8 :Providing and Filling in Foundation with Granite /Trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering including cost of all materials and labour with all leads and lift.complete as per specifications. (Page No 6,SI No : 2.15)						
<b>a</b>	<b>Bus stop Pedstal</b>	Cum	8	14	2.50	0.20	56.00
<b>b</b>	<b>Bus Rcc foundation</b>	Cum	32	1.2	1.20	0.20	9.22
<b>e</b>	<b>Signal Pole RCC Pedstal at AB shetty Circle</b>	Cum	16	1.2	1.2	0.20	4.61

Sl. No.	Description	Unit	No's	L	B	H	Qty.
f	Signal Pole RCC Pedstal at clock tower Circle	Cum	15	1.2	1.2	0.20	4.32
		<b>Cum</b>				<b>Total</b>	<b>74.14</b>
12	KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @240Kgs,with 20mm and down size graded granite metal coarse aggregate @ 0.47 cum with super plasticisers @3 liters confirming to IS 9103-1999 reafirmed -2008 at machine mixed,concrete laid in layers not exceeding 15cms thick,vibrated for all works in foundation for footings,pedastals,retaining walls,return walls,walls (any thickness)including attached pilasters,columnspillars,posts,struts,butresses,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)						
	Bus Stop RCC Foundation Base	Cum	32	1.20	1.20	0.20	9.22
	Bus Stop RCC Foundation Column	Cum	32	1.00	1.00	0.70	22.40
	Bus Stop Pedstal	Cum	32	13.70	2.20	0.15	144.67
	Signal Pole RCC Pedstal at AB shetty Circle	Cum					
	Base	Cum	16	1.20	1.20	0.20	4.61
	Column	Cum	16	1.00	1.00	0.70	11.20
	Signal Pole RCC Pedstal at clock tower Circle						
	Base	Cum	15	1.20	1.20	0.20	4.32
	Column	Cum	15	1.00	1.00	0.70	10.50
		<b>Cum</b>				<b>Total</b>	<b>206.92</b>
13	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)						
	Bus Stop RCC Foundation Base	Sqm	128	1.20		0.20	30.72
	Bus Stop RCC Foundation Column	Sqm	128	1.00		0.70	89.60
	Bus Stop Pesdtal	Sqm	32	13.70		0.15	65.76
		Sqm	32	2.20		0.15	10.56
	Signal Pole RCC Pedstal at AB shetty Circle	Sqm					
	Base	Sqm	64	1.20		0.20	15.36
	Column	Sqm	64	1.00		0.70	44.80
	Signal Pole RCC Pedstal at clock towerCircle	Sqm					
	Base	Sqm	60	1.20		0.20	14.40
	Column	Sqm	60	1.00		0.70	42.00
		<b>Sqm</b>				<b>Total</b>	<b>313.20</b>
14	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 adjoing 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				<b>Kg/Cum</b>	<b>Kg</b>	<b>MT</b>
	Footing	MT	1	18.144	80.00	1451.52	1.45
	Column	MT	1	44.1	100.00	4410.00	4.41
	Bus Stand Base	MT	1	144.672	50.00	7233.60	7.23
		<b>MT</b>				<b>Total</b>	<b>13.10</b>
	<b>Concrete Pavement Layer</b>						
15	KSRRB M400-6.2.Construction of granular sub base by providing close graded crushed stone aggregate of granite/trap/basalit material,spreading in uniform layers with motor on prepared surface,mixing by mix in place methode by rotavator at OMC, and compacting with vibratory power roller to achieve the desired density,complete as per specification.B.By Mix in Place Methode. Close graded granular sub base material as per 400-1 For Grading II material (Page No 155,SI No : 20.5.2)						
<b>a</b>	<b>Maidan Side-Paver Block on Carriageway(LHS)</b>						
1	Ch. 0.0 to 100.0	Cum	1	100	2.93	0.15	43.95
2	Ch. 100. to 180.00	Cum	1	80	2.565	0.15	30.78
3	Ch.180.0 to 190.0	Cum	1	10	3.85	0.15	5.78
4	Ch.190.0 to 445.22	Cum	1	255.22	2.6	0.15	99.54
<b>b</b>	<b>Clock Tower Junction Area-(Paver Block area)</b>						
1	Trapezoidal area	Cum	1	28.055	39.4	0.15	165.81
2	Ded. Triangular portion	Cum	-0.5	14.115	2.17	0.15	-2.30
3	Ded.Circle area	Cum	-1	3.14	9	0.15	-4.24
4	Add triangular area -1	Cum	0.5	26.03	8.84	0.15	17.26
	Ded. Area	Cum	-1		57	0.15	-8.55
5	Add triangular area -2	Cum	0.5	31.49	11.73	0.15	27.70

Sl. No.	Description	Unit	No's	L	B	H	Qty.
	Ded. Area	Cum	-1		98.81	0.15	-14.82
6	A B Shetty Circle Area ( Dia 14.m)	Cum	1	3.14	49	0.15	23.08
	Clock Tower Junction with 10m Radius	Cum	1	3.14	100	0.15	47.10
	Ded. New Junction of 4m Radius	Cum	-1	3.14	16	0.15	-7.54
		<b>Cum</b>				<b>Total</b>	<b>423.54</b>
16	KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 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 vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176 SI No : 22 1)						
<b>a</b>	<b>Maidan Side-Paver Block on Carriageway(LHS)</b>						
1	Ch. 0.0 to 100.0	Cum	1	100	2.93	0.10	29.30
2	Ch. 100. to 100.25	Cum	1	80	2.565	0.10	20.52
3	Ch.100.25 to 180.00	Cum	1	10	3.85	0.10	3.85
4	Ch.180.0 to 190.0	Cum	1	255.22	2.6	0.10	66.36
<b>b</b>	<b>Clock Tower Junction Area-(Paver Block area)</b>						
1	Trapezoidal area	Cum	1	28.055	39.4	0.10	110.54
2	Ded. Triangular portion	Cum	-0.5	14.115	2.17	0.10	-1.53
3	Ded.Circle area	Cum	-1	3.14	9	0.10	-2.83
4	Add triangular area -1	Cum	0.5	26.03	8.84	0.10	11.51
	Ded. Area	Cum	-1		57	0.10	-5.70
5	Add triangular area -2	Cum	0.5	31.49	11.73	0.10	18.47
	Ded. Area	Cum	-1		98.81	0.10	-9.88
6	A B Shetty Circle Area ( Dia 14.m)	Cum	1	3.14	49	0.10	15.39
	Clock Tower Junction with of 10m Radius	Cum	1	3.14	100	0.10	31.40
	Ded. New Junction of 4m Radius	Cum	-1	3.14	16	0.10	-5.02
		<b>Cum</b>				<b>Total</b>	<b>282.36</b>
17	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 slip form paver spread,compacted and finished in a continous 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,admixture 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)						
<b>a</b>	<b>Maidan Side-Paver Block on Carriageway(LHS)</b>						
1	Ch. 0.0 to 100.0	Cum	1	100	2.93	0.30	87.90
2	Ch. 100. to 180.00	Cum	1	80	2.565	0.30	61.56
3	Ch.180.0 to 190.0	Cum	1	10	3.85	0.30	11.55
4	Ch.190.0 to 445.22	Cum	1	255.22	2.6	0.30	199.07
<b>b</b>	<b>Clock Tower Junction Area-(Paver Block area)</b>						
1	Trapezoidal area	Cum	1	28.055	39.4	0.30	331.61
2	Ded. Triangular portion	Cum	-0.5	14.115	2.17	0.30	-4.59
3	Ded.Circle area	Cum	-1	3.14	9	0.30	-8.48
4	Add triangular area -1	Cum	0.5	26.03	8.84	0.30	34.52
	Ded. Area	Cum	-1		57	0.30	-17.10
5	Add triangular area -2	Cum	0.5	31.49	11.73	0.30	55.41
	Ded. Area	Cum	-1		98.81	0.30	-29.64
6	A B Shetty Circle Area ( Dia 14.m)	Cum	1	3.14	49	0.30	46.16
	Clock Tower Junction with of 10m Radius	Cum	1	3.14	100	0.30	94.20
	Ded. New Junction of 4m Radius	Cum	-1	3.14	16	0.30	-15.07
		<b>Cum</b>				<b>Total</b>	<b>847.08</b>

Sl. No.	Description	Unit	No's	L	B	H	Qty.
18	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)						
	<b>New Road</b>						
	<b>Maidan Side-New Road (LHS)</b>						
a	Longitudinal Joint Ch.0.00 to 445.00	Rmt	1	445			445.00
b	Joints across road						
	Ch. 0.0 to 100.0	Rmt	22	2.93			64.46
	Ch. 100. to 180.00	Rmt	18	2.565			46.17
	Ch.180.0 to 190.0	Rmt	2	3.85			7.70
	Ch.190.0 to 445.22	Rmt	57	2.6			148.20
	<b>Existing Road (LHS)</b>						
a	Joints across roadCh. 0.00 to 520	Rmt	116	7			812.00
b	Longitudinal Joint Ch. 0.00 to 520	Rmt	1	520			520.00
	<b>Existing Road (RHS)</b>						
a	Longitudinal Joint Ch. 0.00 to 520	Rmt	2	520			1040.00
b	Joints across road Ch. 0.00 to 520	Rmt	116	10			1160.00
		<b>Rmt</b>				<b>Total</b>	<b>4243.53</b>
19	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)						
	Consider Same Qty of Joint Filling	<b>Rmt</b>					<b>4243.53</b>
20	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 (Non SOR Item RA Attached)						
a	<b>At Junction-Clock Tower</b>						
i	Maidan road	Rmt	1	45			45.00
ii	Bibi alabi road	Rmt	1	41			41.00
iii	Maidan 1st cross road	Rmt	0	0			0.00
iv	Balmata Road	Rmt	1	32			32.00
b	<b>At Junction-A B Shetty</b>						
i	Miadan road	Rmt	1	21			21.00
ii	Old kent road	Rmt	1	0			0.00
iii	Mangladevi road	Rmt	1	10			10.00
iv	Miadan Road (Towards Hamilton Circle)	Rmt	1	41			41.00
		<b>Rmt</b>				<b>Sub Total</b>	<b>190.00</b>
b	<b>Kerb Stone-at Junction Roundabout</b>						
a	<b>At Junction-Clock Tower</b>						
i	Round About	Rmt	3.14	12.56			39.44
		<b>Rmt</b>				<b>Sub Total 2</b>	<b>39.44</b>
		<b>Rmt</b>				<b>Total 1+2</b>	<b>229.44</b>
		<b>No's</b>					<b>574</b>
	<b>Sinages</b>						

Sl. No.	Description	Unit	No's	L	B	H	Qty.
21	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.	Nos.	17				17.00
22	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.	Nos.	6				6.00
23	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.	Nos.	2				2.00
24	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)			Area			
	<b>Roads</b>						
a	Arrows 1	Sqm	125	0.76			95.00
b	Arrows 2	Sqm	2	0.95			1.90

Sl. No.	Description	Unit	No's	L	B	H	Qty.
c	Arrows 3	Sqm	1	0.95			0.95
d	Arrows 4	Sqm	1	0.69			0.69
				Length	Width		
e	Dashed lines	Sqm	4	350	0.10		140.00
f	Lines on road Edge	Sqm	4	500	0.15		300.00
		<b>Sqm</b>			<b>Sub Total A</b>		<b>538.54</b>
a	Arrow	Sqm	9	0.76			6.84
b	Pedstrian Crossing	Sqm	1	374			374.00
		<b>Sqm</b>				<b>Sub Total B</b>	<b>380.84</b>
		<b>Sqm</b>				<b>Total (A+B)</b>	<b>919.38</b>
25	KSRRB 800-1.Painting two coats after filling the surface with synthetic enamel paint in approved shades on new palstered concrete surfaces,with materials,labour complete as per specification.for Kerb Stone (Page No 182,Sl No : 24.1)						
a	<b>At Junction-Clock Tower</b>						
i	Maidan road	Sqm	1	45.00		0.62	27.68
ii	Bibi alabi road	Sqm	1	41.00		0.62	25.22
iii	Maidan 1st cross road	Sqm	0	0.00		0.62	0.00
iv	Balmata Road	Sqm	1	32.00		0.62	19.68
b	<b>At Junction-A B Shetty</b>						
i	Maidan road	Sqm	1	21.00		0.62	12.92
ii	Old kent road						
iii	Mangladevi road	Sqm	1	10.00		0.62	6.15
iv	Miadan Road (Towards Hamilton Circle)	Sqm	1	41.00		0.62	25.22
b	<b>Kerb Stone-at Junction Roundabout</b>						
a	<b>At Junction-Clock Tower</b>						
i	Round About	Sqm	1	12.56		0.62	7.72
		<b>Sqm</b>				<b>Total</b>	<b>124.57</b>
26	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	<b>Nos.</b>	<b>8</b>				<b>8.00</b>
27	KSRRB 14.6-1:Providing and laying heavy duty cobble stones 60mm thick interlocking pavers,using cement and course sand for manufacture of blocks of approved size,shapes and colour 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 specification (Page No 101 Sl No : 14.6)						
	Bus Stop at Ch.170.00 to 200.00	Sqm	1	26.00	2.50		65.00
	Bus Stop at Ch.230.00 to 250.01	Sqm	1	26.00	2.50		65.00
	Bus Stop at Ch.330.00 to 350.0	Sqm	1	17.00	2.50		42.50
		<b>Sqm</b>					<b>172.50</b>

Sl. No.	Description	Unit	No's	L	B	H	Qty.
28	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. (NON SOR Item)	Nos.	6				6.00
29	Providing and Installing Waste water treatment and recycling unit for each E-Toilet: Bio digester tank suitable for maintenance free processing the soil waste with 2000 litre capacity, made of FRP. The bio digester shall be of anaerobic type with compartments followed by disinfection. The compartments shall have polygrass mats for protection of bacteria on side partition walls. The bio digester shall be fitted with ball valve or bypass arrangement. Dosed with approved microbial solution at recommended interval (NON SOR Item)	Nos.	6				6.00
30	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.	10				10.00
31	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.	7				7.00
32	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (blow) as per Specification (NON SOR Item)	Nos.	17				17.00
33	Supply and fixing of 300 mm dia – single source – LED retrofit - Amber (blow) as per Specification (NON SOR Item)	Nos.	17				17.00
34	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (arrow/U- Turn) EN-12368 as per Specification (NON SOR Item)	Nos.	17				17.00
35	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (ped. standing) EN-12368 as per Specification (NON SOR Item)	Nos.	16				16.00
36	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (ped.walking) EN-12368 as per Specification (NON SOR Item)	Nos.	16				16.00
37	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.	15				15.00

EXECUTIVE ENGINEER  
MSCL MANGALURU

SUPERINTENDING ENGINEER  
MSCL MANGALURU



**Name of the Work :- Mangalore Smart City**  
**3.1.2 Rate Analysis of Road & Junction for Maidan Road**

**RATE ANALYSIS -ROAD & JUNCTION PAVEMENT FOR MAIDAN ROAD**

1	KSRRB M200-14.2 Dismantling brick/Tile work /Paver Block B.in Cement Mortar retaining walls and other structure comprising of masonry cement concrete,wood work, Including T and P.sorting and dismatled material,disposal of unserviceble material and stacking the servicable material with all lifts complete as per specification.			
	Basic rate		244	
	Lead & Lift Charges As per page no.140 of S.R. (upto 5km)		16.25	
	Total		260.25	
	Add 12% For area weightage (Mangalore City)		31.23	
		<b>Rate</b>	<b>291.48</b>	<b>Cum</b>
2	KSRRB M200-15.1. 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. iii) Dismantling Stone Masonry. A. Rubble Stone masonry in lime mortar. MORTH Specification No. 202. KSRRB M200-17.1-do-v) Dismantaling Steel work in all types of sections upto a heigh of 5m above plinth level including cutting of dismembering			
	Basic rate		1202	
	Add 12% For area weightage		144.24	
		<b>Rate</b>	<b>1346.24</b>	<b>MT</b>
3	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)Lime/cement concrete by mechanical means.			
	Basic rate		179	
	Add 12% For area weightage		21.48	
		<b>Rate</b>	<b>200.48</b>	<b>cum</b>
4	KSRRB M800-Portable barricade in construction zone KSEEB M800-43.Installation of a steel portable barricade with horizontal rail 300mm wide.2.5m in length fitted on a 'A' frame made with 45x45x5mm angle iron section,1.5m height horizontal rail painted(2 coats) with yellow and white stripes,150mm in width at an angle of 45 degree,'A' Frame painted with 2 Coats of yellow paint,complete as per IRC:SP:55-2001 Complete as per specifications.			
	Basic rate		2372	
	Add 12% For area weightage		284.64	
		<b>Rate</b>	<b>2656.64</b>	<b>Each</b>
5	KSRRB M200-Dismantaling 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.			
	Basic rate		10	
	Add 12% For area weightage		1.2	
		<b>Rate</b>	<b>11.20</b>	<b>Rmt</b>
6	Removing existing Sculpture from Junction Round about and preserving at safe place and to be installed after completion of the work as directed by engineer incharge (If any damages the reponsibility will be at the cost of contractor)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.1</b>	<b>Rate</b>	<b>100000</b>	<b>Nos.</b>

7	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(Including transporting charges,loading and unloading for lead 5km)			
	Basic rate		46	
	Lead & Lift Charges As per page no.140 of S.R. (upto 5km)		16	
	Total		62	
	Add 12% For area weightage (Mangalore City)		7.44	
		<b>Rate</b>	<b>69.44</b>	<b>Cum</b>
8	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 (Page No.149,SI No.19.64)			
	Basic Rate		5	
	Add 12% For Area weightage		0.6	
		<b>Rate</b>	<b>5.60</b>	<b>Sqm</b>
9	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		781	
	Lead & Lift Charges As per page no.140 of S.R. (upto 5km)		16.25	
	Loading & Unloading Charges As per page no.134,SI No.17.1 of S.R.		68	
	Total		865.25	
	Add 12% For area weightage (Mangalore City)		103.83	
		<b>Rate</b>	<b>969.08</b>	<b>Cum</b>
10	KSRB 4-1-6 Providing and laying in position plain cement concrete of Mix 1:2:4 with cement @240Kgs,with 20mm and down size graded granite metal coarse aggregates @0.878 cum and fine aggregate @0.530 cum machine mixed,concrete laid in layers not exceeding 15cms. thick,well compacted in foundation,plinth and cills,including cost of all materials,labour,HOM of machinery ,curing complete as per specification No.KBS4.1,4.2 (Page No 12,SI No : 4.6)			
	Basic Rate		5441	
	Ded.Cement Cost (7.2 Rs./kg x240 kg)		-1728	
	Total		3713	
	Add 12% For Area weightage		445.56	
	Cement cost(7.2Rs./kg x 240 kg)		1728	
		<b>Rate</b>	<b>5886.56</b>	<b>Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal			
11	KSRB 2.8 :Providing and Filling in Foundation with Granite /Trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering including cost of all materials and labour with all leads and lift.complete as per specifications. (Page No 6 SI No : 9.45)			
	Basic Rate		2114	
	Add 12% For Area weightage		253.68	
		<b>Rate</b>	<b>2367.68</b>	<b>Cum</b>

12	KSRB 4.2.1 : Providing and laying in position reinforcement cement concrete of design Mix M25 with OPC cement @240Kgs,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,pedastals,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 12,SI No : 4.10)		
	Basic Rate without cement( 6221.0 -7.2 Rs./kg x240 kg = 4493.0)		4493
	Add 12% For Area weightage		539.16
	Cement cost (7.20 Rs./kg x 240 kg)		1728
		<b>Rate</b>	<b>6760.16 Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal		
13	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.		
	Basic Rate		231
	Add 12% For Area weightage		27.72
		<b>Rate</b>	<b>258.72 Sqm</b>
14	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.		
	Basic Rate		70675
	Add 12% For Area weightage		8481
		<b>Rate</b>	<b>79156.00 MT</b>
15	KSRRB M400-6.2.Construction of granular sub base by providing close graded crushed stone aggregate of granite/trap/basalt material,spreading in uniform layers with motor on prepared surface,mixing by mix in place methode by rotavator at OMC, and compacting with vibratory power roller to achieve the desired density,complete as per specification.B.By Mix in Place Methode. Close graded granular sub base material as per 400-1		
	Basic Rate		1408
	Add 12% For Area weightage		168.96
		<b>Rate</b>	<b>1576.96 Cum</b>
16	KSRRB M600-1.Construction of dry lean cement concrete mix M15 with 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 vibratory roller,finishing and curing complete as per specifications.Morth specification No.601 (Page No 176,SI No : 22.1)		
	Basic Rate		3761
	Deduction of Cement Cost ( 7.2 Rs/Kg X 160Kg)		-1152
	Total		2609
	Add 12% For Area weightage		313.08
	Add Cement cost(7.2Rs./kg x 160 kg)		1152
		<b>Rate</b>	<b>4074.08 Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal		

17	<p>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 slip 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,admixture 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		7166	
	Basic Rate without cement (7.2 Rs./kg x420kg)		-3024	
	Total		4142	
	Add 12% For Area weightage		497.04	
	Add Cement cost(7.2Rs./kg x420 kg)		3024	
		<b>Rate</b>	<b>7663.04</b>	<b>Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal			
18	<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 (Non SOR Item)</p>			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.2</b>	<b>Rate</b>	<b>129</b>	<b>Rmt</b>
19	<p>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</p>			
	Basic Rate		344	
	Add 12% For Area weightage		41.28	
		<b>Rate</b>	<b>385.28</b>	<b>Rmt</b>
20	<p>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=</p>			
	<b>Rate Arrived as per Rate analysis</b>			
	Basic Rate		1579	
		<b>Rate</b>	<b>1579.00</b>	<b>Nos</b>
21	<p>KSSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory &amp; Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications &amp; fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides &amp; 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 &amp; 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 &amp; conveyance of all materials, equipment, machinery &amp; 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 &amp; 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</p>			
	Basic Rate	20	5185	

	Add 12% For Area weightage		622.2	
		<b>Rate</b>	<b>5807.20</b>	<b>Nos</b>
22	<p>KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory &amp; Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications &amp; fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides &amp; 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 &amp; 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 &amp; conveyance of all materials, equipment, machinery &amp; 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 &amp; a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier.</p> <p>900MM Octagon Stop Board-TYPE XI</p>			
	Basic Rate		7564	
	Add 12% For Area weightage		907.68	
		<b>Rate</b>	<b>8471.68</b>	<b>Nos</b>
23	<p>KSRRB M800-2. Retro-Reflectorised Traffic Signs - Manufacturing, Supply and Installation of retro-reflective cautionary, mandatory &amp; Informatory signboards made out of cube corner micro prismatic grade sheeting confirming to type XI standards of IRC:67:2012 specifications &amp; fixed over 4mm thick aluminium composite panel sheet having minimum 0.30 mm thick aluminum skin on both sides &amp; 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 &amp; 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 &amp; conveyance of all materials, equipment, machinery &amp; 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 &amp; a certified copy of three years outdoor exposure report from an independent test lab for the product offered shall be obtained from the supplier.</p> <p>600MM Circle-TYPE XI</p>			
	Basic Rate		4732	
	Add 12% For Area weightage		567.84	
		<b>Rate</b>	<b>5299.84</b>	<b>Nos</b>
24	<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</p>			
	Basic Rate		647	
	Add 12% For Area weightage		77.64	
		<b>Rate</b>	<b>724.64</b>	<b>Sqm</b>
25	<p>KSRRB 800-1.Painting two coats after filling the surface with synthetic enamel paint in approved shades on new palstered concrete surfaces,with materials,labour complete as per specification.for Kerb Stone (Page No 182,SI No : 24.1)</p>			
	Basic Rate		60	
	Add 12% For Area weightage		7.2	
		<b>Rate</b>	<b>67.20</b>	<b>Sqm</b>

26	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			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.3</b>	<b>Rate</b>	<b>1500000</b>	<b>Nos.</b>
27	KSRB 14.6-1:Providing and laying heavy duty cobble stones 60mm thick interlocking pavers,using cement and course sand for manufacture of blocks of approved size,shapes and colour 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 specification			
	Basic Rate		912	
	Add 12% For Area weightage		109.44	
		<b>Rate</b>	<b>1021.44</b>	<b>Sqm</b>
28	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 Acess 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 Advertisment purpose space for advertisement dispaly to be povidod 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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.1</b>	<b>Rate</b>	<b>575000</b>	<b>Nos.</b>
29	Providing and Installing Waste water treatment and recycling unit for each E-Toilet: Bio digester tank suitable for maintenance free processing the soil waste with 2000 litre capacity, made of FRP. The bio digester shall be of anaerobic type with compartments followed by disinfection. The compartments shall have polygrass mats for protection of bacteria on side partition walls. The bio digester shall be fitted with ball valve or bypass arrangement. Dosed with approved microbial solution at recommended interval (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.4</b>	<b>Rate</b>	<b>150000</b>	<b>Nos.</b>

30	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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.5</b>	<b>Rate</b>	<b>18691</b>	<b>Nos.</b>
31	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			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.6</b>	<b>Rate</b>	<b>52850</b>	<b>Nos.</b>
32	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (blow) as per Specification (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.7</b>	<b>Rate</b>	<b>11082</b>	<b>Nos.</b>
33	Supply and fixing of 300 mm dia – single source – LED retrofit - Amber (blow) as per Specification (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.7</b>	<b>Rate</b>	<b>11082</b>	<b>Nos.</b>
34	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (arrow/U- Turn) EN-12368 as per Specification (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.8</b>	<b>Rate</b>	<b>13973</b>	<b>Nos.</b>
35	Supply and fixing of 300 mm dia – single source – LED retrofit - Red (ped. standing) EN-12368 as per Specification (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.9</b>	<b>Rate</b>	<b>11082</b>	<b>Nos.</b>
36	Supply and fixing of 300 mm dia – single source – LED retrofit - Green (ped.walking) EN-12368 as per Specification (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.10</b>	<b>Rate</b>	<b>13973</b>	<b>Nos.</b>
37	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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.11</b>	<b>Rate</b>	<b>6196</b>	<b>Nos.</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**  
**3.2 BOQ of Footpath and Parking area for Maidan Road**

Sl.No.	Specification	Unit	Quantity	Rate	Amount	Remarks
1.00	KSRRB M200-14.2 Dismantling brick/Tile work /Paver Block B.in Cement Mortar retaining walls and other structure comprising of masonry cement concrete, wood work, Including T and P.sorting and dismatled material, disposal of unserviceble material and stacking the servicable material with all lifts complete as per specification. (Page No 137, SI No : 18.23)	Cum	485	291.48	1,41,475	
2.00	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. (Page No.139,S.I.No.18.49)	Rmt	1,936	11.20	21,683	
3.00	Earth work excavation for foundation of structures upto 3 mtrs. by mechanical means as per drawing and technical specification, including setting out, providing shoring, strutting and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, filling back the excavated earth to the extent required and utilising / transporting the remaining earth upto 1.00km lead. including cost of labour, materials and HOM of machineries etc., complete. <b>up to 3.0 m deep</b> (Page No 7, SI No : 2.22.1)	Cum	1,201.49	59.36	71,321	
4.00	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 (Page No.149,SI No 19.64)	Sqm	3,801.27	5.60	21,287	
5.00	<b>Granular Sub Base (GSB):</b> KSRRB 400-1. Providing, laying, spreading and compacting specified graded, gravel or any other course material 60% and crushed stone aggregates of granite/ trap/ basalt 40% in sub-base course, close grading-I including premixing the material at OMC in mechanical mixer, carriage of mixed material, spreading in uniform layers with motor grader on a prepared base and compacting with power roller to achieve the desired density including all materials, labour, HOM of machinery, lighting, guarding, barricading and maintenance of diversion complete as per specifications. MORTH Chapter 4. (Page No 155,SI No : 20.2)	Cum	833.42	1,357.44	11,31,323	
6.00	KSRRB 4.1.6 Providing and laying in position <b>plain cement concrete of mix 1:2:4</b> with OPC cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @0.878cum and fine aggregates @ 0.459cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, including cost of all materials, labour, HOM of machinery, curing complete as per specifications (SI No : 4.6 Pg No 12)	Cum	76.95	5,886.56	4,52,975	



Sl.No.	Specification	Unit	Quantity	Rate	Amount	Remarks
7.00	Providing and laying heavy duty cobble stones <b>60mm thick</b> , 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 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. (Page No 101,SI No : 14.6)	Sqm	3,677	1,021.44	37,55,902	
8.00	Providing and laying heavy duty <b>Tactile Tiles</b> (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 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)	Sqm	289	912.00	2,63,638	
9.00	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 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. (Page No 101,SI No : 14.7)	Sqm	445	1,086.40	4,83,893	
10.00	Providin and fixing pre cast solid concrete Kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165mm respectively,400mm high and 450mm in length finished with CM 1:3 Plastering 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)	Nos.	5,367	350.56	18,81,456	

Sl.No.	Specification	Unit	Quantity	Rate	Amount	Remarks
11.00	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). (NON SOR Item as per attached)	Nos.	2,235	1,579.00	35,29,065	
12.00	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 specifications. MORTH Chapter 8 (Page No 182, SI No : 24.1)	Sqm	1,043	67.20	70,118	
13.00	Supplying chainlink fencing 50mm size of 8 gauge properly stretched between existing rectangular poles and fixing suitable bolts and nuts, the free ends shall be welded to pole and block pipe at top and bottom as required including cost of all materials, labour, lead and lifts and as per the directions of the engineer in charge of work including two coats of approved quality paint over one coat of shop paint (Page No 262, SI No : 37.3)	Sqm	235	738.08	1,73,449	
14.00	Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	No.s	10	4,500.00	45,000	
15.00	Providing and Fixing SS 304 Outdoor Dustbin of 55 liters capacity (NON SOR Item)	Nos.	8	7,500.00	60,000	
16.00	Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)	No.s	20	3,500.00	70,000	
		<b>TOTAL</b>			<b>1,21,72,584</b>	

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**

**3.2.1 Measurement Sheet of Footpath and Parking area for Maidan Road**

Sl.No.	Description	Unit	No's	L	B	D	Qty.
1.00	KSRRB M200-14.2 Dismantaling brick/Tile work /Paver Block B.in Cement Mortar retaining walls and other structure comprising of masonrycement concrete,wood work, Including T and P.sorting and dismatled material,disposal of unserviceble material and stacking the servicable material with all lifts complete as per specification. (Page No 137,SI No : 18.23)						
	<b>Footpath</b>						
	Left Side ( Govt. Office Side)						
	University College to Ch.0.0		1	137.00	2.20	0.12	36.17
	Ch.0.0 to 110.0		1	130.76	3.62	0.12	56.80
	Ch. 117.5 to Ch.141.8 (Rectangular Portion)		1	41.00	3.70	0.12	18.20
				Area			
	Ch. 141.8 to Ch. 145.3(Quarter of Circle)		1	8.19	3.70	0.12	3.64
				Area			
	Ch.150.05 to Ch.154.00(Quarter of Circle)		1	7.32	8.19	0.12	7.19
	Ch.154.0 to Ch.266.4(Rectangular Portion)		1	111.80	3.40	0.12	45.61
				Area			
	Ch.266.4 to Ch.270.0 (Quarter of Circle)		1	6.47		0.12	0.78
				Area			
	Ch.275.0 to Ch.278.4 (Quarter of Circle)		1	6.7		0.12	0.80
	Ch. 278.4 to Ch.311.6 (Rectangular Portion)		1	33.2	3.6	0.12	14.34
				Area			
	Ch.311.6 to Ch.314.9(Quarter of Circle)		1	7.9		0.12	0.94
	Ch.320.0 to Ch.323.4(Quarter of Circle)		1	8.0			7.95
	Ch.323.4 to Ch.372.5 (Rectangular Portion)		1	49.2	4.0	0.12	23.32
	Ch.372.5 to Ch.376.0(Quarter of Circle)		1	9.18		0.12	1.10
				Area			
	Ch.380 to Ch.384.00(Quarter of Circle)		1	9.88		0.12	1.19
	Ch.384.0 to Ch.327.8(Rectangular Portion)		1	43.9	4.8	0.12	25.29
				Area			
	Ch. 327.8 Ch.431.8(Quarter of Circle)		1	12		0.12	1.48
				Area			
	Ch.438.5 to Ch.441.7(Quarter of Circle)		1	7.3		0.12	0.88
	Ch.441.7 to Ch.471.8(Rectangular Portion)		1	30.1	3.1	0.12	11.02
				Area			
	Ch.471.8 to Ch.474.3(Quarter of Circle)		1	4.8		0.12	0.58
				Area			
	Ch.485.0 to Ch.488.1(Quarter of Circle)		1	4.84		0.12	0.58
	Ch.488.1 to Old kent Road		1	66	2.6	0.12	20.90
	Footpath						
	<b>Right Hand Side( Maidan Side)</b>						
	Bibi Alabi Road to Ch.0.00		1	29	2	0.12	5.39
	Ch.0.00 to 100.00		1	84	2	0.12	20.50
	Ch.100.0 to Ch.102.8		1	3	2	0.12	0.67
	Ch.102.8 to Ch.177.5		1	74.7	2	0.12	13.45
				Area			
	Ch. 177.5 to Ch.179.4(Quarter of Circle)		1	1.8		0.12	0.21
				Area			
	Ch.184.4 to Ch.192.8		1	31.68		0.12	3.80
	Ch.192.8 to Ch.199.40		1	6.60	5.40	0.12	4.28
	Ch.199.4 to Ch.201.8		1	2.30	4.25	0.12	1.17
	Ch.201.80 to Ch.210.08		1	9.00	3.10	0.12	3.35
	Ch.210.08 to Ch.213.1		1	2.40	4.25	0.12	1.22
	Ch. 213.1 to Ch.214.8		1	1.70	5.40	0.12	1.10
	Ch.214.8 to Ch.217.2		1	2.40	4.25	0.12	1.22

Sl.No.	Description	Unit	No's	L	B	D	Qty.
	Ch.217.2 to Ch.220.07		1	3.50	3.14	0.12	1.32
	Ch.220.07 to Ch.223.0		1	2.40	4.25	0.12	1.22
	Ch.223.0 to Ch.226.4		1	3.20	5.40	0.12	2.07
	Ch. 226.4 to Ch.228.7		1	2.40	4.20	0.12	1.21
	Ch.228.7 to Ch.264.2		1	35.50	3.00	0.12	12.78
	Ch.264.2 to Ch.266.7		1	2.50	4.20	0.12	1.26
	Ch. 266.7 to Ch.268.9		1	2.10	5.40	0.12	1.36
	Ch.268.9 to Ch.271.2		1	2.30	4.20	0.12	1.16
	Ch.271.2 to Ch.274.4		1	3.20	3.00	0.12	1.15
	Ch. 274.4 to Ch.276.8		1	2.50	4.25	0.12	1.28
	Ch.276.8 to Ch.280.00		1	3.20	5.50	0.12	2.11
	Ch.280.0 to Ch.282.4		1	2.40	4.25	0.12	1.22
	Ch.282.4 to Ch.286.0		1	3.70	3.00	0.12	1.33
	Ch.286.0 to Ch.288.5		1	2.50	4.20	0.12	1.26
	Ch.288.5 to Ch.290.0		1	1.40	5.40	0.12	0.91
	Ch.290.0 to Ch.292.4		1	2.40	4.20	0.12	1.21
	Ch.292.4 to Ch.298.7		1	6.50	3.00	0.12	2.34
	Ch.298.7 to Ch.301.2		1	2.40	4.20	0.12	1.21
	Ch.301.2 to Ch.305.1		1	3.90	5.40	0.12	2.53
	Ch.305.1 to Ch.307.5		1	2.40	4.20	0.12	1.21
	Ch.307.5 to Ch.311.3		1	3.90	3.00	0.12	1.40
	Ch.311.3 to Ch.314.1		1	2.80	3.70	0.12	1.24
	Ch.314.1 to Ch.316.6		1	2.50	3.00	0.12	0.90
	Ch.316.6 to Ch.321.4		1	4.80	4.20	0.12	2.42
	Ch.321.4 to Ch.342.8		1	21.30	3.00	0.12	7.67
	Ch.342.8 to Ch.348.8		1	6.00	5.40	0.12	3.89
	Ch.348.8 to Ch.354.1		1	5.30	3.00	0.12	1.91
	Ch.354.1 to Ch.362.8		1	8.60	4.20	0.12	4.33
	Ch.362.8 to Ch.434.5		1	71.70	3.05	0.12	26.24
	Ch.434.5 to Ch.436.9		1	2.40	4.30	0.12	1.24
	Ch.436.9 to Ch.490.0		1	51.80	5.60	0.12	34.81
	Ch.490.0 to Ch.500.0		1	23.15	5.50	0.12	15.28
	Ch.500 to Maidan Road-RHS (Towards Hamilton circle)		1	45.60	1.60	0.12	8.76
		Cum				Total	485.37
2.00	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. (Page No.139,S.I.No.18.49)						
	<b>Median</b>						
	Ch.41.0 to 488.0		2	447			894.00
	<b>Maidan Side Kerb Stone</b>						0.00
	Ch.0.0 to Ch.180.0		1	180			180.00
	Ch.190.0 to Ch.550.0		1	360			360.00
	<b>Bldg. Side Kerb Stone</b>						0.00
	Ch.0.0 to Ch.100.0		1	100			100.00
	Ch.110 to Ch.137.0		1	27			27.00
	Ch.143.0 to Ch.262.0		1	119			119.00
	Ch.267.0 to Ch.307.0		1	40			40.00
	Ch.312.0 to Ch.370.0		1	58			58.00
	Ch.372.0 to Ch.424.0		1	52			52.00
	Ch.434.0 to Ch.470.0		1	36			36.00
	Ch.480.0 to Ch.550.0		1	70			70.00
		Rmt					1936.00

Sl.No.	Description	Unit	No's	L	B	D	Qty.
3.00	Earth work excavation for foundation of structures upto 3 mtrs. by mechanical means as per drawing and technical specification, including setting out, providing shoring, strutting and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, filling back the excavated earth to the extent required and utilising / transporting the remaining earth upto 1.00km lead. including cost of labour, materials and HOM of machineries etc., complete. up to 3.0 m deep						
	<b>Footpath</b>						
	<b>Left Side ( Govt. Office Side)</b>						
	University College to Ch.0.0		1	137	2.20	0.3	90.42
	Ch.0.0 to 110.0		1	130.76	3.62	0.3	142.01
	Ch. 117.5 to Ch.141.8 (Rectangular Portion)		1	41	3.70	0.3	45.51
				Area			
	Ch. 141.8 to Ch. 145.3(Quarter of Circle)		1	8.19	3.70	0.3	9.09
				Area			
	Ch.150.05 to Ch.154.00(Quarter of Circle)		1	7.32	8.19	0.3	17.99
	Ch.154.0 to Ch.266.4(Rectangular Portion)		1	111.8	3.40	0.3	114.04
				Area			
	Ch.266.4 to Ch.270.0 (Quarter of Circle)		1	6.47		0.3	1.94
				Area			
	Ch.275.0 to Ch.278.4 (Quarter of Circle)		1	6.7		0.3	2.01
	Ch. 278.4 to Ch.311.6 (Rectangular Portion)		1	33.2	3.60	0.3	35.86
				Area			
	Ch.311.6 to Ch.314.9(Quarter of Circle)		1	7.86		0.3	2.36
	Ch.320.0 to Ch.323.4(Quarter of Circle)		1	7.95			7.95
	Ch.323.4 to Ch.372.5 (Rectangular Portion)		1	49.2	3.95	0.3	58.30
	Ch.372.5 to Ch.376.0(Quarter of Circle)		1	9.18		0.3	2.75
				Area			
	Ch.380 to Ch.384.00(Quarter of Circle)		1	9.88		0.3	2.96
	Ch.384.0 to Ch.327.8(Rectangular Portion)		1	43.9	4.80	0.3	63.22
				Area			
	Ch. 327.8 Ch.431.8(Quarter of Circle)		1	12.35		0.3	3.71
				Area			
	Ch.438.5 to Ch.441.7(Quarter of Circle)		1	7.3		0.3	2.19
	Ch.441.7 to Ch.471.8(Rectangular Portion)		1	30.1	3.05	0.3	27.54
				Area			
	Ch.471.8 to Ch.474.3(Quarter of Circle)		1	4.82		0.3	1.45
				Area			
	Ch.485.0 to Ch.488.1(Quarter of Circle)		1	4.84		0.3	1.45
	Ch.488.1 to Old kent Road		1	66.14	2.63	0.3	52.25
	<b>Footpath</b>						
	<b>Right Hand Side( Maidan Side)</b>						
	Bibi Alabi Road to Ch.0.00		1	29	1.55	0.3	13.49
	Ch.0.00 to 100.00		1	84	2.03	0.3	51.24
	Ch.100.0 to Ch.102.8		1	2.8	2.00	0.3	1.68
	Ch.102.8 to Ch.177.5		1	74.7	1.50	0.3	33.62
				Area			
	Ch. 177.5 to Ch.179.4(Quarter of Circle)		1	1.78		0.3	0.53
				Area			
	Ch.184.4 to Ch.192.8		1	31.68		0.3	9.50
	Ch.192.8 to Ch.199.40		1	6.6	5.40	0.3	10.69
	Ch.199.4 to Ch.201.8		1	2.3	4.25	0.3	2.93
	Ch.201.80 to Ch.210.08		1	9	3.10	0.3	8.37
	Ch.210.08 to Ch.213.1		1	2.4	4.25	0.3	3.06
	Ch. 213.1 to Ch.214.8		1	1.7	5.40	0.3	2.75
	Ch.214.8 to Ch.217.2		1	2.4	4.25	0.3	3.06

Sl.No.	Description	Unit	No's	L	B	D	Qty.
	Ch.217.2 to Ch.220.07		1	3.5	3.14	0.3	3.30
	Ch.220.07 to Ch.223.0		1	2.4	4.25	0.3	3.06
	Ch.223.0 to Ch.226.4		1	3.2	5.40	0.3	5.18
	Ch. 226.4 to Ch.228.7		1	2.4	4.20	0.3	3.02
	Ch.228.7 to Ch.264.2		1	35.5	3.00	0.3	31.95
	Ch.264.2 to Ch.266.7		1	2.5	4.20	0.3	3.15
	Ch. 266.7 to Ch.268.9		1	2.1	5.40	0.3	3.40
	Ch.268.9 to Ch.271.2		1	2.3	4.20	0.3	2.90
	Ch.271.2 to Ch.274.4		1	3.2	3.00	0.3	2.88
	Ch. 274.4 to Ch.276.8		1	2.5	4.25	0.3	3.19
	Ch.276.8 to Ch.280.00		1	3.2	5.50	0.3	5.28
	Ch.280.0 to Ch.282.4		1	2.4	4.25	0.3	3.06
	Ch.282.4 to Ch.286.0		1	3.7	3.00	0.3	3.33
	Ch.286.0 to Ch.288.5		1	2.5	4.20	0.3	3.15
	Ch.288.5 to Ch.290.0		1	1.4	5.40	0.3	2.27
	Ch.290.0 to Ch.292.4		1	2.4	4.20	0.3	3.02
	Ch.292.4 to Ch.298.7		1	6.5	3.00	0.3	5.85
	Ch.298.7 to Ch.301.2		1	2.4	4.20	0.3	3.02
	Ch.301.2 to Ch.305.1		1	3.9	5.40	0.3	6.32
	Ch.305.1 to Ch.307.5		1	2.4	4.20	0.3	3.02
	Ch.307.5 to Ch.311.3		1	3.9	3.00	0.3	3.51
	Ch.311.3 to Ch.314.1		1	2.8	3.70	0.3	3.11
	Ch.314.1 to Ch.316.6		1	2.5	3.00	0.3	2.25
	Ch.316.6 to Ch.321.4		1	4.8	4.20	0.3	6.05
	Ch.321.4 to Ch.342.8		1	21.3	3.00	0.3	19.17
	Ch.342.8 to Ch.348.8		1	6	5.40	0.3	9.72
	Ch.348.8 to Ch.354.1		1	5.3	3.00	0.3	4.77
	Ch.354.1 to Ch.362.8		1	8.6	4.20	0.3	10.84
	Ch.362.8 to Ch.434.5		1	71.7	3.05	0.3	65.61
	Ch.434.5 to Ch.436.9		1	2.4	4.30	0.3	3.10
	Ch.436.9 to Ch.490.0		1	51.8	5.60	0.3	87.02
	Ch.490.0 to Ch.500.0		1	23.15	5.50	0.3	38.20
	Ch.500 to Maidan Road-RHS (Towards Hamilton circle)		1	45.6	1.60	0.3	21.89
		Cum				Total	1201.49
4.00	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 (Page No.149,SI No.19.64)	Sqm					
	<b>Footpath</b>						
	<b>Left Side ( Govt. Office Side)</b>						
	University College to Ch.0.0		1	137	2.2		301.40
	Ch.0.0 to 110.0		1	130.76	3.62		473.35
	Ch. 117.5 to Ch.141.8 (Rectangular Portion)						
				Area			
	Ch. 141.8 to Ch. 145.3(Quarter of Circle)		1	8.19	3.7		30.30
				Area			
	Ch.150.05 to Ch.154.00(Quarter of Circle)		1	7.32	8.19		59.95
	Ch.154.0 to Ch.266.4(Rectangular Portion)		1	111.8	3.4		380.12
				Area			
	Ch.266.4 to Ch.270.0 (Quarter of Circle)		1	6.47			6.47
				Area			
	Ch.275.0 to Ch.278.4 (Quarter of Circle)		1	6.7			6.70
	Ch. 278.4 to Ch.311.6 (Rectangular Portion)		1	33.2	3.6		119.52
				Area			
	Ch.311.6 to Ch.314.9(Quarter of Circle)		1	7.86			7.86
	Ch.320.0 to Ch.323.4(Quarter of Circle)		1	7.95			7.95
	Ch.323.4 to Ch.372.5 (Rectangular Portion)		1	49.2	3.95		194.34
	Ch.372.5 to Ch.376.0(Quarter of Circle)		1	9.18			9.18

Sl.No.	Description	Unit	No's	L	B	D	Qty.
				Area			
	Ch.380 to Ch.384.00(Quarter of Circle)		1	9.88			9.88
	Ch.384.0 to Ch.327.8(Rectangular Portion)		1	43.9	4.8		210.72
				Area			
	Ch. 327.8 Ch.431.8(Quarter of Circle)		1	12.35			12.35
				Area			
	Ch.438.5 to Ch.441.7(Quarter of Circle)		1	7.3			7.30
	Ch.441.7 to Ch.471.8(Rectangular Portion)		1	30.1	3.05		91.81
				Area			0.00
	Ch.471.8 to Ch.474.3(Quarter of Circle)		1	4.82			4.82
				Area			
	Ch.485.0 to Ch.488.1(Quarter of Circle)		1	4.84			4.84
	Ch.488.1 to Old kent Road		1	66.14	2.6333		174.17
	<b>Footpath</b>						
	Right Hand Side( Maidan Side)						
	Bibi Alabi Road to Ch.0.00		1	29	1.55		44.95
	Ch.0.00 to 100.00		1	84	2.0333		170.80
	Ch.100.0 to Ch.102.8		1	2.8	2		5.60
	Ch.102.8 to Ch.177.5		1	74.7	1.5		112.05
				Area			
	Ch. 177.5 to Ch.179.4(Quarter of Circle)		1	1.78			
				Area			
	Ch.184.4 to Ch.192.8		1	31.68			
	Ch.192.8 to Ch.199.40		1	6.6	5.4		35.64
	Ch.199.4 to Ch.201.8		1	2.3	4.25		9.78
	Ch.201.80 to Ch.210.08		1	9	3.1		27.90
	Ch.210.08 to Ch.213.1		1	2.4	4.25		10.20
	Ch. 213.1 to Ch.214.8		1	1.7	5.4		9.18
	Ch.214.8 to Ch.217.2		1	2.4	4.25		10.20
	Ch.217.2 to Ch.220.07		1	3.5	3.14		10.99
	Ch.220.07 to Ch.223.0		1	2.4	4.25		10.20
	Ch.223.0 to Ch.226.4		1	3.2	5.4		17.28
	Ch. 226.4 to Ch.228.7		1	2.4	4.2		10.08
	Ch.228.7 to Ch.264.2		1	35.5	3		106.50
	Ch.264.2 to Ch.266.7		1	2.5	4.2		10.50
	Ch. 266.7 to Ch.268.9		1	2.1	5.4		11.34
	Ch.268.9 to Ch.271.2		1	2.3	4.2		9.66
	Ch.271.2 to Ch.274.4		1	3.2	3		9.60
	Ch. 274.4 to Ch.276.8		1	2.5	4.25		10.63
	Ch.276.8 to Ch.280.00		1	3.2	5.5		17.60
	Ch.280.0 to Ch.282.4		1	2.4	4.25		10.20
	Ch.282.4 to Ch.286.0		1	3.7	3		11.10
	Ch.286.0 to Ch.288.5		1	2.5	4.2		10.50
	Ch.288.5 to Ch.290.0		1	1.4	5.4		7.56
	Ch.290.0 to Ch.292.4		1	2.4	4.2		10.08
	Ch.292.4 to Ch.298.7		1	6.5	3		19.50
	Ch.298.7 to Ch.301.2		1	2.4	4.2		10.08
	Ch.301.2 to Ch.305.1		1	3.9	5.4		21.06
	Ch.305.1 to Ch.307.5		1	2.4	4.2		10.08
	Ch.307.5 to Ch.311.3		1	3.9	3		11.70
	Ch.311.3 to Ch.314.1		1	2.8	3.7		10.36
	Ch.314.1 to Ch.316.6		1	2.5	3		7.50
	Ch.316.6 to Ch.321.4		1	4.8	4.2		20.16
	Ch.321.4 to Ch.342.8		1	21.3	3		63.90
	Ch.342.8 to Ch.348.8		1	6	5.4		32.40
	Ch.348.8 to Ch.354.1		1	5.3	3		15.90
	Ch.354.1 to Ch.362.8		1	8.6	4.2		36.12
	Ch.362.8 to Ch.434.5		1	71.7	3.05		218.69
	Ch.434.5 to Ch.436.9		1	2.4	4.3		10.32
	Ch.436.9 to Ch.490.0		1	51.8	5.6		290.08
	Ch.490.0 to Ch.500.0		1	23.15	5.5		127.33
	Ch.500 to Maidan Road-RHS (Towards Hamilton circle)		1	45.6	1.6		72.96
		<b>Sqm</b>				<b>Total</b>	<b>3801.27</b>

Sl.No.	Description	Unit	No's	L	B	D	Qty.
5.00	Granular Sub Base (GSB): KSRRB 400-1. Providing, laying, spreading and compacting specified graded, gravel or any other course material 60% and crushed stone aggregates of granite/ trap/ basalt 40% in sub-base course, close grading-I including premixing the material at OMC in mechanical mixer, carriage of mixed material, spreading in uniform layers with motor grader on a prepared base and compacting with power roller to achieve the desired density including all materials, labour, HOM of machinery, lighting, guarding, barricading and maintenance of diversion complete as per specifications. MORTH Chapter 4. (Page No 155 Sl No : 20.2)						
	<b>Footpath</b>						
	Left Side ( Govt. Office Side)						
	University College to Ch.0.0		1	137.0	2.2	0.2	60.28
	Ch.0.0 to 110.0		1	130.8	3.6	0.2	94.67
	Ch. 117.5 to Ch.141.8 (Rectangular Portion)		1	41.0	3.7	0.2	30.34
				Area		0.2	0.20
	Ch. 141.8 to Ch. 145.3(Quarter of Circle)		1	8.2	3.7	0.2	6.06
				Area			
	Ch.150.05 to Ch.154.00(Quarter of Circle)		1	7.3	8.2	0.2	11.99
	Ch.154.0 to Ch.266.4(Rectangular Portion)		1	111.8	3.4	0.2	76.02
				Area			
	Ch.266.4 to Ch.270.0 (Quarter of Circle)		1	6.5		0.2	1.29
				Area			
	Ch.275.0 to Ch.278.4 (Quarter of Circle)		1	6.7		0.2	1.34
	Ch. 278.4 to Ch.311.6 (Rectangular Portion)		1	33.2	3.6	0.2	23.90
				Area			
	Ch.311.6 to Ch.314.9(Quarter of Circle)		1	7.9		0.2	1.57
	Ch.320.0 to Ch.323.4(Quarter of Circle)		1	8.0		0.2	1.59
	Ch.323.4 to Ch.372.5 (Rectangular Portion)		1	49.2	4.0	0.2	38.87
	Ch.372.5 to Ch.376.0(Quarter of Circle)		1	9.2		0.2	1.84
				Area			
	Ch.380 to Ch.384.00(Quarter of Circle)		1	9.9		0.2	1.98
	Ch.384.0 to Ch.327.8(Rectangular Portion)		1	43.9	4.8	0.2	42.14
				Area			
	Ch. 327.8 Ch.431.8(Quarter of Circle)		1	12.4		0.2	2.47
				Area			
	Ch.438.5 to Ch.441.7(Quarter of Circle)		1	7.3		0.2	1.46
	Ch.441.7 to Ch.471.8(Rectangular Portion)		1	30.1	3.1	0.2	18.36
				Area			
	Ch.471.8 to Ch.474.3(Quarter of Circle)		1	4.8		0.2	0.96
				Area			
	Ch.485.0 to Ch.488.1(Quarter of Circle)		1	4.8		0.2	0.97
	Ch.488.1 to Old kent Road		1	66.1	2.6	0.2	34.83
	<b>Median</b>						
	Ch.41.0 to 488.0		1	894.0	0.2	0.2	35.76
	<b>Footpath</b>						
	Right Hand Side( Maidan Side)						
	Bibi Alabi Road to Ch.0.00		1	29.0	1.6	0.2	8.99
	Ch.0.00 to 100.00		1	84.0	2.0	0.2	34.16
	Ch.100.0 to Ch.102.8		1	2.8	2.0	0.2	1.12
	Ch.102.8 to Ch.177.5		1	74.7	1.5	0.2	22.41
	Ch. 177.5 to Ch.179.4(Quarter of Circle)		1	1.8	1.5	0.2	0.53
				Area			
	Ch.184.4 to Ch.192.8		1	31.7		0.2	6.34



Sl.No.	Description	Unit	No's	L	B	D	Qty.
	Ch.192.8 to Ch.199.40		1	6.6	5.4	0.2	7.13
	Ch.199.4 to Ch.201.8		1	2.3	4.3	0.2	1.96
	Ch.201.80 to Ch.210.08		1	9.0	3.1	0.2	5.58
	Ch.210.08 to Ch.213.1		1	2.4	4.3	0.2	2.04
	Ch. 213.1 to Ch.214.8		1	1.7	5.4	0.2	1.84
	Ch.214.8 to Ch.217.2		1	2.4	4.3	0.2	2.04
	Ch.217.2 to Ch.220.07		1	3.5	3.1	0.2	2.20
	Ch.220.07 to Ch.223.0		1	2.4	4.3	0.2	2.04
	Ch.223.0 to Ch.226.4		1	3.2	5.4	0.2	3.46
	Ch. 226.4 to Ch.228.7		1	2.4	4.2	0.2	2.02
	Ch.228.7 to Ch.264.2		1	35.5	3.0	0.2	21.30
	Ch.264.2 to Ch.266.7		1	2.5	4.2	0.2	2.10
	Ch. 266.7 to Ch.268.9		1	2.1	5.4	0.2	2.27
	Ch.268.9 to Ch.271.2		1	2.3	4.2	0.2	1.93
	Ch.271.2 to Ch.274.4		1	3.2	3.0	0.2	1.92
	Ch. 274.4 to Ch.276.8		1	2.5	4.3	0.2	2.13
	Ch.276.8 to Ch.280.00		1	3.2	5.5	0.2	3.52
	Ch.280.0 to Ch.282.4		1	2.4	4.3	0.2	2.04
	Ch.282.4 to Ch.286.0		1	3.7	3.0	0.2	2.22
	Ch.286.0 to Ch.288.5		1	2.5	4.2	0.2	2.10
	Ch.288.5 to Ch.290.0		1	1.4	5.4	0.2	1.51
	Ch.290.0 to Ch.292.4		1	2.4	4.2	0.2	2.02
	Ch.292.4 to Ch.298.7		1	6.5	3.0	0.2	3.90
	Ch.298.7 to Ch.301.2		1	2.4	4.2	0.2	2.02
	Ch.301.2 to Ch.305.1		1	3.9	5.4	0.2	4.21
	Ch.305.1 to Ch.307.5		1	2.4	4.2	0.2	2.02
	Ch.307.5 to Ch.311.3		1	3.9	3.0	0.2	2.34
	Ch.311.3 to Ch.314.1		1	2.8	3.7	0.2	2.07
	Ch.314.1 to Ch.316.6		1	2.5	3.0	0.2	1.50
	Ch.316.6 to Ch.321.4		1	4.8	4.2	0.2	4.03
	Ch.321.4 to Ch.342.8		1	21.3	3.0	0.2	12.78
	Ch.342.8 to Ch.348.8		1	6.0	5.4	0.2	6.48
	Ch.348.8 to Ch.354.1		1	5.3	3.0	0.2	3.18
	Ch.354.1 to Ch.362.8		1	8.6	4.2	0.2	7.22
	Ch.362.8 to Ch.434.5		1	71.7	3.1	0.2	43.74
	Ch.434.5 to Ch.436.9		1	2.4	4.3	0.2	2.06
	Ch.436.9 to Ch.490.0		1	51.8	5.6	0.2	58.02
	Ch.490.0 to Ch.500.0		1	23.2	5.5	0.2	25.47
	Ch.500 to Maidan Road-RHS (Towards Hamilton circle)		1	45.6	1.6	0.2	14.59
		<b>Cum</b>				<b>Total</b>	<b>833.42</b>
6.00	KSRB 4.1.6 Providing and laying in position plain cement concrete of mix 1:2:4 with OPC cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @0.878cum and fine aggregates @ 0.459cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, including cost of all materials, labour, HOM of machinery, curing complete as per specifications (SI No : 4.6,Pg No 12)						
	<b>Median</b>						
	Ch.41.0 to 488.0		1	894	0.35	0.10	31.29
	<b>Footpath-Kerb</b>						
	Left Side ( Govt. Office Side)						
	University College to Ch.0.0		1	138.00	0.35	0.10	4.83
	Ch.0.0 to 110.0		1	130.00	0.35	0.10	4.55
	Ch. 117.5 to Ch.141.8 (Rectangular Portion)		1	41.00	0.35	0.10	1.44
	Ch. 141.8 to Ch. 145.3(Quarter of Circle)		1	5.30	0.35	0.10	0.19
	Ch.150.05 to Ch.154.00(Quarter of Circle)		1	5.30	0.35	0.10	0.19
	Ch.154.0 to Ch.266.4(Rectangular Portion)		1	111.80	0.35	0.10	3.91
	Ch.266.4 to Ch.270.0 (Quarter of Circle)		1	4.70	0.35	0.10	0.16

Sl.No.	Description	Unit	No's	L	B	D	Qty.
	Ch.275.0 to Ch.278.4 (Quarter of Circle)		1	4.78	0.35	0.10	0.17
	Ch. 278.4 to Ch.311.6 (Rectangular Portion)		1	33.20	0.35	0.10	1.16
	Ch.311.6 to Ch.314.9(Quarter of Circle)		1	5.20	0.35	0.10	0.18
	Ch.320.0 to Ch.323.4(Quarter of Circle)		1	5.20	0.35	0.10	0.18
	Ch.323.4 to Ch.372.5 (Rectangular Portion)		1	49.20	0.35	0.10	1.72
	Ch.372.5 to Ch.376.0(Quarter of Circle)		1	5.62	0.35	0.10	0.20
	Ch.380 to Ch.384.00(Quarter of Circle)		1	5.87	0.35	0.10	0.21
	Ch.384.0 to Ch.327.8(Rectangular Portion)		1	43.90	0.35	0.10	1.54
	Ch. 327.8 Ch.431.8(Quarter of Circle)		1	6.57	0.35	0.10	0.23
	Ch.438.5 to Ch.441.7(Quarter of Circle)		1	4.98	0.35	0.10	0.17
	Ch.441.7 to Ch.471.8(Rectangular Portion)		1	30.10	0.35	0.10	1.05
	Ch.471.8 to Ch.474.3(Quarter of Circle)		1	4	0.35	0.10	0.14
	Ch.485.0 to Ch.488.1(Quarter of Circle)		1	4	0.35	0.10	0.14
	Ch.488.1 to Old kent Road		1	68	0.35	0.10	2.37
	Footpath RHS						
	Bibi alabi road to Ch.100.00		1	117	0.35	0.10	4.11
	Ch.100.0 to 180.00		1	80.68	0.35	0.10	2.82
	Ch.184.4 to Ch.525.195		1	400	0	0.10	14.00
		Cum				Total	76.95
7.00	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 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. (Page No 101,SI No : 14.6)						
	<b>Footpath</b>						
	Left Side ( Govt. Office Side)						
	University College to Ch.0.0		1	137	2.20		301.40
	Ch.0.0 to 110.0		1	130.76	3.62		473.35
	Ch. 117.5 to Ch.141.8 (Rectangular Portion)		1	41	3.70		151.70
				Area	-		
	Ch. 141.8 to Ch. 145.3(Quarter of Circle)		1	8.19	3.70		30.30
				-			
				Area	-		
	Ch.150.05 to Ch.154.00(Quarter of Circle)		1	7.32	8.19		59.95
	Ch.154.0 to Ch.266.4(Rectangular Portion)		1	111.8	3.40		380.12
				Area			
	Ch.266.4 to Ch.270.0 (Quarter of Circle)		1	6.47			6.47
				Area			
	Ch.275.0 to Ch.278.4 (Quarter of Circle)		1	6.7			6.70
	Ch. 278.4 to Ch.311.6 (Rectangular Portion)		1	33.2	3.60		119.52
				Area			
	Ch.311.6 to Ch.314.9(Quarter of Circle)		1	7.86			7.86
	Ch.320.0 to Ch.323.4(Quarter of Circle)		1	7.95			7.95
	Ch.323.4 to Ch.372.5 (Rectangular Portion)		1	49.2	3.95		194.34
	Ch.372.5 to Ch.376.0(Quarter of Circle)		1	9.18			9.18

Sl.No.	Description	Unit	No's	L	B	D	Qty.
				Area			
	Ch.380 to Ch.384.00(Quarter of Circle)		1	9.88			9.88
	Ch.384.0 to Ch.327.8(Rectangular Portion)		1	43.9	4.80		210.72
				Area			
	Ch. 327.8 Ch.431.8(Quarter of Circle)		1	12.35			12.35
				Area			
	Ch.438.5 to Ch.441.7(Quarter of Circle)		1	7.3			7.30
	Ch.441.7 to Ch.471.8(Rectangular Portion)		1	30.1	3.05		91.81
				Area			
	Ch.471.8 to Ch.474.3(Quarter of Circle)		1	4.82			4.82
				Area			
	Ch.485.0 to Ch.488.1(Quarter of Circle)		1	4.84			4.84
	Ch.488.1 to Old kent Road		1	66.14	2.63		174.17
	Footpath						
	Right Hand Side( Maidan Side)						
	Bibi Alabi Road to Ch.0.00		1	29	1.55		44.95
	Ch.0.00 to 100.00		1	84	2.03		170.80
	Ch.100.0 to Ch.102.8		1	2.8	2.00		5.60
	Ch.102.8 to Ch.177.5		1	74.7	1.50		112.05
				Area			
	Ch. 177.5 to Ch.179.4(Quarter of Circle)		1	1.78			1.78
				Area			
	Ch.184.4 to Ch.192.8		1	31.68			31.68
	Ch.192.8 to Ch.199.40		1	6.6	5.40		35.64
	Ch.199.4 to Ch.201.8		1	2.3	4.25		9.78
	Ch.201.80 to Ch.210.08		1	9	3.10		27.90
	Ch.210.08 to Ch.213.1		1	2.4	4.25		10.20
	Ch. 213.1 to Ch.214.8		1	1.7	5.40		9.18
	Ch.214.8 to Ch.217.2		1	2.4	4.25		10.20
	Ch.217.2 to Ch.220.07		1	3.5	3.14		10.99
	Ch.220.07 to Ch.223.0		1	2.4	4.25		10.20
	Ch.223.0 to Ch.226.4		1	3.2	5.40		17.28
	Ch. 226.4 to Ch.228.7		1	2.4	4.20		10.08
	Ch.228.7 to Ch.264.2		1	35.5	3.00		106.50
	Ch.264.2 to Ch.266.7		1	2.5	4.20		10.50
	Ch. 266.7 to Ch.268.9		1	2.1	5.40		11.34
	Ch.268.9 to Ch.271.2		1	2.3	4.20		9.66
	Ch.271.2 to Ch.274.4		1	3.2	3.00		9.60
	Ch. 274.4 to Ch.276.8		1	2.5	4.25		10.63
	Ch.276.8 to Ch.280.00		1	3.2	5.50		17.60
	Ch.280.0 to Ch.282.4		1	2.4	4.25		10.20
	Ch.282.4 to Ch.286.0		1	3.7	3.00		11.10
	Ch.286.0 to Ch.288.5		1	2.5	4.20		10.50
	Ch.288.5 to Ch.290.0		1	1.4	5.40		7.56
	Ch.290.0 to Ch.292.4		1	2.4	4.20		10.08
	Ch.292.4 to Ch.298.7		1	6.5	3.00		19.50
	Ch.298.7 to Ch.301.2		1	2.4	4.20		10.08
	Ch.301.2 to Ch.305.1		1	3.9	5.40		21.06
	Ch.305.1 to Ch.307.5		1	2.4	4.20		10.08
	Ch.307.5 to Ch.311.3		1	3.9	3.00		11.70
	Ch.311.3 to Ch.314.1		1	2.8	3.70		10.36
	Ch.314.1 to Ch.316.6		1	2.5	3.00		7.50
	Ch.316.6 to Ch.321.4		1	4.8	4.20		20.16
	Ch.321.4 to Ch.342.8		1	21.3	3.00		63.90
	Ch.342.8 to Ch.348.8		1	6	5.40		32.40
	Ch.348.8 to Ch.354.1		1	5.3	3.00		15.90
	Ch.354.1 to Ch.362.8		1	8.6	4.20		36.12
	Ch.362.8 to Ch.434.5		1	71.7	3.05		218.69
	Ch.434.5 to Ch.436.9		1	2.4	4.30		10.32
	Ch.436.9 to Ch.490.0		1	51.8	5.60		290.08
	Ch.490.0 to Ch.500.0		1	23.15	5.50		127.33

Sl.No.	Description	Unit	No's	L	B	D	Qty.
	Ch.500 to Maidan Road-RHS (Towards Hamilton circle)		1	45.6	1.60		72.96
	<b>Ded. Tectile Tiles</b>		-1	67.62	0.30		-20.29
	<b>Govt. Bldg.Side Footpath</b>						
	University College to Ch.0.00						
	Ch. 0.00 to 100.00		-1	115	0.30		-34.56
	Ch.110 to 134.5		-1	38	0.30		-11.35
	Ch.146.7 to Ch.170.0		-1	23	0.30		-6.88
	Ch.170.0 to 203.5-Bus shelter portion		-1	35	0.60		-20.82
	Ch.203.5 to Ch.225.0		-1	24	0.30		-7.28
	Ch.225.0 to Ch.252.1-Bus shelter portion		-1	27	0.60		-16.08
	Ch.252.1 to Ch. 260.00		-1	7	0.30		-2.10
	Ch.270.07 to Ch.303.40		-1	33	0.30		-9.77
	Ch.316.40 to Ch.327.50		-1	12	0.30		-3.58
	Ch.327.50 to Ch.353.40-Bus shelter portion		-1	26	0.60		-15.48
	Ch.353.40 to Ch.364.6		-1	12	0.30		-3.51
	Ch. 420 to Ch.376.7		-1	43	0.30		-12.99
	Ch.434.7 to Ch. 464.30		-1	29	0.30		-8.82
	Ch.480 to Ch.490.0		-1	9	0.30		-2.68
	Ch.490.0 to old kent road		-1	49	0.30		-14.64
	Stop Tiles		-12	0	0.90		-3.24
	At Pedstal Crossing-Stop Square		-1	1	0.90		-0.81
	At Pedstal Crossing-Stop Strip		-1	3	0.30		-0.90
	<b>Maidan Side Footpath</b>						
	Ch.188.2 to Ch.490.00		-1	302	0.30		-90.57
	At Pedstal Crossing-Square		-1	0	0.90		-0.27
	At Pedstal Crossing-Strip		-1	1	0.90		-0.81
	Ch.490.0 to maidan road(Hamilton Circle)		-1	3	0.30		-0.90
			-1	70	0.30		-21.04
		<b>sqm</b>				<b>Total</b>	<b>3677.07</b>
8.00	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 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)						
	<b>Govt. Bldg.Side Footpath</b>						
	University College to Ch.0.00		1	115	0.30		34.56
	Ch. 0.00 to 100.00		1	38	0.30		11.35
	Ch.110 to 134.5		1	23	0.30		6.88
	Ch.146.7 to Ch.170.0		1	35	0.60		20.82
	Ch.170.0 to 203.5-Bus shelter portion		1	24	0.30		7.28
	Ch.203.5 to Ch.225.0		1	27	0.60		16.08
	Ch.225.0 to Ch.252.1-Bus shelter portion		1	7	0.30		2.10
	Ch.252.1 to Ch. 260.00		1	33	0.30		9.77
	Ch.270.07 to Ch.303.40		1	12	0.30		3.58
	Ch.316.40 to Ch.327.50		1	26	0.60		15.48
	Ch.327.50 to Ch.353.40-Bus shelter portion		1	12	0.30		3.51
	Ch.353.40 to Ch.364.6		1	43	0.30		12.99
	Ch. 420 to Ch.376.7		1	29	0.30		8.82
	Ch.434.7 to Ch. 464.30		1	9	0.30		2.68
	Ch.480 to Ch.490.0		1	49	0.30		14.64
	Ch.490.0 to old kent road		12	0	0.90		3.24
	Stop Tiles		1	1	0.90		0.81
	At Pedstal Crossing-Stop Square		1	3	0.30		0.90
	At Pedstal Crossing-Stop Strip		0	-	-		0.00
	<b>Maidan Side Footpath</b>		1	302	0.30		90.57
	Ch.188.2 to Ch.490.00		1	0	0.90		0.27
	At Pedstal Crossing-Square		1	1	0.90		0.81
	At Pedstal Crossing-Strip		1	3	0.30		0.90
	Ch.490.0 to maidan road(Hamilton Circle)		1	70	0.30		21.04

Sl.No.	Description	Unit	No's	L	B	D	Qty.
		<b>sqm</b>				<b>Total</b>	<b>289.08</b>
9.00	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 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. (Page No 101,SI No : 14.7)						
	Right Hand Side( Maidan Side)						
	Ch.199.4 to Ch.201.8 ( Triangular Portion)		0.5	2.40	2.40		2.88
	Ch.201.8 to Ch.210.08(Rectangular Portion)		1	9.00	2.40		21.60
	Ch.210.08 to Ch.213.2(Triangular Portion)		0.5	2.40	2.40		2.88
	Ch.214.8 to Ch.217.2(Triangular Portion)		0.5	2.40	2.40		2.88
	Ch.217.2 to Ch.220.07(Rectangular Portion)		1.0	5.8	2.4		13.92
	Ch.220.07 to Ch.223.0(Triangular Portion)		0.5	1.7	2.4		2.04
	Ch.223.0 to Ch.263.7(Triangular Portion)		0.5	1.8	2.4		2.16
	Ch.226.7 to Ch.264.2(Rectangular Portion)		1.0	37.6	2.4		90.24
	Ch.264.2 to Ch.266.7(Triangular Portion)		0.5	2.4	2.4		2.88
	Ch.268.9 to Ch.271.2(Triangular Portion)		0.5	2.4	2.4		2.88
	Ch.271.2 to Ch.274.4 (Rectangular Portion)		1.0	3.2	2.4		7.68
	Ch.274.4 to Ch.276.8(Triangular Portion)		0.5	2.4	2.4		2.88
	Ch. 280.0 to Ch.282.5(Triangular Portion)		0.5	2.4	2.4		2.88
	Ch.282.5 to Ch.286.1 (Rectangular Portion)		1.0	3.6	2.4		8.64
	Ch. 286.1 to Ch.285.5 (Triangular Portion)		1.0	2.4	2.4		5.76
	Ch.290.0 to Ch.292.3(Triangular Portion)		0.5	2.4	2.3		2.76
	Ch.292.3 to Ch.298.7(Rectangular Portion)		1.0	6.5	2.3		14.95
	Ch.298.7 to Ch.301.0(Triangular Portion)		0.5	2.4	2.3		2.76
	Ch.305.1 to Ch.307.5(Triangular Portion)		0.5	2.4	2.3		2.76
	Ch.307.5 to Ch.311.3(Rectangular Portion)		1.0	3.9	2.3		8.97
	Ch.311.3 to Ch.312.7(Trapezoidal Portion)		1.0	1.6	2.3		3.68
	Ch.312.7 to Ch.314.1 (Trapezoidal Portion)		1.0	1.6	2.3		3.68
	Ch.314.1 to Ch.316.5(Rectangular Portion)		1.0	2.5	2.3		5.75
	Ch.316.5 to Ch.318.9		0.5	2.3	2.3		2.65
	Ch.318.9 to Ch.319.3 (Trapezoidal Portion)		0.5	2.1	2.3		2.42
	Ch.319.3 to Ch.341.2 (Rectangular Portion)		1.0	19.9	2.4		47.76
	Ch.350.03 to Ch.354.2(Rectangular Portion)		1.0	4.2	2.4		10.08
	Ch.354.2 to Ch.357.4(Trapezoidal Portion)		0.5	2.9	2.4		3.48
	Ch.360.0 to Ch.362.9 (Triangular Portion)		0.5	2.4	2.4		2.88
	Ch.362.9 to Ch.381.1(Rectangular Portion)		1.0	18.3	2.4		43.92
	Ch.381.1 to Ch.383.0(Triangular Portion)		0.5	1.9	2.4		2.28
	Ch.384.8 to Ch.386.3(Triangular Portion)		0.5	1.4	2.4		1.68
	Ch.386.3 to Ch.405.2(Rectangular Portion)		1.0	18.9	2.4		45.36
	Ch.405.2 to Ch.407.6(Triangular Portion)		0.5	2.4	2.4		2.88
	Ch.408.6 to Ch.410.8(Triangular Portion)		0.5	2.1	2.4		2.52
	Ch.410.8 to Ch.434.6(Rectangular Portion)		1.0	23.8	2.4		57.12
	Ch.434.6 to Ch.436.9(Triangular Portion)		0.5	2.4	2.4		2.88
		<b>Sqm</b>				<b>Total</b>	<b>445.41</b>

Sl.No.	Description	Unit	No's	L	B	D	Qty.
10.00	Providin and fixing pre cast solid concrete Kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165mm respectively,400mm high and 450mm in length finished with CM 1:3 Plastering and finishing cutting, including cost of all materials,labour,hire charges of machinery,loading,unloading,lead and lift,transportation etc.,complete (Page No 25,Sl No : 5.3)						
	<b>Footpath-Kerb</b>						
	Left Side ( Govt. Office Side)						
	University College to Ch.0.0		1	138			138.00
	Ch.0.0 to 110.0		1	130			130.00
	Ch. 117.5 to Ch.141.8 (Rectangular Portion)		1	41			41.00
	Ch. 141.8 to Ch. 145.3(Quarter of Circle)		1	5			5.30
	Ch.150.05 to Ch.154.00(Quarter of Circle)		1	5			5.30
	Ch.154.0 to Ch.266.4(Rectangular Portion)		1	112			111.80
	Ch.266.4 to Ch.270.0 (Quarter of Circle)		1	5			4.70
	Ch.275.0 to Ch.278.4 (Quarter of Circle)		1	5			4.78
	Ch. 278.4 to Ch.311.6 (Rectangular Portion)		1	33			33.20
	Ch.311.6 to Ch.314.9(Quarter of Circle)		1	5			5.20
	Ch.320.0 to Ch.323.4(Quarter of Circle)		1	5			5.20
	Ch.323.4 to Ch.372.5 (Rectangular Portion)		1	49			49.20
	Ch.372.5 to Ch.376.0(Quarter of Circle)		1	6			5.62
	Ch.380 to Ch.384.00(Quarter of Circle)		1	6			5.87
	Ch.384.0 to Ch.327.8(Rectangular Portion)		1	44			43.90
	Ch. 327.8 Ch.431.8(Quarter of Circle)		1	7			6.57
	Ch.438.5 to Ch.441.7(Quarter of Circle)		1	5			4.98
	Ch.441.7 to Ch.471.8(Rectangular Portion)		1	30			30.10
	Ch.471.8 to Ch.474.3(Quarter of Circle)		1	4			4.08
	Ch.485.0 to Ch.488.1(Quarter of Circle)		1	4			4.00
	Ch.488.1 to Old kent Road		1	68			67.77
	<b>Footpath RHS</b>						
	Bibi alabi road to Ch.100.00		1	117			117.34
	Ch.100.0 to 180.00		1	81			80.68
	Ch.184.4 to Ch.525.195		1	400			400.00
	<b>Building Side Landscape -Kerb Stone</b>						
	Ch.10.0 to Ch.100.0(Compund wall Side)		1.00	102.60			102.60
	Ch.10.0 to Ch.100.0(Carriageway Side)		1.00	95.77			95.77
	Ch.110.0 to Ch.137.9(Compund Wall Side)		1.00	39.34			39.34
	Ch.110.0 to Ch.137.9(Carriageway Side)		1.00	34.64			34.64
	Ch.143.3 to Ch.167.9(Compound Wall Side)		1.00	24.80			24.80
	Ch.143.3 to Ch.167.9(Carriageway Side)		1.00	20.60			20.60
	Ch.204.2 to Ch.225.3 (Compound Wall Side)		1.00	21.68			21.68
	Ch.206.2 to Ch.221.3 (Carriageway Side)		1.00	16.20			16.20
	Ch.252.1 to Ch.261.6(Compound Wall Side)		1.00	10.10			10.10
	Ch.252.1 to Ch.261.6(Carriageway side)		1.00	4.90			4.90
	Ch.267.5 to Ch.307.3(Compound wall side)		1.00	41.10			41.10
	Ch.267.5 to Ch.307.3(Carriageway side)		1.00	36.70			36.70
	312.5 to Ch.327.6 ( Compound Wall side)		1.00	15.70			15.70

Sl.No.	Description	Unit	No's	L	B	D	Qty.
	312.5 to Ch.327.6 ( Carriageway side)		1.00	10.10			10.10
	353.3 to Ch.368.5(Compound wall side)		1.00	15.80			15.80
	353.3 to Ch.368.5(Carriageway side)		1.00	8.80			8.80
	372.8 to Ch.424.3( Compound wall side)		1.00	52.40			52.40
	372.8 to Ch.424.3(Carriageway side)		1.00	43.20			43.20
	<b>Maidan Side Landscape-Kerb Stone</b>						
	Ch.184.5 to 197.7(Shrub)Compound Wall Side		1.00	14.90			14.90
	Ch.190.0 to Ch.211.7(Shurb)-Carriagewayside		1.00	24.71			24.71
	217.20 to Ch.222.9 (Shrub)		1.00	7.40			7.40
	Ch.226.4 to Ch.266.2		1.00	41.10			41.10
	Ch. 270.0 to Ch.276.4		1.00	7.00			7.00
	Ch.280.4 to Ch.287.4		1.00	8.60			8.60
	291.4 to Ch.299.10		1.00	9.20			9.20
	Ch.306.3 to Ch.311.3		1.00	6.20			6.20
	Ch.311.3 to Ch.314.1		1.00	4.58			4.58
	Ch.214.10 to Ch.316.6		1.00	3.80			3.80
	Ch.322.9 to Ch.340.0		1.00	19.20			19.20
	Ch.351.2 to Ch.355.6		1.00	5.60			5.60
	Ch.363.0 to Ch.381.7		1.00	19.70			19.70
	Ch.386.2 to Ch.405.3		1.00	20.80			20.80
	Ch.434.5 to Ch.487.4		1.00	54.68			54.68
		<b>Rmt</b>				<b>Total(A)</b>	<b>2146.49</b>
	B= A/0.4m( Width of Kerb Stone)	<b>Nos</b>				<b>Total(B)</b>	<b>5367.00</b>
11.00	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)						
	<b>Median</b>						
	Ch.41.0 to 488.0	<b>Rmt</b>	2	447			<b>894.00</b>
	Width of Kerb stone=0.4m	<b>Nos.</b>		894/0.4			<b>2235.00</b>
12.00	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 specifications. MORTH Chapter 8 (Page No 182,SI No : 24.1)						
	<b>Footpath-Kerb</b>						
	<b>Left Side ( Govt. Office Side)</b>						
	University College to Ch.0.0		1	138		0.27	37.67
	Ch.0.0 to 110.0		1	130		0.27	35.49
	Ch. 117.5 to Ch.141.8 (Rectangular Portion)		1	41		0.27	11.19
	Ch. 141.8 to Ch. 145.3(Quarter of Circle)		1	5		0.27	1.45
	Ch.150.05 to Ch.154.00(Quarter of Circle)		1	5		0.27	1.45
	Ch.154.0 to Ch.266.4(Rectangular Portion)		1	112		0.27	30.52
	Ch.266.4 to Ch.270.0 (Quarter of Circle)		1	5		0.27	1.28
	Ch.275.0 to Ch.278.4 (Quarter of Circle)		1	5		0.27	1.30
	Ch. 278.4 to Ch.311.6 (Rectangular Portion)		1	33		0.27	9.06
	Ch.311.6 to Ch.314.9(Quarter of Circle)		1	5		0.27	1.42
	Ch.320.0 to Ch.323.4(Quarter of Circle)		1	5		0.27	1.42

Sl.No.	Description	Unit	No's	L	B	D	Qty.
	Ch.323.4 to Ch.372.5 (Rectangular Portion)		1	49		0.27	13.43
	Ch.372.5 to Ch.376.0(Quarter of Circle)		1	6		0.27	1.53
	Ch.380 to Ch.384.00(Quarter of Circle)		1	6		0.27	1.60
	Ch.384.0 to Ch.327.8(Rectangular Portion)		1	44		0.27	11.98
	Ch. 327.8 Ch.431.8(Quarter of Circle)		1	7		0.27	1.79
	Ch.438.5 to Ch.441.7(Quarter of Circle)		1	5		0.27	1.36
	Ch.441.7 to Ch.471.8(Rectangular Portion)		1	30		0.27	8.22
	Ch.471.8 to Ch.474.3(Quarter of Circle)		1	4		0.27	1.11
	Ch.485.0 to Ch.488.1(Quarter of Circle)		1	4		0.27	1.09
	Ch.488.1 to Old kent Road		1	68		0.27	18.50
	<b>Footpath RHS</b>						
	Bibi alabi road to Ch.100.00		1	117		0.27	32.03
	Ch.100.0 to 180.00		1	81		0.27	22.03
	Ch.184.4 to Ch.525.195		1	400		0.27	109.20
	<b>Median</b>						
	Ch.41.0 to 488.0		1	1,118		0.62	687.26
		<b>Sqm</b>				<b>Total</b>	<b>1043.42</b>
13.00	Supplying chainlink fencing 50mm size of 8 gauge properly stretched between existing rectangular poles and fixing suitable bolts and nuts,the free ends shall be welded to pole and block pipe at top and bottom as required including cost of all materials,labour,lead and lifts and as per the directions of the engineer in charge of work including two coats of approved quality paint over one coat of shop paint (Page No 262,Sl No : 37.3)						
	Ch.156.00 to Ch. 250.00 ( Maidan Side )	<b>Sqm</b>	1	94	2.5		<b>235.00</b>
14.00	Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)	<b>No's</b>					<b>10.00</b>
15.00	Providing and Fixing SS 304 Outdoor Dustbin of 55 liters capacity	<b>No's</b>					<b>8.00</b>
16.00	Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron	<b>No's</b>					<b>20.00</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**



**Name of the Work :- Mangalore Smart City**  
**3.2.2 Rate Analysis of Footpath and Parking area for Maidan Road**

**RATE ANALYSIS -FOOTPATH & PARKING AREA FOR MAIDAN ROAD**

1	KSRRB M200-14.2 Dismantling brick/Tile work /Paver Block B.in Cement Mortar retaining walls and other structure comprising of masonry cement concrete, wood work, Including T and P.sorting and dismantled material, disposal of unserviceable material and stacking the servicable material with all lifts complete as per specification. (Page No 137, SI No : 18.23)			
	Basic rate		244	
	Lead & Lift Charges As per page no.140 of S.R. (upto 5km)		16.25	
	Total		260.25	
	Add 12% For area weightage		31.23	
		<b>Rate</b>	<b>291.48</b>	<b>Cum</b>
2	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		10.00	
	Add 12% For area weightage		1.20	
		<b>Rate</b>	<b>11.20</b>	<b>Rmt</b>
3	Earth work excavation for foundation of structures upto 3 mtrs. by mechanical means as per drawing and technical specification, including setting out, providing shoring, strutting and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, filling back the excavated earth to the extent required and utilising / transporting the remaining earth upto 1.00km lead. including cost of labour, materials and HOM of machineries etc., complete. up to 3.0 m deep			
	Basic rate		53	
	Add 12% For area weightage		6.36	
		<b>Rate</b>	<b>59.36</b>	<b>Cum</b>
4	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 (Page No.149, SI No.19.64)			
	Basic rate		5	
	Add 12% For area weightage		0.6	
		<b>Rate</b>	<b>5.60</b>	<b>Sqm</b>
5	Granular Sub Base (GSB): KSRRB 400-1. Providing, laying, spreading and compacting specified graded, gravel or any other course material 60% and crushed stone aggregates of granite/ trap/ basalt 40% in sub-base course, close grading-I including premixing the material at OMC in mechanical mixer, carriage of mixed material, spreading in uniform layers with motor grader on a prepared base and compacting with power roller to achieve the desired density including all materials, labour, HOM of machinery, lighting, guarding, barricading and maintenance of diversion complete as per specifications. MORTH Chapter 4. (Page No 155, SI No : 20.2)			
	Basic rate		1212	
	Add 12% For area weightage		145.44	
		<b>Rate</b>	<b>1357.44</b>	<b>Cum</b>

6	KSRB 4.1.6 Providing and laying in position plain cement concrete of mix 1:2:4 with OPC cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @0.878cum and fine aggregates @ 0.459cum machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, including cost of all materials, labour, HOM of machinery, curing complete as per specifications			
	Basic Rate		5441	
	Ded.Cement Cost ( 7.2 Rs./kg x240 kg)		-1728	
	Total		3713	
	Add 12% For area weightage		445.56	
	Add Cement cost(7.2Rs./kg x 240 kg)		1728	
		Rate	5886.56	Per
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal			
7	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 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. (Page No 101,SI No : 14.6)			
	Basic rate		912	
	Add 12% For area weightage		109.44	
		Rate	1021.44	Sqm
8	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 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	Sqm
9	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 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.			
	Basic rate		970	
	Add 12% For area weightage		116.4	
		Rate	1086.40	Sqm
10	Providin and fixing pre cast solid concrete Kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165mm respectively,400mm high and 450mm in length finished with CM 1:3 Plastering 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		313	
	Add 12% For area weightage		37.56	
		Rate	350.56	Nos.

11	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). (NON SOR,Rate analysis attached)			
	<b>Rate Arrived as per Rate analysis</b>	<b>Rate</b>	<b>1579.00</b>	<b>Nos.</b>
12	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		60	
	Add 12% For Area weightage		7.2	
		<b>Rate</b>	<b>67.20</b>	<b>Sqm</b>
13	Supplying chainlink fencing 50mm size of 8 gauge properly stretched between existing rectangular poles and fixing suitable bolts and nuts,the free ends shall be welded to pole and block pipe at top and bottom as required including cost of all materials,labour,lead and lifts and as per the directions of the engineer in charge of work including two coats of approved quality paint over one coat of shop paint (Page No 262,SI No : 37.3)			
	Basic Rate		659	
	Add 12% For Area weightage		79.08	
		<b>Rate</b>	<b>738.08</b>	<b>Sqm</b>
14	Providing and fixing of S.S. Bollards(SS304) on footpath as specified and directed by Engineer -in-charge (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.13</b>	<b>Rate</b>	<b>4500.00</b>	<b>Nos.</b>
15	Providing and Fixing SS 304 Outdoor Dustbin of 55 liters capacity (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.14</b>	<b>Rate</b>	<b>7500.00</b>	<b>Nos.</b>
16	Providing and Fixing Recessed Inception chamber cover - size: (1250 x 1250 x 80)mm Material: Cast Iron / Ductile Iron (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.15</b>	<b>Rate</b>	<b>3500.00</b>	<b>Nos.</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**

**3.3 BOQ of Storm water Drain for Maidan Road**

BOQ item No.	Specification	Unit	Quantity	Rate	Amount	Remarks
	<b>STORM WATER DRAIN</b>					
1	KSRB M200-15.2: dismantling of existing structures like culverts,bridges,retaining walls and other structure comprising of masinary, 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 materail with all the complete as per specifications.B.rubble stone masonry in cement mortar.MORTH specification No. 202 (Page no. 138,Item No.18.27 KPWD SOR 2016-17)	cum	40.5	273.28	11,068	
2	KSRB 2-2.1 Earth work excavation for foundation buildings,water supply, sanitary lines & electrical conduits ither in pits or in trenches 1.5 m above in width ,in ordinary soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m after breaking of clods complete as per specifications.Specification No.KBS 2.1 (a)/2.3.5 (Page No.5,Item No.2.3,KPWD SOR 2016-17)	cum	226.58	211.68	47,961	
	0-1.5 m depth below G.L.(includes pipe bedding and Manhole)					
3	KSRB 2-2.1 Earth work excavation for foundation buildings,water supply, sanitary lines & electrical conduits ither in pits or in trenches 1.5 m above in width ,in hard soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m after breaking of clods complete as per specifications.Specification No.KBS 2.1 (a)/2.3.5 (Page No.5,item No.2.4 KPWD SOR 2016-17)	cum	25.18	316.96	7,979	
	1.5 - 3.0 m depth below G.L.(includes pipe bedding and Manhole)				-	
4	Providing gravel bedding for levelling the trench surface for laying Sewerage pipes including cost of materials,labours etc., complete as directed by the engineer in charge. ( Page No.17,item No.6.1 ,KUWSDB SOR 2015-16)	Cum	20.25	276.64	5,602	
5	KSRB 4-1.7 ;Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @220kgs with 20 mm down size graded granitemetal coarse aggregates @0.56 cum and fine aggreaqtes @0.465 cum machin e mixed concrete laid in layers not exceeding 15 cms,thick well compacted in foundation includingcost of all materials,labour,HOM of machinery, curing complete as per specifications (Page No.13,item No.4.7 KPWD SOR 2016-17)	cum	15.00	5725.76	85,886	

BOQ item No.	Specification	Unit	Quantity	Rate	Amount	Remarks
6	KSRB 4.2.2: providing and laying in position reinforced cement concrete of design mix M-20 with OPC cement @ 320 Kgs. with 20 mm and down size graded granite metal coarse aggregate @0.69cum and fine aggregate @0.40 cum with super plasticiser @ 3 ltrs conforming to IS 9103-1989 reaffirmed -2008, machine mixed concrete laid and exceeding 15 cms thick, vibrated for all works in foundation for footings, pedestals, retaining walls, return walls, walls ( any thickness) including attached plasters, columns, piers, pillars, posts, struts, buttresses, blocks, anchor blocks, plinths etc., including cost of all materials, labours, HOM of machinery, curing, complete as per specifications. Specification No. KBS 4.1, 4.6 ( page No. 42, item No. 4.11 KPWD SOR 2016-17)	cum	125.78	5886.56	7,40,382	
7	KSRB 4.9.2 Providing TMT steel reinforcement for RCC work including straightening, cutting, bending, hooking, placing in position, lapping and for welding wherever required, tying with binding wire, anchoring to the adjoining members wherever necessary, as per designs ( laps, hooks, wastage shall not be measured and paid) including cost of all materials form work labour HOM of machineries etc., complete as per specifications. Specification No KBS 4.6.3 TMT bars Fe 500 (Pg.No.17, item No. 4.46.2, KPWD SOR 2016-17)-Revised	MT	7.95	79156.00	6,29,231	
8	KSRB 2.4 Refilling available earth around the pipe lines, cables in layers not exceeding 20 cm in depth , compacting each deposited layer by ramming after watering with all lead and lift including cost of all labour complete as per specifications. Specification No. KBS 2.10.2 (Page No. 6, Item No. 2.11 KPWD SOR 2016-17)	Cum	181.26	85.12	15,429	
9	Disposal of surplus earth including, loading, unloading conveyance within a distance of 5 Km and spreading as directed by the engineer in charge ( page No.144, item No.19.20 KPWD SOR 2016-17)	Cum	45.32	41.44	1,878	
10	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 KUW/SDB, SOR 2016-17)	Rmt	148.00	332.64	49,231	

BOQ item No.	Specification	Unit	Quantity	Rate	Amount	Remarks
11	Providing and fixing CI grating (325 x325 mm ) for road Gully cover,including fixing the cover and CM 1:3 plastering 20 mm thick to all exposed faces,curing for q0 days with all lead including cost of plastering but excluding cost of concrete etc.,complete (NON SOR Item)	Nos	50.00	893.00	44,650	
	RWH Structure					
12	Providing and filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering, including cost of all materials and labours with all lead and lift,complete as per specifications. (Page No 06,SI No : 2.15)	cum	22.5	2367.68	53,273	
13	Earthwork excavation in all soil dposits and filling sides of foundation upto plinth in layers not exceeding 20cms, in depth compacting each deposited layer by ramming after watering with all lead and lift including cost of all labour complete as per specificatons (Page No 06,SI No : 2.12)	cum	18.75	284.00	5,325	
14	Providing and filling sand in foundation upto plinth to required depth for sub soil tratement including watering,ramming with all lead and lift complete as per specifications. (Page No 06,SI No : 2.13)	cum	15.00	2391.00	35,865	
	<b>Total</b>				<b>17,33,760</b>	

**Executive Engineer  
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**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**  
**3.3.1 Measurement Sheet of Storm Water Drain for Maidan Road**

Sl.No.	Description of Work	Unit	No	L	B	D	Qty
1	KSRB M200-15.2: dismantling of existing structures like culverts,bridges,retaining walls and other structure comprising of masinary, cement concrete,wood work,steel work including T&P and scaffolding wherever necessary ,sorting the dismantled material,disposal of unserviceable materail and stacking the serviceable materail with all the complete as per specifications.B.rubble stone masonry in cement mortar.MORTH specification No. 202 (Page no. 138,Item No.18.27 KPWD SOR 2016-17)						
	a) Drain at RWH locations						
	at 50 m intervals						
	Concrete Walls ( 2.5 m length walls)						
	LHS						
	Ch- 30.0 m to 520 m	cum	10	5	0.15	1.5	11.25
	RHS						
	Ch- 30.0 m to 520 m	cum	10	5	0.15	1.5	11.25
	Base slab						
	LHS						
	Ch 30.0 m to 520 m	cum	10	2.5	1.8	0.2	9
	RHS						
	Ch-30.0 m to Ch-520.0 m		10	2.5	1.8	0.2	9
		<b>cum</b>					<b>40.5</b>
2	KSRB 2-2.1 Earth work excavation for foundation buildings,water supply, sanitary lines & electrical conduits ither in pits or in trenches 1.5 m above in width ,in ordinary soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m after breaking of clods complete as per specifications.Specification No.KBS 2.1 (a)/2.3.5 (Page No.5,Item No.2.3,KPWD SOR 2016-17)						
	a) Road Gully chamber to drain						
	at 20 m intervals						
	LHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	1.35	0.63	63.79
	RHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	1.35	0.63	63.79
	b) RWHs inside drain						
	at 50 m intervals						
	LHS						
	Ch -30.0 m to Ch- 520.0 m	cum	10	2.5	2.4	0.9	54.00
	RHS						
	Ch -30.0 m to Ch- 520.0 m	cum	10	2.5	2	0.9	45.00
		<b>cum</b>					<b>226.58</b>

Sl.No.	Description of Work	Unit	No	L	B	D	Qty
3	KSRB 2-2.1 Earth work excavation for foundation buildings,water supply, sanitary lines & electrical conduits either in pits or in trenches 1.5 m above in width ,in hard soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m after breaking of clods complete as per specifications.Specification No.KBS 2.1 (a)/2.3.5 (Page No.5,item No.2.4 KPWD SOR 2016-17)						
	a) Road Gully chamber to drain						
	at 20 m intervals						
	LHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	1.35	0.1	7.09
	RHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	1.35	0.1	7.09
	b) RWHS inside drain						
	at 50 m intervals						
	LHS						
	Ch -30.0 m to Ch- 520.0 m	cum	10	2.5	2.4	0.1	6.00
	RHS						
	Ch -30.0 m to Ch- 520.0 m	cum	10	2.5	2	0.1	5.00
		<b>cum</b>					<b>25.18</b>
4	Providing gravel bedding for levelling the trench surface for laying Sewerage pipes including cost of materials,labours etc., complete as directed by the engineer in charge. ( Page No.17,item No.6.1 ,KUWSDB SOR 2015-16)						
	a) Road Gully chamber to drain						
	at 20 m intervals						
	LHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	1.35	0.1	10.13
	RHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	1.35	0.1	10.13
		<b>cum</b>					<b>20.25</b>
5	KSRB 4-1.7 ;Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @220kgs with 20 mm down size graded granitemetal coarse aggregates @0.56 cum and fine aggregates @0.465 cum machine mixed concrete laid in layers not exceeding 15 cms,thick well compacted in foundation includingcost of all materials,labour,HOM of machinery, curing complete as per specifications (Page No.13,item No.4.7 KPWD SOR 2016-17)						
	a) Road Gully chamber to drain						
	at 20 m intervals						
	LHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	1	0.1	7.50
	RHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	1	0.1	7.50
		<b>cum</b>					<b>15</b>



Sl.No.	Description of Work	Unit	No	L	B	D	Qty
6	KSRB 4.2.2: providing and laying in position reinforced cement concrete of design mix M-20 with OPC cement @ 320 Kgs.with 20 mm and down size graded granite metal coarse aggregate @0.69cum and fine aggregate @0.40 cum with super plasticiser @ 3 ltrs conforming to IS 9103-1989 reaffirmed - 2008, machine mixed concrete laid and exceeding 15 cms thick,vibrated for all works in foundation for footings, pedestals,retaining walls, return walls,walls ( any thickness) including attached plasters,columns,piers,pillars,posts,struts,buttresses,b lovks,anchor blocks,plinths etc.,includingcost of all						
	a) Road Gully chamber to drain						
	at 20 m intervals						
	Walls from Road gully chamber to drain						
	Ch -30.0 m to Ch- 520.0 m	cum	25	6	0.15	0.45	10.13
	RHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	6	0.15	0.45	10.13
	Cover slab						
	LHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	0.75	0.15	8.44
	RHS						
	Ch -30.0 m to Ch- 520.0 m	cum	25	3	0.75	0.15	8.44
	Drain walls						
	at 50 m intervals						
	LHS						
	Ch- 30.0 m to 520 m	cum	10	5	0.15	1.5	11.25
	RHS						
	Ch- 30.0 m to 520 m	cum	10	5	0.15	1.5	11.25
	Drain cover slabs ( Replacing of damaged slabs)						
	Drain		(30% of total length of drain)				
	LHS						
	Cover slab	cum		147	1.5	0.15	33.08
	RHS						
	Cover slab	cum		147	1.5	0.15	33.08
		<b>cum</b>					<b>125.78</b>
7	KSRB 4.9.2 Providing TMT steel reinforcement for RCC work including straightening, cutting,bending, hooking,placing in position,lapping and for welding wherever required,tying with binding wire,anchoring to the adjoining members whereevr necessary, as per designs ( laps,hooks,wastage shall not be measured and paid) including cost of all materials form work labour HOM of machinaries etc., complete as per specifications.Specification No KBS 4.6.3 TMT bars Fe 500 (Pg.No.17,item No. 4.46.2,KPWD SOR 2016-17)						
	a) Road Gully chamber to drain						
	at 20 m intervals						
	Walls from Road gully chamber to drain	Kg	50	kg/cum	20.25		1012.5
	Cover slab	Kg	70	kg/cum	16.88		1181.25
	Drain walls	Kg	50	kg/cum	22.50		1125
	Drain cover slab ( 30% of total covers)	Kg	70	kg/cum	66.15		4630.5
		<b>Kg</b>					<b>7949.3</b>
		<b>MT</b>					<b>7.95</b>

Sl.No.	Description of Work	Unit	No	L	B	D	Qty
8	KSRB 2.4 Refilling available earth around the pipe lines, cables in layers not exceeding 20 cm in depth , compacting each deposited layer by ramming after watering with all lead and lift including cost of all labour complete as per specifications.Specification No.KBS 2.10.2 (Page No. 6,Item No. 2.11 KPWD SOR 2016-17)						
		<b>cum</b>	80% of Earth work Excavation				<b>181.26</b>
9	Disposal of surplus earth including,loading, unloading conveyance within a distance of 5 Km and spreading as directed by the engineer incharge ( page No.143,item No.19.20 KPWD SOR 2016-17)						
		<b>cum</b>	20% of Earth work excavation				<b>45.315</b>
10	Providing gully pipe lowering,laying of PVC 100 mm dia pps 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)						
	a) Gully Chamber to existing drain						
	at 20 m intervals with 3 m length pipe						
	LHS						
	Ch -30.0 m to Ch- 520.0 m	Rmt	1	490	(490 m x 3m /20)		74
	RHS						
	Ch-30.0 m to Ch-520.0 m	Rmt	1	490	(490 m x 3m /20)		74
		<b>Rmt</b>					<b>148</b>
11	Providing and fixing CI grating (325 x325 mm ) for road Gully cover,including fixing the cover and CM 1:3 plastering 20 mm thick to all exposed faces,curing for 70 days with all lead including cost of plastering but excluding cost of concrete etc.,complete (NON SOR Item)						
	Gully Chamber cover						
	at 20 m intervals						
	LHS						
	Ch -30.00 m to 520 m	Nos	1	490	( 490 m /20 m ) =24.5		25
	RHS						
	Ch -30.00 m to 520 m	Nos	1	490	(490 m /20 m)= 24.5		25
		<b>Nos</b>					<b>50</b>
12	Providing and filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering, including cost of all materials and labours with all lead and lift,complete as per specifications. (Page No 06,Sl No : 2.15)						
	RWH						
	at 50 m intervals						
	LHS						
	Ch 30.0 m to 520 .0 m	cum	10	2.5	1.5	0.3	11.25
	RHS						
	Ch 30.0 m to 520 .0 m	cum	10	2.5	1.5	0.3	11.25
		<b>cum</b>					<b>22.5</b>

Sl.No.	Description of Work	Unit	No	L	B	D	Qty
13	Earthwork excavation in all soil dpositis and filling sides of foundation upto plinth in layers not exceeding 20cms, in depth compacting each deposited layer by ramming after watering with all lead and lift including cost of all labour complete as per specifcatons (Page No 06,SI No : 2.12)						
	RWH						
	at 50 m intervals						
	LHS						
	Ch 30.0 m to 520 .0 m	cum	10	2.5	1.5	0.25	9.38
	RHS						
	Ch 30.0 m to 520 .0 m	cum	10	2.5	1.5	0.25	9.38
		<b>cum</b>					<b>18.75</b>
14	Providing and filling sand in foundation upto plinth to required depth for sub soil tratement including watering,ramming with all lead and lift complete as per specifications. (Page No 06,SI No : 2.12)						
	RWH						
	at 50 m intervals						
	LHS						
	Ch 30.0 m to 520 .0 m	cum	10	2.5	1.5	0.2	7.50
	RHS						
	Ch 30.0 m to 520 .0 m	cum	10	2.5	1.5	0.2	7.50
		<b>cum</b>					<b>15</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**  
**3.3.2 Rate Analysis of Storm water drain for Maidan Road**

**RATE ANALYSIS -STORM WATER DRAIN**

1	KSRB M200-15.2: dismantling of existing structures like culverts,bridges,retaining walls and other structure comprising of masinary, cement concrete,wood work,steel work including T&P and scaffolding wherever necessary ,sorting the dismantled material,disposal of unserviceable matreial and stacking the serviceable materail with all the complete as per specifications.B.rubble stone masonry in cement mortar.MORTH specification No. 202 (Page no. 138,Item No.18.27 KPWD SOR 2016-17)			
	Basic rate		244	
	Add 12% For area weightage		29.28	
		<b>Rate</b>	<b>273.28</b>	<b>Cum</b>
2	KSRB 2-2.1 Earth work excavation for foundation buildings,water supply, sanitary lines & electrical conduits either in pits or in trenches 1.5 m above in width ,in ordinary soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m after breaking of clods complete as per specifications.Specification No.KBS 2.1 (a)/2.3.5 (Page No.5,Item No.2.3,KPWD SOR 2016-17)			
	0-1.5 m depth below G.L(includes pipe bedding and Manhole)			
	Basic rate		189	
	Add 12% For area weightage		22.68	
		<b>Rate</b>	<b>211.68</b>	<b>Cum</b>
3	KSRB 2-2.1 Earth work excavation for foundation buildings,water supply, sanitary lines & electrical conduits either in pits or in trenches 1.5 m above in width ,in hard soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m after breaking of clods complete as per specifications.Specification No.KBS 2.1 (a)/2.3.5 (Page No.5,item No.2.4 KPWD SOR 2016-17)			
	1.5 - 3.0 m depth below G.L(includes pipe bedding and Manhole)			
	Basic rate		283	
	Add 12% For area weightage		33.96	
		<b>Rate</b>	<b>316.96</b>	<b>Cum</b>
4	Providing gravel bedding for levelling the trench surface for laying Sewerage pipes including cost of materials,labours etc., complete as directed by the engineer in charge. ( Page No.17,item No.6.1 ,KUWSDB SOR 2015-16)			
	Basic rate		247	
	Add 12% For area weightage		29.64	
		<b>Rate</b>	<b>276.64</b>	<b>Cum</b>
5	KSRB 4-1.7 ;Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @220kgs with 20 mm down size graded granitemetal coarse aggregates @0.56 cum and fine aggreahtes @0.465 cum machin e mixed concrete laid in layers not exceeding 15 cms,thick well compacted in foundation includingcost of all materials,labour,HOM of machinery, curing complete as per specifications (Page No.13,item No.4.7 KPWD SOR 2016-17)			
	Basic Rate		5282	
	Deduct the cost of cement(7.2 Rs/kg x 220 kg)		-1584	
	Total		3698	
	Add 12% For area weightage		443.76	
	Cement cost(7.2Rs./kg x240 kg)		1584	
		<b>Rate</b>	<b>5725.76</b>	<b>Cum</b>

6	KSRB 4.2.2: providing and laying in position reinforced cement concrete of design mix M-20 with OPC cement @ 320 Kgs.with 20 mm and down size graded granite metal coarse aggregate @0.69cum and fine aggregate @0.40 cum with super plasticiser @ 3 ltrs conforming to IS 9103-1989 reaffirmed -2008, machine mixed concrete laid and exceeding 15 cms thick,vibrated for all works in foundation for footings, pedestals,retaining walls, return walls,walls ( any thickness) including attached plasters,columns,piers,pillars,posts,struts,buttresses,bloks,anchor blocks,plinths etc.,includingcost of all materials,labours,HOM of machinery,curing,complete as per specifications.Specification No.KBS 4.1,4.6 ( page No.13,item No.4.11,KPWD SOR 2016-17)			
	Basic Rate		5441	
	Deduct the cost of cement(7.2 Rs/kg x 240 kg)		-1728	
	Total		3713	
	Add 12% For area weightage		445.56	
	Cement cost(7.2Rs./kg x240 kg)		1728	
		<b>Rate</b>	<b>5886.56</b>	<b>Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal			
7	KSRB 4.9.2 Providing TMT steel reinforcement for RCC work including straightening, cutting,bending, hooking,placing in position,lapping and for welding wherever required,tying with binding wire,anchoring to the adjoining members whereever necessary, as per designs ( laps,hooks,wastage shall not be measured and paid) including cost of all materials form work labour HOM of machinaries etc., complete as per specifications.Specification No KBS 4.6.3 TMT bars Fe 500 (Pg.No.17,item No. 4.46.2,KPWD SOR 2016-17)- Revised			
	Basic rate		70675	
	Add 12% For area weightage		8481	
		<b>Rate</b>	<b>79156.00</b>	<b>MT</b>
8	KSRB 2.4 Refilling available earth around the pipe lines, cables in layers not exceeding 20 cm in depth , compacting each deposited layer by ramming after watering with all lead and lift including cost of all labour complete as per specifications.Specification No.KBS 2.10.2 (Page No. 6,Item No. 2.11 KPWD SOR 2016-17)			
	Basic Rate		76	
	Add 12% For Area weightage		9.12	
		<b>Rate</b>	<b>85.12</b>	<b>Cum</b>
9	Disposal of surplus earth including,loading, unloading conveyance within a distance of 5 Km and spreading as directed by the engineer incharge ( page No.144,item No.19.20 KPWD SOR 2016-17)			
	Basic Rate		37	
	add 12% For Area weightage		4.44	
		<b>Rate</b>	<b>41.44</b>	<b>Cum</b>
10	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% For Area weightage		35.64	
		<b>Rate</b>	<b>332.64</b>	<b>Rmt</b>
11	Providing and fixing CI grating (325 x325 mm ) for road Gully cover,including fixing the cover and CM 1:3 plastering 20 mm thick to all exposed faces,curing for 70 days with all lead including cost of plastering but excluding cost of concrete etc.,complete (NON SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.16</b>	<b>Rate</b>	<b>893.00</b>	<b>No</b>
	RWH Structure			

12	Providing and filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering, including cost of all materials and labours with all lead and lift,complete as per specifications. (Page No 06,SI No : 2.15)			
	Basic Rate		2114.00	
	Add 12% For Area weightage		253.68	
		<b>Rate</b>	<b>2367.68</b>	<b>Cum</b>
13	Earthwork excavation in all soil dposits and filling sides of foundation upto plinth in layers not exceeding 20cms, in depth compacting each deposited layer by ramming after watering with all lead and lift including cost of all labour complete as per specificatons (Page No 06,SI No : 2.12)			
	Basic Rate		254.00	
	Add 12% For Area weightage		30.48	
		<b>Rate</b>	<b>284.00</b>	<b>Cum</b>
14	Providing and filling sand in foundation upto plinth to required depth for sub soil tratement including watering,ramming with all lead and lift complete as per specifications. (Page No 06,SI No : 2.13)			
	Basic Rate		2135.00	
	Add 12% For Area weightage		256.20	
		<b>Rate</b>	<b>2391.00</b>	<b>Cum</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**

**3.4 BOQ OF WATER SUPPLY FOR MAIDAN ROAD**

BOQ item No.	Description of work	Unit	Quantity	Rate	Amount	Remarks
<b>A</b>	<b>WATER SUPPLY MAIN LINES</b>					
1	KSRB 2-2.1 : earth work excavation for foundations of buildings, water supply & sanitary lines and electrical conduits etc., either in pits or in trenches 1.50 m and above in width ,in ordinary soil not exceeding 1.5 m in depth including dressing the bottom of sides of pits and trenches ,stacking the excavated stuff clear from edges of excavation with lead upto 50 m after braking of clods compliance as per specifications,Specificaation No.KBS .2.1(a)/2.3.5 (Page No.5,item No.2.3 KPWD SOR 2016-17)	cum	705.03	211.68	1,49,241	
2	KSRB 2-2.2 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in <b>hard soil</b> not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(b) / 2.3.5. (P.No. 5/I.No. 2.4 of CSR 2015-16)	Cum	705.03	316.96	2,23,466	
3	KSRB 13-9.1 : Providing and fixing to wall, ceiling and floor high density poly ethelene pipes 6.00 kgf/sq.cm working pressure following outside diameter raising mains & exposed dostribution pipes with special flanges, compression type fittings, wall clips, making good the wall, ceiling and floor, including cost of all materials, labour charges,HOM of equipments and testing complete as per specifications.Specification No. KBS 13.2,15.2/13.9 (Page No.94 Item No. 13.73.3/13.73.5 PWD SOR-2016-17)					
	75 mm dia	Rmt	490.00	449.12	2,20,069	
	110 mm dia	Rmt	545.00	639.52	3,48,538	
4	Supplying & fixing of AMR water meter size 15 mm inferential type,mangnbetically coupled, having dry dial, hermitically sealed totalizer conforming to MID standards (Page No.61,BWSSB SOR 2015-16)	No	2.00	37200.00	74,400	
5	KSRB 2-4 Refilling available earth around the pipe lines, cables in layers not exceeding 20 cms in depth , compacting each deposited layer by ramming after watering with all lead and lift includimng cost of all labour complete as per specifications. ( Page No. 6 item No.2.11, KPWD SOR 2016-17)	cum	1128.048	85.12	96,019	
6	KSRB M300-19 removal of unserviceable soil includimng excavation, loiading and disposal but excluding replacemnet by suitable soil which shall be paid seperatelky as per clause 300.5 complete as per specifications,MORTH specifications No. 301 ( page No.144, item No. 19.20 ,KPWD SOR 2016-17)	cum	282.012	41.44	11,687	

BOQ item No.	Description of work	Unit	Quantity	Rate	Amount	Remarks
<b>B</b>	<b>WATER SUPPLY- Tapping</b>					
7	KSRB 2-2.1 : earth work excavation for foundation buildings, water supply, sanitary lines & elctrical of conduits either in pits or in trenches 1.5 m and above in width , in ordinary soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m.after breaking of clods complete as per specification No. KSRB 2.1 (a)/2.3.5(Pg.No.5,item No.2.3,KPWD SOR 2016-17).	cum	0.36	211.68	76	
8	KSRB 4-1.7 ;Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @220kgs with 20 mm down size graded granitemetal coarse aggregates @0.56 cum and fine aggreagtes @0.465 cum machin e mixed concrete laid in layers not exceeding 15 cms,thick well compacted in foundation includingcost of all materials,labour,HOM of machinery, curing complete as per specifications (Page No.13,item No.4.7 KPWD SOR 2016-17)	cum	0.05	5725.76	292	
9	KSRB 4.2.7 Providing and laying vibrated M25 design mix for RCC work ( excluding cost of reinforcement) with 20 mm down size of approved gradation hard broken granite,trap basalt or any other approved hard aggregate including cost and conveyance of all materials with all lead & lift including weigh batch plant mixing,plywood /steel form work, centering,scaffolding,curing, plastering and smoothfinishing the exposed faces in CM 1:3 12 mm thick as per designs etc., complete for RCC shaft ( minimum cementb @ 340 kgs)(Pg No.13,item.4.12,KPWD SOR 2016-17)	cum	0.03	6837.28	175	
	<b>Top slab</b>					
10	KSRB 4.9.2 Providing TMT steel reinforcement for RCC work including straightening,cutting, bending hooking, placing position,lapping and /or welding wherever required,tying with bending wire , anchoring to the adjoining memebers 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. KBS 4.6.3 (Page No. 17 , item No. 4.46 and KPWD SOR 2016-17)	MT	0.003	79156.00	202	
11	KSRB 6-1.3:Providing and constructing burnt brick masonary for basement and super structure with approved quality of non-modular bricks of stadard size of class designation 3.5N with cement mortar 1:6 including cost of all materials,labour charges,scaffolding,curing complete as per specifications.specification No. KBS 6.3 ( Page No.27 , Item No 6.3 and KPWD SOR 2016-17) Chamber for meter	cum	0.15	7021.28	1,085	
		<b>TOTAL</b>			<b>11,25,250</b>	

Executive Engineer  
MSCL Mangaluru

Superintendent Engineer  
MSCL Mangaluru



**Name of the Work :- Mangalore Smart City**  
**3.4.1 MEASUREMENT SHEET OF WATER SUPPLY FOR MAIDAN ROAD**

Sl.No.	Description of Work	Unit	Nos.	L	B	D	Quantity
A	<b>WATER SUPPLY MAIN LINES</b>						
1	KSRB 2-2.1 : earth work excavation for foundations of buildings, water supply & sanitary lines and electrical conduits etc., either in pits or in trenches 1.50 m and above in width ,in ordinary soil not exceeding 1.5 m in depth including dressing the bottom of sides of pits and trenches ,stacking the excavated stuff clear from edges of excavation with lead upto 50 m after braking of clods compliance as per specifications,Specificaation No.KBS .2.1(a)/2.3.5 (Page No.5,item No.2.3 KPWD SOR 2016-17)						
	a) water supply						
	Along Maidan road						
	Rider main						
	LHS						
	Ch-30.0m to 520.00 m	Cum	0	490	0.675	1.08	0.00
	Rider and Distribution main						
	RHS						
	Ch- 30.00 m to 520.00 m	Cum	1	490	0.71	1.2	417.48
	Feeder main						
a	Along Maidan road						
	LHS						
	CH 0.0 to 110 m		0.5	110	0.675	1.2	44.55
b	From Maidan road to Railway quarters ( railway road)						
	LHS						
	Ch-0.00 m to 300.00m	Cum	1	300	0.675	1.2	243.00
		Cum					<b>705.03</b>
2	KSRB 2-2.2 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in hard soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(b) / 2.3.5. (P.No. 5/I.No. 2.4 of CSR 2015-16)						
	a) water supply						
	Along Maidan road						
	Rider main						
	LHS						
	Ch-30.0m to 520.00 m	Cum	0	490	0.675	0.12	0.00
	Rider and Distribution main						
	RHS						
	Ch- 30.00 m to 520.00 m	Cum	1	490	0.71	1.2	417.48
	Feeder main						
a	Along Maidan road						
	LHS						
	CH 0.0 to 110 m		0.5	110	0.675	1.2	44.55
b	From Maidan road to Railway quarters ( railway road)						
	LHS						
	Ch-0.00 m to 300.00m	Cum	1	300	0.675	1.2	243.00
		Cum					<b>705.03</b>

Sl.No.	Description of Work	Unit	Nos.	L	B	D	Quantity
3	KSRB 13-9.1 : Providing and fixing to wall, ceiling and floor high density poly ethelene pipes 6.00 kgf/sq.cm working pressure following outside diameter raising mains & exposed doistribution pipes with special flanges, compression type fittings, wall clips, making good the wall, ceiling and floor, including cost of all materials, labour charges,HOM of equipments and testing complete as per specifications.Specification No. KBS 13.2,15.2/13.9 (Page No.94 Item No. 13.73.3/13.73.5 PWD SOR-2016-17)						
	<b>a) water supply</b>						
	Along Maidan road						
	<b>75 mm dia</b>						
	LHS						
	Ch-30.0m to 520.00 m	Rmt	0	490			0.00
	75 mm dia -1No.and 110 mm doia -1No						
	RHS						
	Ch- 30.00 m to 520.00 m	Rmt	1	490			490.00
				Total length of pipe 75m			<b>490.00</b>
	<b>Feeder main-110mm</b>						
	Along Maidan road						
	CH 0.0 to 520.0	Rmt	0.5	490			245.00
	From Maidan road to Railway quarters ( railway road)						
	LHS						
	Ch-0.00 m to 300.00m	Rmt	1	300			300.00
		<b>Rmt</b>		Total length of pipe 110m			<b>545.00</b>
4	Supplying & fixing of AMR water meter size 15 mm inferential type,mangnbetically coupled, having dry dial, hermitically sealed totalizer conforming to MID standards (Page No.61,BWSSB SOR 2015-16)	<b>No</b>	2	1			2.00
5	KSRB 2-4 Refilling available earth around the pipe lines, cables in layers not exceeding 20 cms in depth , compacting each deposited layer by ramming after watering with all lead and lift includimng cost of all labour complete as per specifications. ( Page No. 6 item No.2.11, KPWD SOR 2016-17)						
	a) For one House connection	<b>Cum</b>		80%of Excavation			<b>1128.048</b>
6	KSRB M300-19 removal of unserviceable soil includimng excavation, loiading and disposal but excluding replacemnet by suitable soil which shall be paid seperatelky as per clause 300.5 complete as per specifications,MORTH specifications No. 301 ( page No.144, item No. 19.20 ,KPWD SOR 2016-17)						
		<b>Cum</b>		20%of Excavation			<b>282.012</b>

Sl.No.	Description of Work	Unit	Nos.	L	B	D	Quantity
	<b>WATER SUPPLY- HOUSE SERVICE CONNECTIONS</b>			(Qty for one House connection)			
7	KSRB 2-2.1 : earth work excavation for foundation buildings, water supply, sanitary lines & electrical of conduits either in pits or in trenches 1.5 m and above in width, in ordinary soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m. after breaking of clods complete as per specification No. KSRB 2.1 (a)/2.3.5(Pg.No.5,item No.2.3,KPWD SOR 2016-17).						
		<b>cum</b>	2	0.615	0.415	0.7	<b>0.36</b>
8	KSRB 4-1.7 ;Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @220kgs with 20 mm down size graded granite metal coarse aggregates @0.56 cum and fine aggregates @0.465 cum machine mixed concrete laid in layers not exceeding 15 cms, thick well compacted in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications (Page No.13,item No.4.7 KPWD SOR 2016-17)						
		<b>cum</b>	2	0.615	0.415	0.1	<b>0.05</b>
9	KSRB 4.2.7 Providing and laying vibrated M25 design mix for RCC work ( excluding cost of reinforcement) with 20 mm down size of approved gradation hard broken granite, trap basalt or any other approved hard aggregate including cost and conveyance of all materials with all lead & lift including weigh batch plant mixing, plywood /steel form work, centering, scaffolding, curing, plastering and smooth finishing the exposed faces in CM 1:3 12 mm thick as per designs etc., complete for RCC shaft ( minimum cement @ 340 kgs)(Pg No.13,item.4.12,KPWD SOR 2016-17)						
		<b>cum</b>	2	0.615	0.415	0.05	<b>0.03</b>
10	KSRB 4.9.2 Providing TMT steel reinforcement for RCC work including straightening, cutting, bending hooking, placing position, lapping and /or welding wherever required, tying with bending wire, anchoring to the 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. KBS 4.6.3 (Page No. 17, item No. 4.46 and KPWD SOR 2016-17)						
	a) For one House connection	<b>MT</b>	50	kg/cum	0.051		<b>0.0026</b>
11	KSRB 6-1.3: Providing and constructing burnt brick masonry for basement and super structure with approved quality of non-modular bricks of standard size of class designation 3.5N with cement mortar 1:6 including cost of all materials, labour charges, scaffolding, curing complete as per specifications. specification No. KBS 6.3 ( Page No.27, Item No 6.3 and KPWD SOR 2016-17) Chamber for meter						
	a) For one House connection	<b>cum</b>	4	1.03	0.125	0.3	<b>0.15</b>
<div> <div>Executive Engineer MSCL Mangaluru</div> <div>Superintendent Engineer MSCL Mangaluru</div> </div>							

**Name of the Work :- Mangalore Smart City**  
**3.4.2 Rate Analysis of Water Supply for Maidan Road**

**RATE ANALYSIS -WATER SUPPLY**

1	KSRB 2-2.1 : earth work excavation for foundations of buildings, water supply & sanitary lines and electrical conduits etc., either in pits or in trenches 1.50 m and above in width ,in ordinary soil not exceeding 1.5 m in depth including dressing the bottom of sides of pits and trenches ,stacking the excavated stuff clear from edges of excavation with lead upto 50 m after braking of clods compliance as per specifications,Specificaation No.KBS .2.1(a)/2.3.5 (Page No.5,item No.2.3 KPWD SOR 2016-17)			
	Basic rate		189	
	Add 12% For area weightage		22.68	
		<b>Rate</b>	<b>211.68</b>	<b>Cum</b>
2	KSRB 2-2.2 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in hard soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(b) / 2.3.5. (P.No. 5/I.No. 2.4 of CSR 2015-16)			
	Basic rate		283	
	Add 12% For area weightage		33.96	
		<b>Rate</b>	<b>316.96</b>	<b>Cum</b>
3	KSRB 13-9.1 : Providing and fixing to wall, ceiling and floor high density poly ethelene pipes 6.00 kgf/sq.cm working pressure following outside diameter raising mains & exposed dostrubution pipes with special flanges, compression type fittings, wall clips, making good the wall, ceiling and floor, including cost of all materials, labour charges,HOM of equipments and testing complete as per specifications.Specification No. KBS 13.2,15.2/13.9 (Page No.94 Item No. 13.73.3/13.73.5 PWD SOR-2016-17)			
a	110 mm dia			
	Basic rate		571	
	Add 12% For area wightage		68.52	
		<b>Rate</b>	<b>639.52</b>	<b>Rmt</b>
b	75 mm dia			
	Basic rate		401	
	Add 12% For Area wightage		48.12	
		<b>Rate</b>	<b>449.12</b>	<b>Rmt</b>
4	Supplying & fixing of AMR water meter size 15 mm inferential type,mangnbetically coupled, having dry dial, hermitically sealed totalizer conforming to MID standards (Page No.61,BWSSB SOR 2015-16)			
	Basic rate		37200	
		<b>Rate</b>	<b>37200.00</b>	<b>No</b>
5	KSRB 2-4 Refilling available earth around the pipe lines, cables in layers not exceeding 20 cms in depth , compacting each deposited layer by ramming after watering with all lead and lift includimng cost of all labour complete as per specifications. ( Page No. 6 item No.2.11, KPWD SOR 2016-17)			
	Basic rate		76	
	Add 12% For area wightage		9.12	
		<b>Rate</b>	<b>85.12</b>	<b>Cum</b>

6	KSRB M300-19 removal of unserviceable soil including excavation, loading and disposal but excluding replacement by suitable soil which shall be paid separately as per clause 300.5 complete as per specifications, MORTH specifications No. 301 ( page No.144, item No. 19.20 ,KPWD SOR 2016-17)			
	Basic rate		37	
	Add 12% for area weightage		4.44	
		<b>Rate</b>	<b>41.44</b>	<b>Cum</b>
7	KSRB 2-2.1 : earth work excavation for foundation buildings, water supply, sanitary lines & electrical of conduits either in pits or in trenches 1.5 m and above in width , in ordinary soil not exceeding 1.5 m in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead up to 50 m. after breaking of clods complete as per specification No. KSRB 2.1 (a)/2.3.5(Pg.No.5,item No.2.3,KPWD SOR 2016-17).			
	Basic rate		189	
	Add 12% For area weightage		22.68	
		<b>Rate</b>	<b>211.68</b>	<b>Cum</b>
8	KSRB 4-1.7 ;Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @220kgs with 20 mm down size graded granite coarse aggregates @0.56 cum and fine aggregates @0.465 cum machine mixed concrete laid in layers not exceeding 15 cms, thick well compacted in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications (Page No.13,item No.4.7 KPWD SOR 2016-17)			
	Basic Rate		5282	
	Ded.Cement cost( 7.2 Rs./kg x220 kg)		-1584	
	Total		3698	
	Add 12% For area weightage		443.76	
	Cement cost(7.2Rs./kg x 220 kg)		1584	
		<b>Rate</b>	<b>5725.76</b>	<b>Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal			
9	KSRB 4.2.7 Providing and laying vibrated M25 design mix for RCC work ( excluding cost of reinforcement) with 20 mm down size of approved gradation hard broken granite, trap basalt or any other approved hard aggregate including cost and conveyance of all materials with all lead & lift including weigh batch plant mixing, plywood /steel form work, centering, scaffolding, curing, plastering and smooth finishing the exposed faces in CM 1:3 12 mm thick as per designs etc., complete for RCC shaft ( minimum cement @ 340 kgs)(Pg No.13,item.4.12,KPWD SOR 2016-17)			
	Basic Rate		6367	
	Ded.Cement cost(7.2 Rs./kg x340kg)		-2448	
	Total		3919	
	Add 12% For area weightage		470.28	
	Cement cost(7.2Rs./kg x340kg)		2448	
		<b>Rate</b>	<b>6837.28</b>	<b>Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal			

10	KSRB 4.9.2 Providing TMT steel reinforcement for RCC work including straightening, cutting, bending hooking, placing position, lapping and /or welding wherever required, tying with bending wire, anchoring to the 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. KBS 4.6.3 (Page No. 17, item No. 4.46 and KPWD SOR 2016-17)			
	Basic Rate		70675	
	Add 12% area weightage		8481	
		<b>Rate</b>	<b>79156.00</b>	<b>MT</b>
11	KSRB 6-1.3: Providing and constructing burnt brick masonry for basement and super structure with approved quality of non-modular bricks of standard size of class designation 3.5N with cement mortar 1:6 including cost of all materials, labour charges, scaffolding, curing complete as per specifications. specification No. KBS 6.3 (Page No. 27, Item No 6.3 and KPWD SOR 2016-17) Chamber for meter			
	Basic Rate		6269	
	Add 12% For area weightage		752.28	
		<b>Rate</b>	<b>7021.28</b>	<b>Cum</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Manglore Smart City**  
**3.5 BOQ Of Electrical Lighting for Maidan Road**

Item No.	Description	Unit	Qty	Rate	Amount	Remarks
<b>1.0</b>	<b>Lighting Fixtures</b>					
1.1	LED Post Top Lantern Garden Supply of LED Post top lantern with system 24 wattage, housing & frame shall be of powder coated, die cast, aluminium, diffuser with high density polyethylene IP 65 EPDM Gasket, life 50000 Hrs. @L70 shall be conforming to IS 10322/part 5/section 5 @230V. 5 years Warranty against any manufacturing defect working under standard electrical condition	Nos.	108	15,930.00	17,20,440	
1.2	Fixing charges for 1.1 (Non SOR Item)	Nos.	108	200.00	21,600	
1.3	LED Street Light Supply of 180 Watt LED street light with pressure die cast aluminium housing body with optimal heat sink for better thermal dissipation. Diffuser with injection moulded & is made of polycarbonate material with high transmission index delivering superior high light output. Rated life burning Hrs 50000 hr@lumen maintenance of 70%. CCT >5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire >IK 08. Power factor>0.9 with mains current should not be greater than 0.1A to 0.7A & surge protection min 4 KV along with over voltage/over load, short circuit/ miswiring protection. Compatible for pole mounting with outer dia of 40 mm to 50 mm. Universal voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Over load & short circuit protection ensures reliable operation in spite of problem in output side. Compliance to IS 10322/IEC 60598, LM 79 & LM 80.	Nos.	36	54,000.00	19,44,000	
1.4	Fixing charges for 1.3 (Non SOR Item)	Nos.	72	250.00	18,000	
<b>2.0</b>	<b>Lighting Poles</b>					
2.1	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	Nos	108	7,398.00	7,98,984	
2.2	Lighting Pole, 9 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 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.	6	17,118.00	1,02,708	
2.3	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	3,540.00	21,240	

Item No.	Description	Unit	Qty	Rate	Amount	Remarks
2.4	Fixing charges for 2.3 (Non SOR Item)	Nos.	6	250.00	1,500	
2.5	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.	18	700.00	12,600	



Item No.	Description	Unit	Qty	Rate	Amount	Remarks
<b>3.0</b>	<b>Lighting Panel</b>					
3.1	Street Light Control Panel (SLCP) Supply, installation, testing and commissioning of SLCP Shall be conforming following IS standards – IS: 2147 – 1962 Degree of protection Floor / wall/ structure mounted, free standing, suitable for cable entry from bottom side, dust proof, vermin proof, 3 phase and neutral, bus bar, aluminium, neutral bus shall be of same size as phase bus bars, Short circuit capacity for the bus bars and switches shall be 10 kA, as SLD No. 1.01 (Non SOR Item)	No.	1	50,000.00	50,000	
<b>4.0</b>	<b>Cabling</b>					
4.1	LT cable Supplying of 1.1 kV LT UG 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	Rmt	3,000	117.00	3,51,000	
4.2	Supply and drawing Flexible Multicore cable manufactured with electrolytic grade flexible copper with low conductor conforming to table 3 class of 5 of IS:8130-1984 and (Virgin) PVC insulation and sheathed suitable for working voltage up to 1100 Volts as per IS-694:1990 & conforming to GTP of GROUP - A 2Cx2.5 Sq.mm	Rmt	583	59.10	34,455	
4.3	Supply and laying of sand, cables for 4.1 (Ref KPWD SOR Material Component, SI No.56, Page. No.II)	Cum	39.60	1,700.00	67,320	
4.4	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	912	11.31	10,315	
4.5	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	456	3.12	1,423	
<b>5.0</b>	<b>Dismantling</b>					
5.1	Dismantling, removal, transportation to client's storage place existing lighting poles (Non SOR Item)	Nos.	6	1,000.00	6,000	
5.2	Dismantling, removal, transportation to client's storage place existing Street light fixtures (Non SOR Item)	Nos.	36	250.00	9,000	
<b>6.0</b>	<b>Civil work</b>					
6.1	Earth Work					
6.2	<b>Excavation for laying of lighting cable</b> KSRRB 300 1 Erthwork excavation by manual means in ordinary soil involving an average horizontal throw up to 2 m and an average lift up to 1.5 m, excavated surface leveled and sides neatly dressed, the disposed earth to be leveled neatly after breaking of clods complete as per specifications MORTH/Chapter 3	Cum	198	91.84	18,184	
6.3	Excavation for civil foundation for 4 m lighting poles Earth work excavation for foundation of structures upto 3 mtrs. by mechanical means as per drawing and technical specification, including setting out, providing shoring, strutting and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, filling back the excavated earth to the extent required and utilising / transporting the remaining earth upto 1.00km lead. including cost of labour, materials and HOM of machineries etc., complete. up to 3.0 m deep	Cum	17.50	59.36	1,039	

Item No.	Description	Unit	Qty	Rate	Amount	Remarks
6.4	For 4 m poles foundation : Shuttering Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, laborir complete as per specificaitons. (KPWD SOR,Page No 15,SI No : 4.28)	Sqm	69.98	258.72	18,106	
6.5	For 4 m poles : Casting KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregtes @ 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. (KPWD SOR,Page No 15,SI No : 4.28)	Cum	17.50	5,886.56	1,02,991	
7.0	<b>Earthing system</b>					
7.1	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	Kit	4	5,500.00	22,000	
7.2	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	Rmt	1155	19.50	22,523	
	<b>TOTAL FOR STREET LIGHTING SYSTEM</b>				<b>53,55,428</b>	

Executive Engineer  
MSCL Mangaluru

Superintendent Engineer  
MSCL Mangaluru

**Name of the Work :- Mangalore Smart City**  
**3.5.1 MEASUREMENT SHEET OF ELECTRICAL LIGHTING FOR MAIDAN ROAD**

SI.No.	Description of Work	Unit	Nos.	L	B	D	Quantity
<b>1</b>	<b>Lighting Fixtures</b>						
1.1	LED Post Top Lantern Garden Supply of LED Post top lantern with system 24 wattage, housing & frame shall be of powder coated, die cast, aluminium, diffuser with high density polyethylene IP 65EPDM Gasket, life 50000 Hrs. @L70 shall be conforming to IS 10322/part 5/section 5 @230V. 5 years Warranty against any manufacturing defect working under standard electrical condition	Nos	108				108
1.2	Fixing charges for 1.1 (Non SOR Item)	Nos	108				108
1.3	LED Street Light Supply of 180 Watt LED street light with pressure die cast aluminium housing body with optimal heat sink for better thermal dissipation. Diffuser with injection moulded & is made of polycarbonate material with high transmission index delivering superior high light output. Rated life burning Hrs 50000 hr@lumen maintenance of 70%. CCT >5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire >IK 08. Power factor>0.9 with mains current should not be greater than 0.1A to 0.7A & surge protection min 4 KV along with over voltage/over load, short circuit/ miswiring protection. Compatible for pole mounting with outer dia of 40 mm to 50 mm. Universal voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Over load & short circuit protection ensures reliable operation in spite of problem in output side. Compliance to IS 10322/IEC 60598, LM 79 & LM 80. Adherence with ROHs. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED light fixture with watt system Power consumption, LED efficiency>130lm/W at 1 W & fixture efficiency >80lm/W with nominal CRI>75. Luminaire manufacturer should have in house facility accredited by NABL/CPRI & any Government certified agency & Design & development facility certified by ISO 9001:2008. Housing with supplier word mark /name shall be Engraved /Embossing on the die cast housing/body part. Warranty of 5 years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED source manufacture. Suitable for B1/B2 roads as per IS 1944 part I & Part II.	Nos	36				36
1.4	Fixing charges for 1.3 (Non SOR Item)	Nos	72				72
<b>2</b>	<b>Lighting Poles</b>						
2.1	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	108				108
2.2	Lighting Pole, 9 m Fabrication, suppl 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 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)	Each	6				6
2.3	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	Each	6				6
2.4	Fixing charges for 2.3 (Non SOR Item)	Nos	6				6

Sl.No.	Description of Work	Unit	Nos.	L	B	D	Quantity
2.5	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	18				18
<b>3</b>	<b>Lighting Panel</b>						
3.1	Street Light Control Panel (SLCP) Supply, installation, testing and commissioning of SLCP Shall be conforming following IS standards – IS: 2147 – 1962 Degree of protection Floor / wall/ structure mounted, free standing, suitable for cable entry from bottom side, dust proof, vermin proof, 3 phase and neutral, bus bar, aluminium, neutral bus shall be of same size as phase bus bars, Short circuit capacity for the bus bars and switches shall be 10 kA, as SLD No. 1.01	Nos	1				1
<b>4</b>	<b>Cabling</b>						
4.1	LT cable Supplying of 1.1 kV LT UG 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)	Rmt	1	3000			3000
4.2	Supply and drawing Flexible Multicore cable manufactured with electrolytic grade flexible copper with low conductor conforming to table 3 class of 5 of IS:8130-1984 and (Virgin) PVC insulation and sheathed suitable for working voltage up to 1100 Volts as per IS-694:1990 & conforming to GTP of GROUP - A 2Cx2.5 Sq.mm (Ref Electrical SOR SI No.2.8,2.8.7)	Rmt	1	583			583
4.3	Supply and laying of sand, cables for 4.1 (Ref KPWD SOR Material Component,SI No.56,Page. No.II)	Cum	1	1320	0.3	0.1	39.6
4.4	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	912				912
4.5	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	456				456
<b>5</b>	<b>Dismantling</b>						
5.1	Dismantling, removal, transportation to client's storage place existing lighting poles (Non SOR Item)	Nos	6				6
5.2	Dismantling, removal, transportation to client's storage place existing Street light fixtures	Nos	36				36
<b>6</b>	<b>Civil work</b>						
6.1	Earth Work						
6.2	Excavation for laying of lighting cable KSRRB 300 1 Erthwork excavation by manual means in ordinary soil involving an average horizontal throw up to 2 m and an average lift up to 1.5 m, excavated surface leveled and sides neatly dressed, the disposed earth to be leveled neatly after breaking of clods complete as per specifications MORTH/Chapter 3 (KPWD SOR Page No 142,SI No : 19.1)	Cum	1	1320	0.5	0.3	198

SI.No.	Description of Work	Unit	Nos.	L	B	D	Quantity
6.3	Excavation for civil foundation for 4 m lighting poles Earth work excavation for foundation of structures upto 3 mtrs. by mechanical means as per drawing and technical specification, including setting out, providing shoring, strutting and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, filling back the excavated earth to the extent required and utilising / transporting the remaining earth upto 1.00km lead. including cost of labour, materials and HOM of machineries etc., complete. up to 3.0 m deep (Page No 7,KPWD Bangalore circle SI No : 2.23,2.23.1)	Cum	108	0.3	0.3	1.8	17.50
6.4	For 4 m poles foundation : Shuttering Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, laborir complete as per specifcations. (KPWD SOR,Page No 15,SI No : 4.28)	Sqm	432	0.3	0.3	1.8	69.98
6.5	For 4 m poles : Casting KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 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. (KPWD SOR,P.No.12, I.No. 4.6 of PWD SR 2015-16)	Cum	108	0.3	0.3	1.8	17.50
<b>7</b>	<b>Earthing system</b>						
7.1	Chemical Earthing for grounding,conduits,IC cut outs and otherequipments on the	Kit	4				4
7.2	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	2	577.5			1155

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**  
**3.5.2 Rate Analysis of Electrical Lighting for Maidan Road**

**RATE ANALYSIS -ELECTRICAL LIGHTING**

<b>1</b>	<b>Lighting Fixtures</b>			
1.1	LED Post Top Lantern Garden Supply of LED Post top lantern with system 24 wattage, housing & frame shall be of powder coated, die cast, aluminium , diffuser with high density polyethylene IP 65EPDM Gasket, life 50000 Hrs. @L70 shall be conforming to IS 10322/part 5/section 5 @230V. 5 years Warranty against any manufacturing defect working under standard electrical condition			
	Basic rate		15930	
		<b>Rate</b>	<b>15930.00</b>	<b>Nos.</b>
1.2	Fixing charges for 1.1 (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.17</b>	<b>Rate</b>	<b>200.00</b>	<b>Nos.</b>
1.3	LED Street Light Supply of 180 Watt LED street light with pressure die cast aluminium housing body with optimal heat sink for better thermal dissipation. Diffuser with injection moulded & is made of polycarbonate material with high transmission index delivering superior high light output. Rated life burning Hrs 50000 hr@lumen maintenance of 70%. CCT >5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire >IK 08. Power factor>0.9 with mains current should not be greater than 0.1A to 0.7A & surge protection min 4 KV along with over voltage/over load, short circuit/ miswiring protection. Compatible for pole mounting with outer dia of 40 mm to 50 mm. Universal voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Over load & short circuit protection ensures reliable operation in spite of problem in out put side. Compliance to IS 10322/IEC 60598, LM 79 & LM 80. Adherence with ROHs. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED light fixture with watt system Power consumption, LED efficiency>130lm/W at 1 W & fixture efficiency >80lm/W with nominal CRI>75. Luminaire manufacturer should have in house facility accredited by NABL/CPRI & any Government certified agency & Design & development facility certified by ISO 9001:2008. Housing with supplier word mark /name shall be Engraved /Embossing on the die cast housing/body part. Warranty of 5 years against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED source manufacture. Suitable for B1/B2 roads as per IS 1944 part I &			
	Basic rate		54000	
		<b>Rate</b>	<b>54000.00</b>	<b>Nos.</b>
1.4	Fixing charges for 1.3			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.7</b>	<b>Rate</b>	<b>250.00</b>	<b>Nos.</b>
<b>2</b>	<b>Lighting Poles</b>			

2.1	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			
	Basic rate		7398	
		<b>Rate</b>	<b>7398.00</b>	<b>Nos.</b>
2.2	Lighting Pole, 9 m Fabrication, suppl 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 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			
	Basic rate		17118	
		<b>Rate</b>	<b>17118.00</b>	<b>Nos.</b>
2.3	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	
		<b>Rate</b>	<b>3540.00</b>	<b>Nos.</b>
2.4	Fixing charges for 2.3 (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.18</b>	<b>Rate</b>	<b>250.00</b>	<b>Nos.</b>
2.5	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	
		<b>Rate</b>	<b>700.00</b>	<b>Nos.</b>
<b>3</b>	<b>Lighting Panel</b>			
3.1	Street Light Control Panel (SLCP) Supply, installation, testing and commissioning of SLCP Shall be conforming following IS standards – IS: 2147 – 1962 Degree of protection Floor / wall/ structure mounted, free standing, suitable for cable entry from bottom side, dust proof, vermin proof, 3 phase and neutral, bus bar, aluminium, neutral bus shall be of same size as			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.20</b>	<b>Rate</b>	<b>50000.00</b>	<b>Nos.</b>
<b>4</b>	<b>Cabling</b>			

4.1	LT cable Supplying of 1.1 kV LT UG 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			
	Basic Rate		117	
		<b>Rate</b>	<b>117.00</b>	<b>Rmt</b>
4.2	Supply and drawing Flexible Multicore cable manufactured with electrolytic grade flexible copper with low conductor conforming to table 3 class of 5 of IS:8130-1984 and (Virgin) PVC insulation and sheathed suitable for working voltage up to 1100 Volts as per IS-694:1990 & conforming to GTP of GROUP - A			
	Basic Rate		59.1	
		<b>Rate</b>	<b>59.10</b>	<b>Rmt</b>
4.3	Supply and laying of sand, cables for 4.1 (Ref KPWD SOR Material Component,SI No.56,Page. No.II)			
	Basic Rate		1700	
		<b>Rate</b>	<b>1700.00</b>	<b>Cum</b>
4.4	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 16 Sq.mm PVC Aluminium Conductor			
	Basic Rate		11.31	
		<b>Rate</b>	<b>11.31</b>	<b>Nos.</b>
4.5	Supplying tinned copper lugs and crimping and wiring to terminal point for wire of following sizes 2.5 sq. mm copper conductor			
	Basic Rate		3.12	
		<b>Rate</b>	<b>3.12</b>	<b>Nos.</b>
<b>5</b>	<b>Dismantling</b>			
5.1	Dismantling, removal, transportation to client's storage place existing lighting poles (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.22</b>	<b>Rate</b>	<b>1000.00</b>	<b>Nos.</b>
5.2	Dismantling, removal, transportation to client's storage place existing Street light fixtures (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.23</b>	<b>Rate</b>	<b>250.00</b>	<b>Nos.</b>
<b>6</b>	<b>Civil work</b>			
<b>6.1</b>	<b>Earth Work</b>			
6.2	Excavation for laying of lighting cable KSRRB 300 1 Erthwork excavation by manual means in ordinary soil involving an average horizontal throw up to 2 m and an average lift up to 1.5 m, excavated surface leveled and sides neatly dressed, the disposed earth to be leveled neatly after breaking of clods complete as per specifications MORTH/Chapter 3			
	Basic rate		82	
	Add 12% For area weightage		9.84	
		<b>Rate</b>	<b>91.84</b>	<b>Cum</b>



6.3	Excavation for civil foundation for 4 m lighting poles Earth work excavation for foundation of structures upto 3 mtrs. by mechanical means as per drawing and technical specification, including setting out, providing shoring, strutting and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom, filling back the excavated earth to the extent required and utilising / transporting the remaining earth upto 1.00km lead. including cost of labour, materials and HOM of machineries etc., complete. up to 3.0 m deep			
	Basic rate		53	
	Add 12% For area weightage		6.36	
		<b>Rate</b>	<b>59.36</b>	<b>Cum</b>
6.4	For 4 m poles foundation : Shuttering Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, laborior complete as per specifcaitions.			
	Basic rate		231	
	Add 12% For area weightage		27.72	
		<b>Rate</b>	<b>258.72</b>	<b>Sqm</b>
6.5	For 4 m poles : Casting KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 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. (KPWD SOR,P.No.12, I.No. 4.6			
	Basic Rate		5441.00	
	Ded.Cement Cost (7.2 Rs./kg x240 kg)		-1728	
	Total		3713.00	
	Add 12% For area weightage		445.56	
	Cement cost(7.2Rs./kg x 240 kg)		1728	
		<b>Rate</b>	<b>5886.56</b>	<b>Cum</b>
<b>7</b>	<b>Earthing system</b>			
7.1	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			
	Basic rate		5500	
		<b>Rate</b>	<b>5500.00</b>	<b>Kit</b>
7.2	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)			
	Basic rate		19.5	
		<b>Rate</b>	<b>19.50</b>	<b>Rmt</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Manglore Smart City**  
**3.6 BOQ of Hardscape for Maidan Road**

Sl.No.	Item	Unit	Quantity	Unit Rate	Amount	Remarks
<b>1</b>	<b>SEAT</b>					
1.1	KSRB 2-2.1 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(a) / 2.3.5.(KPWD SR16-17,Page No.5,SI No.2.3)	Cum	36.84	211.68	7,798	
1.2	KSRB 2.8 : Providing and Filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering,including cost of all materials and labour with all leads and lift.complete as per specifications.Specification No.KBS (2.15-KSRB 2.8) (Page No.6,SI.No.2.15)	Cum	14.12	2367.68	33,436	
1.3	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 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	6.14	5886.56	36,143	
1.4	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. (Page No.27,SI.No.6.7)	Cum	19.20	7487.20	1,43,744	
1.5	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.(Page No.114,SI No.15.16)	Sqm	87.08	247.52	21,554	
1.6	Providing and fixing 450mm wide X 600mmX 20mm thk.RIVERWASHED BLACK GRANITE CLADDING on surface of seating as mentioned in drawing 192-MSC-NR-WD-04 (Non SOR Item)	Sqm	46.50	3527.00	1,64,006	
1.7	Providing and fixing of MS flat 100 mm, 5 mm thick for length of seat i.e. total of 66.83 m, with vertical support of 10 gauge thick M.S sheet laser cut to profile shown in drawing 192-MSC-NR-WD-04 and c/c 1000 mm ( approved shop drawing ), screw plate at fixing with seat, Including Painting all complete to the satisfaction of the Landscape architect. (Non SOR Item)	MT	0.72	100000.00	72,103	
<b>2</b>	<b>Fabrication of M.S.Railing</b>				-	
2.1	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	7.62	100000.00	7,62,320	

Sl.No.	Item	Unit	Quantity	Unit Rate	Amount	Remarks
2.2	KSRB 2-2.1 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(a) / 2.3.5.(KPWD SR16-17,Page No.5,SI No.2.3)	Cum	8.30	211.68	1,757	
2.3	KSRB 2.8 : Providing and Filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering,including cost of all materials and labour with all leads and lift.complete as per specifications.Specification No.KBS (2.15-KSRB 2.8) (Page No.6,SI.No.2.15)	Cum	3.18	2367.68	7,533	
2.4	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 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	1.38	5886.56	8,143	
2.5	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 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. (Page No 101 SI No : 14.7)	Sqm	24.48	1086.40	26,595	
		<b>Total</b>			<b>12,85,133</b>	

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Manglore Smart City**  
**3.6.1 Measurement Sheet of Hardscape for Maidan Road**

Sl.No.	Item	Unit	No.	L	B	H	Qty.
<b>1</b>	<b>SEAT</b>						
1.1	KSRB 2-2.1 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(a) / 2.3.5.(KPWD SR16-17,Page No.5,SI No.2.3)						
	Interactive Seating						
	Ch.214.10	Cum	2	3.3	1	0.6	3.96
	Ch.224.70	Cum	2	3.3	1	0.6	3.96
	Ch.268.00	Cum	2	3.3	1	0.6	3.96
	Ch.278.40	Cum	2	3.3	1	0.6	3.96
	Ch.289.22	Cum	2	3.3	1	0.6	3.96
	Ch.302.8	Cum	2	4.3	1	0.6	5.16
	Ch.320.0	Cum	2	3.3	1	0.6	3.96
	Ch.383.74	Cum	2	3.3	1	0.6	3.96
	Ch.347.87	Cum	2	3.3	1	0.6	3.96
		<b>Cum</b>				<b>Total</b>	<b>36.84</b>
1.2	KSRB 2.8 : Providing and Filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering,including cost of all materials and labour with all leads and lift.complete as per specifications.Specification No.KBS (2.15-KSRB 2.8)						
	Interactive Seating						
	Ch.214.10	Cum	2	3.3	1	0.23	1.52
	Ch.224.70	Cum	2	3.3	1	0.23	1.52
	Ch.268.00	Cum	2	3.3	1	0.23	1.52
	Ch.278.40	Cum	2	3.3	1	0.23	1.52
	Ch.289.22	Cum	2	3.3	1	0.23	1.52
	Ch.302.8	Cum	2	4.3	1	0.23	1.98
	Ch.320.0	Cum	2	3.3	1	0.23	1.52
	Ch.383.74	Cum	2	3.3	1	0.23	1.52
	Ch.347.87	Cum	2	3.3	1	0.23	1.52
		<b>Cum</b>				<b>Total</b>	<b>14.12</b>
1.3	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 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)						
	Interactive Seating						
	Ch.214.10	Cum	2	3.3	1	0.1	0.66
	Ch.224.70	Cum	2	3.3	1	0.1	0.66
	Ch.268.00	Cum	2	3.3	1	0.1	0.66

Sl.No.	Item	Unit	No.	L	B	H	Qty.
	Ch.278.40	Cum	2	3.3	1	0.1	0.66
	Ch.289.22	Cum	2	3.3	1	0.1	0.66
	Ch.302.8	Cum	2	4.3	1	0.1	0.86
	Ch.320.0	Cum	2	3.3	1	0.1	0.66
	Ch.383.74	Cum	2	3.3	1	0.1	0.66
	Ch.347.87	Cum	2	3.3	1	0.1	0.66
		<b>Cum</b>				<b>Total</b>	<b>6.14</b>
1.4	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. (Page No.27,Sl.No.6.7)						
	Interactive Seating						
1	Ch.214.10						
	Long Wall	Cum	4	3	0.23	0.671	1.85
	Short Wall	Cum	4	0.6	0.23	0.671	0.37
2	Ch.224.70						
	Long Wall	Cum	4	3	0.23	0.671	1.85
	Short Wall	Cum	4	0.6	0.23	0.671	0.37
3	Ch.268.00						
	Long Wall	Cum	4	3	0.23	0.671	1.85
	Short Wall	Cum	4	0.6	0.23	0.671	0.37
4	Ch.278.40						
	Long Wall	Cum	4	3	0.23	0.671	1.85
	Short Wall	Cum	4	0.6	0.23	0.671	0.37
5	Ch.289.22						
	Long Wall	Cum	4	3	0.23	0.671	1.85
	Short Wall	Cum	4	0.6	0.23	0.671	0.37
6	Ch.302.8						
	Long Wall	Cum	2	4	0.23	0.671	1.23
	Short Wall	Cum	2	0.6	0.23	0.671	0.19
7	Ch.320.0						
	Long Wall	Cum	4	3	0.23	0.671	1.85
	Short Wall	Cum	4	0.6	0.23	0.671	0.37
8	Ch.383.74						
	Long Wall	Cum	4	3	0.23	0.671	1.85
	Short Wall	Cum	4	0.6	0.23	0.671	0.37
9	Ch.347.87						
	Long Wall	Cum	4	3	0.23	0.671	1.85
	Short Wall	Cum	4	0.6	0.23	0.671	0.37
		<b>Cum</b>				<b>Total</b>	<b>19.20</b>
1.5	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.(Page No.114,SI No.15.16)						
	Interactive Seating-Sides						
	Ch.214.10						
	Long Wall	Sqm	4	3		0.7	8.40
	Short Wall	Sqm	4	0.6		0.7	1.68
	Ch.224.70						
	Long Wall	Sqm	4	3		0.7	8.40
	Short Wall	Sqm	4	0.6		0.7	1.68

Sl.No.	Item	Unit	No.	L	B	H	Qty.
	Ch.268.00						
	Long Wall	Sqm	4	3		0.7	8.40
	Short Wall	Sqm	4	0.6		0.7	1.68
	Ch.278.40						
	Long Wall	Sqm	4	3		0.7	8.40
	Short Wall	Sqm	4	0.6		0.7	1.68
	Ch.289.22						
	Long Wall	Sqm	4	3		0.7	8.40
	Short Wall	Sqm	4	0.6		0.7	1.68
	Ch.302.8						
	Long Wall	Sqm	2	4		0.7	5.60
	Short Wall	Sqm	2	0.6		0.7	0.84
	Ch.320.0						
	Long Wall	Sqm	4	3		0.7	8.40
	Short Wall	Sqm	4	0.6		0.7	1.68
	Ch.383.74						
	Long Wall	Sqm	4	3		0.7	8.40
	Short Wall	Sqm	4	0.6		0.7	1.68
	Ch.347.87						
	Long Wall	Sqm	4	3		0.7	8.40
	Short Wall	Sqm	4	0.6		0.7	1.68
		<b>Sqm</b>				<b>Total</b>	<b>87.08</b>
1.6	Providing and fixing 450mm wide X 600mmX 20mm thk.RIVERWASHED BLACK GRANITE CLADDING on surface of seating as mentioned in drawing 192-MSC-NR-WD-04						
	Interactive Seating	Sqm					
	Ch.214.10	Sqm	2	3		0.75	4.50
	Ch.224.70	Sqm	2	3		0.75	4.50
	Ch.268.00	Sqm	2	3		0.75	4.50
	Ch.278.40	Sqm	2	3		0.75	4.50
	Ch.289.22	Sqm	2	3		0.75	4.50
	Ch.302.8	Sqm	2	4		0.75	6.00
	Ch.320.0	Sqm	2	3		0.75	4.50
	Ch.383.74	Sqm	2	3		0.75	4.50
	Ch.347.87	Sqm	4	3		0.75	9.00
		Sqm	<b>20</b>	<b>25</b>		<b>Total</b>	<b>46.50</b>
1.7	Providing and fixing of MS flat 100 mm, 5 mm thick for length of seat i.e. total of 66.83 m, with vertical support of 10 gauge thick M.S sheet laser cut to profile shown in drawing 192-MSC-NR-WD-04 and c/c 1000 mm ( approved shop drawing ), screw plate at fixing with seat, Including Painting all complete to the satisfaction of the Landscape architect. (Non SOR Item)						
	50 x 100 hollow Box Section with 5mm thk						
	Ch.214.10	Rmt	2	3			6.00
	Ch.224.70	Rmt	2	3			6.00
	Ch.268.00	Rmt	2	3			6.00
	Ch.278.40	Rmt	2	3			6.00
	Ch.289.22	Rmt	2	3			6.00
	Ch.302.8	Rmt	2	4			8.00
	Ch.320.0	Rmt	2	3			6.00
	Ch.383.74	Rmt	2	3			6.00
	Ch.347.87	Rmt	4	3			12.00
		Rmt	<b>20</b>			<b>Total</b>	<b>62.00</b>

Sl.No.	Item	Unit	No.	L	B	H	Qty.
		KG/RM T					<b>10.3</b>
		KG				Total Weight	638.6
		<b>MT</b>				<b>Total Weight (A)</b>	<b>0.6386</b>
			Nos.	Area	Thk.	MT/Cum	<b>Total Wight(B)</b>
	MS Plate Support of 5mm Thk @ 1000 c/c	<b>MT</b>	60	0.035	0.005	7.85	0.082
	<b>Total Weight of Backrest with Support</b>	<b>MT</b>				<b>Total(A+B)</b>	<b>0.72</b>
<b>2</b>	<b>FABRICATION</b>						
2.1	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)						
	<b>Handrail Maidan Side Road</b>						
	Ch.0.00 to Ch.180.00 (Town Hall Side footpath)	Rm		1	156		156.00
	Ch.350.00 to Ch.360.00( Maidan Side)	Rm		1	5		5.00
	Ch.370 to Ch.380 ( maidan Side)	Rm		1	10		10.00
	Ch.410.0 to Ch.485.0 ( Maidan Side)	Rm		1	76.5		76.50
	Ch.435.0 to Ch.525.0(Bldg Side)	Rm		1	113		113.00
	At Bus Stop Ch.330.0 and 350.00	Rm		2	3		6.00
		<b>Rm</b>				<b>A=</b>	<b>366.50</b>
	<b>Hand Rail of length2.4 meter Steel Qty.</b>					<b>Wt/Rm</b>	
	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
	Verical 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>B=</b>	<b>20.8</b>
	<b>Total Railing Weight (A x B)</b>	<b>MT</b>					<b>7.62</b>
2.2	KSRB 2-2.1 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(a) / 2.3.5.(KPWD SR16-17,Page No.5,SI No.2.3)						
	Foundation at 2.4m c/c for 311 m Railing	Cum	154	0.3	0.3	0.6	<b>8.30</b>
2.3	KSRB 2.8 : Providing anf Filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering,including cost of all materials and labour with all leads and lift.complete as per specifications.Specification No.KBS (2.15-KSRB 2.8)						
	Foundation at 2.4m c/c for 311 m Railing	Cum	154	0.3	0.3	0.23	<b>3.18</b>

Sl.No.	Item	Unit	No.	L	B	H	Qty.
2.4	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 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)						
	Foundation at 2.4m C/c for 311 m Railing	Cum	154	0.3	0.3	0.1	<b>1.38</b>
2.5	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 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. (Page No 101,SI No : 14.7)	Sqm	17	1.2	1.2		<b>24.48</b>

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**Superintendent Engineer  
MSCL Mangaluru**



**Name of the Work :- Mangalore Smart City**  
**3.6.2 Rate Analysis of Hardscape for Maidan Road**

**RATE ANALYSIS -HARDSCAPE**

1.1	KSRB 2-2.1 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(a) / 2.3.5.(KPWD SR16-17,Page No.5,SI No.2.3)			
	Basic rate		189	
	Add 12% For area weightage		22.68	
		<b>Rate</b>	<b>211.68</b>	<b>Cum</b>
1.2	KSRB 2.8 : Providing and Filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering,including cost of all materials and labour with all leads and lift.complete as per specifications.Specification No.KBS (2.15-KSRB 2.8)			
	Basic rate		2114	
	Add 12% For area weightage		253.68	
		<b>Rate</b>	<b>2367.68</b>	<b>Cum</b>
1.3	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 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)			
	Basic Rate		5441	
	Ded.Cement Cost ( 7.2 Rs./kg x220 kg)		-1728	
	Total		3713	
	Add 12% For area wightage		445.56	
	Add Cement cost(7.2Rs./kg x 220 kg)		1728	
		<b>Rate</b>	<b>5886.56</b>	<b>Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal			
1.4	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 superstructure including cost of materials, labour charges, scaffolding, curing complete as per specifications. Specification No. KBS 6.2. (Page No.27,SI.No.6.7)			
	Basic rate		6685	
	Add 12% For area wightage		802.2	
		<b>Rate</b>	<b>7487.20</b>	<b>Cum</b>

1.5	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.(Page No.114,SI No.15.16)			
	Basic rate		221	
	Add 12% For area wightage		26.52	
		<b>Rate</b>	<b>247.52</b>	<b>Sqm</b>
1.6	Providing and fixing 450mm wide X 600mmX 20mm thk.RIVERWASHED BLACK GRANITE CLADDING on surface of seating as mentioned in drawing 192-MSC-NR-WD-04 (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.24</b>	<b>Rate</b>	<b>3527.00</b>	<b>Sqm</b>
1.7	Providing and fixing of MS flat 100 mm, 5 mm thick for length of seat i.e. total of 66.83 m, with vertical support of 10 gauge thick M.S sheet laser cut to profile shown in drawing 192-MSC-NR-WD-04 and c/c 1000 mm ( approved shop drawing ), screw plate at fixing with seat, Including Painting all complete to the satisfaction of the Landscape architect. (Non SOR Item)			
	Basic Rate		100000	
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.25</b>	<b>Rate</b>	<b>100000.00</b>	<b>MT</b>
1.8	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.			
	Basic Rate		100000	
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.26</b>	<b>Rate</b>	<b>100000.00</b>	<b>MT</b>
1.9	KSRB 2-2.1 : Earthwork excavation for foundation of buildings, water supply, sanitary lines and electrical conduits either in pits or in trenches 1.5m and above in width, in ordinary soil not exceeding 1.5 m. in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50 m. after breaking of clods complete as per specifications. specification. No. KBS 2.1(a) / 2.3.5.(KPWD SR16-17,Page No.5,SI No.2.3)			
	Basic Rate		189	
	Add 12% For area weightage		22.68	
		<b>Rate</b>	<b>211.68</b>	<b>Cum</b>
2.0	KSRB 2.8 : Providing and Filling in foundation with granite/trap broken metal 100mm and down size,with approved sand including hand packing,ramming,watering,including cost of all materials and labour with all leads and lift.complete as per specifications.Specification No.KBS (2.15-KSRB 2.8)			
	Basic Rate		2114	
	Add 12% area weightage		253.68	
		<b>Rate</b>	<b>2367.68</b>	<b>Cum</b>

2.1	KSRB 4-1.6 ; Providing and laying in position plain cement concrete of mix 1:2:4 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)			
	Basic Rate		5441	
	Ded. Cement cost ( 7.2 Rs./kg x220 kg)		-1728	
	Total		3713	
	Add 12% For area weightage		445.56	
	Cement cost(7.2Rs./kg x 220 kg)		1728	
		<b>Rate</b>	<b>5886.56</b>	<b>Cum</b>
	Note: for cement basic price refer "material components"- S.I.132=Rs.720 / Quintal			
2.2	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 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. (Page No 101,SI No : 14.7)			
	Basic Rate		970	
	Add 12% For area weightage		116.4	
		<b>Rate</b>	<b>1086.40</b>	<b>Sqm</b>

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**Name of the Work :- Manglore Smart City**

**3.7 BOQ OF SOFTSCAPE NEAR BUILDING SIDE FOR MAIDAN ROAD**

Sl.No	Specifications	Unit	Quantity	Rate	Amount	Remarks
<b>1.1</b>	<b>SOIL MIXES and Ground Preparation</b>					
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	132.62	140.00	18,567	
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(Pane No.152 SI No.19.90)	Cum	66.31	228.48	15,150	
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)	Cum	66.31			
1.1.4	Screened through sieve of I.S. designation 20 mm	Cum	132.62	228.48	30,301	
1.1.5	Screened through sieve of I.S. designation 4.75 mm	Cum	66.31	228.48	15,150	
1.1.6	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	198.93	72.80	14,482	
1.1.7	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	198.93	23.91	4,756	
1.1.8	<b>Soil preparation of Lawn</b>					
	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	196.16	15.68	3,076	
1.1.9	<b>Bed Prepartion for , Ground covers , Climbers/ creepers, Shrubs</b>					

Sl.No	Specifications	Unit	Quantity	Rate	Amount	Remarks
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately).	Cum	198.93	146.00	29,043	
<b>1.2</b>	<b>SHRUBS: Supply and Stacking of Shrubs</b>					
1.2.1	Ficus Blackeana 5'-0" ht with 4-5 branches and bushy form (Non SOR Item)	Nos.	366.00	840.00	3,07,440	
1.2.2	Nerium Oleander variegated - 5'0" ht , 5-6 branches and bushy in form (Non SOR Item)	Nos.	201.00	840.00	1,68,840	
<b>1.3</b>	<b>TURF</b>					
1.3.1	ZOYSIA JAPONICA ( MAT) (Non SOR Item)	Sqm	129.00	156.80	20,227	
1.3.2	PASPALAM (Non SOR Item)	Sqm	64.50	156.80	10,114	
<b>1.4</b>	<b>IRRIGATION</b>					
1.4.1	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	331.55	560.00	1,85,665	
<b>Total</b>					<b>8,22,811</b>	

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**Name of the Work :- Manglore Smart City**  
**3.7.1 Measurement Sheet of softscape Building Side**

Sl.No	Item	Unit	No.	L	B	H	Qty.
<b>1.1</b>	<b>SOIL MIXES and Ground Preparation</b>						
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)						
	Consider 2/3rd Qty of Item No.1.1.7	<b>Cum</b>	0.67	198.93			<b>132.62</b>
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(Page No.152,Sl.No.19.90)						
	Consider 1/3rd Qty of Item No.1.1.7	<b>Cum</b>	0.33	198.93			<b>66.31</b>
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)						
	Consider Same Qty. of Item No.1.1.2	<b>Cum</b>					<b>66.31</b>
1.1.4	Screened through sieve of I.S. designation 20 mm						
	Consider Same Qty. of Item No.1.1.1	<b>Cum</b>					<b>132.62</b>
1.1.5	Screened through sieve of I.S. designation 4.75 mm						
	Consider Same Qty. of Item No.1.1.2	<b>Cum</b>					<b>66.31</b>
1.1.6	<b>Fine dressing of the ground.</b>						
	Ch.10.0 to Ch.100.0(Compund wall Side)	<b>Sqm</b>	1	102	0.6		61.20
	Ch.10.0 to Ch.100.0(Carriageway Side)	<b>Sqm</b>	1	95.3	0.47		44.47
	Ch.110.0 to Ch.137.9(Compund Wall Side)	<b>Sqm</b>	1	38.64	0.7		27.05
	Ch.110.0 to Ch.137.9(Carriageway Side)	<b>Sqm</b>	1	34.24	0.4		13.70
	Ch.143.3 to Ch.167.9(Compound Wall Side)	<b>Sqm</b>	1	24.2	0.6		14.52
	Ch.143.3 to Ch.167.9(Carriageway Side)	<b>Sqm</b>	1	20.1	0.5		10.05
	Ch.204.2 to Ch.225.3 (Compound Wall Side)	<b>Sqm</b>	1	21.08	0.6		12.65
	Ch.206.2 to Ch.221.3 (Carriageway Side)	<b>Sqm</b>	1	15.8	0.4		6.32
	Ch.252.1 to Ch.261.6(Compound Wall Side)	<b>Sqm</b>	1	9.5	0.6		5.70
	Ch.252.1 to Ch.261.6(Carriageway side)	<b>Sqm</b>	1	4.5	0.4		1.80
	Ch.267.5 to Ch.307.3(Compound wall side)	<b>Sqm</b>	1	40.3	0.8		32.24
	Ch.267.5 to Ch.307.3(Carriageway side)	<b>Sqm</b>	1	36.2	0.5		18.10
	312.5 to Ch.327.6 ( Compound Wall side)	<b>Sqm</b>	1	15.1	0.6		9.06
	312.5 to Ch.327.6 ( Carriageway side)	<b>Sqm</b>	1	9.7	0.4		3.88
	353.3 to Ch.368.5(Compound wall side)	<b>Sqm</b>	1	15.2	0.6		9.12
	353.3 to Ch.368.5(Carriageway side)	<b>Sqm</b>	1	8.3	0.5		4.15
	372.8 to Ch.424.3( Compound wall side)	<b>Sqm</b>	1	51.7	0.7		36.19
	372.8 to Ch.424.3(Carriageway side)		1	42.7	0.5		21.35
						<b>Total</b>	<b>331.55</b>

Sl.No	Item	Unit	No.	L	B	H	Qty.
1.1.7	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						
	Ch.10.0 to Ch.100.0(Compund wall Side)	Cum	1	102	0.6	0.6	36.72
	Ch.10.0 to Ch.100.0(Carriageway Side)	Cum	1	95.3	0.47	0.6	26.68
	Ch.110.0 to Ch.137.9(Compund Wall Side)	Cum	1	38.64	0.7	0.6	16.23
	Ch.110.0 to Ch.137.9(Carriageway Side)	Cum	1	34.24	0.4	0.6	8.22
	Ch.143.3 to Ch.167.9(Compound Wall Side)	Cum	1	24.2	0.6	0.6	8.71
	Ch.143.3 to Ch.167.9(Carriageway Side)	Cum	1	20.1	0.5	0.6	6.03
	Ch.204.2 to Ch.225.3 (Compound Wall Side)	Cum	1	21.08	0.6	0.6	7.59
	Ch.206.2 to Ch.221.3 (Carriageway Side)	Cum	1	15.8	0.4	0.6	3.79
	Ch.252.1 to Ch.261.6(Compound Wall Side)	Cum	1	9.5	0.6	0.6	3.42
	Ch.252.1 to Ch.261.6(Carriageway side)	Cum	1	4.5	0.4	0.6	1.08
	Ch.267.5 to Ch.307.3(Compound wall side)	Cum	1	40.3	0.8	0.6	19.34
	Ch.267.5 to Ch.307.3(Carriageway side)	Cum	1	36.2	0.5	0.6	10.86
	312.5 to Ch.327.6 ( Compound Wall side)	Cum	1	15.1	0.6	0.6	5.44
	312.5 to Ch.327.6 ( Carriageway side)	Cum	1	9.7	0.4	0.6	2.33
	353.3 to Ch.368.5(Compound wall side)	Cum	1	15.2	0.6	0.6	5.47
	353.3 to Ch.368.5(Carriageway side)	Cum	1	8.3	0.5	0.6	2.49
	372.8 to Ch.424.3(Compound wall side)	Cum	1	51.7	0.7	0.6	21.71
	372.8 to Ch.424.3(Carriageway side)	Cum	1	42.7	0.5	0.6	12.81
						<b>Total</b>	<b>198.93</b>
1.1.8	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					<b>198.93</b>
1.1.10	<b>Soil preparation of Lawn</b>						
	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)						
	In rows 5 cm apart in both directions						
	Ch.10.0 to Ch.100.0(Compund wall Side)	Sqm	2	102.60		0.15	30.78
	Ch.10.0 to Ch.100.0(Carriageway Side)	Sqm	2	95.77		0.15	28.73
	Ch.110.0 to Ch.137.9(Compund Wall Side)	Sqm	2	39.34		0.15	11.80
	Ch.110.0 to Ch.137.9(Carriageway Side)	Sqm	2	34.64		0.15	10.39
	Ch.143.3 to Ch.167.9(Compound Wall Side)	Sqm	2	24.80		0.15	7.44
	Ch.143.3 to Ch.167.9(Carriageway Side)	Sqm	2	20.60		0.15	6.18
	Ch.204.2 to Ch.225.3 (Compound Wall Side)	Sqm	2	21.68		0.15	6.50
	Ch.206.2 to Ch.221.3 (Carriageway Side)	Sqm	2	16.20		0.15	4.86
	Ch.252.1 to Ch.261.6(Compound Wall Side)	Sqm	2	10.10		0.15	3.03
	Ch.252.1 to Ch.261.6(Carriageway side)	Sqm	2	4.90		0.15	1.47
	Ch.267.5 to Ch.307.3(Compound wall side)	Sqm	2	41.10		0.15	12.33
	Ch.267.5 to Ch.307.3(Carriageway side)	Sqm	2	36.70		0.15	11.01
	312.5 to Ch.327.6 ( Compound Wall side)	Sqm	2	15.70		0.15	4.71
	312.5 to Ch.327.6 ( Carriageway side)	Sqm	2	10.10		0.15	3.03

Sl.No	Item	Unit	No.	L	B	H	Qty.
	353.3 to Ch.368.5(Compound wall side)	Sqm	2	15.80		0.15	4.74
	353.3 to Ch.368.5(Carriageway side)	Sqm	2	8.80		0.15	2.64
	372.8 to Ch.424.3(Compound wall side)	Sqm	2	52.40		0.15	15.72
	372.8 to Ch.424.3(Carriageway side)	Sqm	2	43.20		0.15	12.96
							178.33
				Consider 10% Extra Qty.			196.16
1.1.11	<b>Bed Preparation for , Ground covers , Climbers/ creepers, Shrubs</b>						
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately).						
	Ch.10.0 to Ch.100.0(Compund wall Side)	Cum	1	102	0.6	0.6	36.72
	Ch.10.0 to Ch.100.0(Carriageway Side)	Cum	1	95.3	0.466667	0.6	26.68
	Ch.110.0 to Ch.137.9(Compund Wall Side)	Cum	1	38.64	0.7	0.6	16.23
	Ch.110.0 to Ch.137.9(Carriageway Side)	Cum	1	34.24	0.4	0.6	8.22
	Ch.143.3 to Ch.167.9(Compound Wall Side)	Cum	1	24.2	0.6	0.6	8.71
	Ch.143.3 to Ch.167.9(Carriageway Side)	Cum	1	20.1	0.5	0.6	6.03
	Ch.204.2 to Ch.225.3 (Compound Wall Side)	Cum	1	21.08	0.6	0.6	7.59
	Ch.206.2 to Ch.221.3 (Carriageway Side)	Cum	1	15.8	0.4	0.6	3.79
	Ch.252.1 to Ch.261.6(Compound Wall Side)	Cum	1	9.5	0.6	0.6	3.42
	Ch.252.1 to Ch.261.6(Carriageway side)	Cum	1	4.5	0.4	0.6	1.08
	Ch.267.5 to Ch.307.3(Compound wall side)	Cum	1	40.3	0.8	0.6	19.34
	Ch.267.5 to Ch.307.3(Carriageway side)	Cum	1	36.2	0.5	0.6	10.86
	312.5 to Ch.327.6 (Compound Wall side)	Cum	1	15.1	0.6	0.6	5.44
	312.5 to Ch.327.6 (Carriageway side)	Cum	1	9.7	0.4	0.6	2.33
	353.3 to Ch.368.5(Compound wall side)	Cum	1	15.2	0.6	0.6	5.47
	353.3 to Ch.368.5(Carriageway side)	Cum	1	8.3	0.5	0.6	2.49
	372.8 to Ch.424.3(Compound wall side)	Cum	1	51.7	0.7	0.6	21.71
	372.8 to Ch.424.3(Carriageway side)	Cum	1	42.7	0.5	0.6	12.81
						<b>Total</b>	<b>198.93</b>
1.2	<b>SHRUBS: Supply and Stacking of</b>						
1.2.1	Ficus Blackeana 5'-0" ht with 4-5 branches and bushy form (Non SOR Item)	Nos.					366.00
1.2.2	Nerium Oleander variegated - 5'0" ht , 5-6 branches and bushy in form (Non SOR Item)	Nos.					201.00
	Total	<b>Nos.</b>					<b>567.00</b>
1.3	<b>TURF</b>						
1.3.1	ZOYSIA JAPONICA ( MAT)(Non SOR Item)	Sqm					129.00
1.3.2	PASPALAM (Non SOR Item)	Sqm					64.50
	<b>Total</b>	<b>Sqm</b>					<b>193.50</b>
1.4	<b>IRRIGATION</b>						



Sl.No	Item	Unit	No.	L	B	H	Qty.
1.4.1	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 valve and pump required for complete commissioning to be installed. ( Consider Same Qty. of 1.1.6) (Non SOR Item)	Sqm					331.55

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**  
**3.7.2 Rate Analysis of SOFTSCAPE Building side for Maidan Road**

**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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.27</b>	<b>Rate</b>	<b>140.00</b>	<b>Cum</b>
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(Page No.152.SI.No.19.90)			
	Basic rate		204	
	Add 12% For area weightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)			
1.1.4	Screened through sieve of I.S. designation 20 mm			
	Basic rate		204	
	Add 12% For area wightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.5	Screened through sieve of I.S. designation 4.75 mm			
	Basic rate		204	
	Add 12% For area wightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.6	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		65	
	Add 12% For area wightage		7.8	
		<b>Rate</b>	<b>72.80</b>	<b>Cum</b>
1.1.7	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.28</b>	<b>Rate</b>	<b>23.91</b>	<b>Cum</b>
1.1.8	<b>Soil preparation of Lawn</b> 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)			
	Basic rate		14	
	Add 12% For area wightage		1.68	

		Rate	15.68	Sqm
1.1.9	<b>Bed Preparation for , Ground covers , Climbers/ creepers, Shrubs</b>			
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.29	Rate	146.00	Cum
1.2	<b>SHRUBS: Supply and Stacking of Shrubs</b>			
1.2.1	Ficus Blackeana 5'-0" ht with 4-5 branches and bushy form (Non SOR Item)			
	Basic Rate		840	
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.30	Rate	840.00	No
1.2.2	Nerium Oleander variegated - 5'0" ht , 5-6 branches and bushy in form (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.31	Rate	840.00	No
1.3	<b>TURF</b>			
1.3.1	ZOYSIA JAPONICA ( MAT) (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.32	Rate	156.80	Sqm
1.3.2	PASPALAM (Non SOR Item)			
	Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.33	Rate	156.80	Sqm
1.4	<b>IRRIGATION</b>			
1.4.1	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 valve 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

Executive Engineer  
MSCL Mangaluru

Superintendent Engineer  
MSCL Mangaluru

**Name of the Work :- Manglore Smart City**  
**3.8 BOQ OF SOFTSCAPE NEAR MAIDAN SIDE**

Sl.No	Specifications	Unit	Quantity	Rate	Amount	Remarks
<b>1.1</b>	<b>SOIL MIXES and Ground Preparation</b>					
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	80.13	140.00	11,218	
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(Page No.152,Sl.No.19.90)	Cum	40.06	228.48	9,154	
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)	Cum	40.06			
1.1.4	Screened through sieve of I.S. designation 20 mm	Cum	80.13	228.48	18,307	
1.1.5	Screened through sieve of I.S. designation 4.75 mm	Cum	40.06	228.48	9,154	
1.16	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	Cum	120.19	72.80	8,750	
1.1.7	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	120.19	23.91	2,874	
<b>1.1.8</b>	<b>Bed Preparation for , Ground covers , Climbers/ creepers, Shrubs</b>					
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)	Cum	120.19	146.00	17,548	

Sl.No	Specifications	Unit	Quantity	Rate	Amount	Remarks
1.1.9	<b>Soil preparation of Lawn</b>					
	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	71.57	15.68	1,122	
1.2	<b>SHRUBS: Supply and Stacking of Shrubs</b>					
1.2.1	Ficus Blackeana 5'-0" ht with 4-5 branches and bushy form (Non SOR Item)	Nos.	709.00	840.00	5,95,560	
1.2.2	Heliconia Pstitacorum 'lady diana ' 4'6" ht , 5-6 branches and bushy in form (Non SOR Item)	Nos	734.00	140.00	1,02,760	
1.3	<b>TURF</b>					
1.3.1	ZOYSIA JAPONICA ( MAT)(Non SOR Item)	Sqm	80.00	156.80	12,544	
1.3.2	PASPALAM (Non SOR Item)	Sqm	22.12	156.80	3,468	
1.4	<b>IRRIGATION</b>					
1.4.1	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	201.67	560.00	1,12,934	
<b>Total</b>					<b>9,05,392</b>	

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Manglore Smart City**  
**3.8.1 Measurement Sheet of softscape Maidan Side**

Sl.No	Specifications	Unit	No	L	B	H	Qty.
<b>1.1</b>	<b>SOIL MIXES and Ground Preparation</b>						
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).						
	Consider 2/3 rd Qty. of Item1.1.7	<b>Cum</b>	0.67	120.19			<b>80.13</b>
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(Page No.152.SI.No.19.90)						
	Consider 1/3 rd Qty. of Item1.1.7	<b>Cum</b>	0.33	120.19			<b>40.06</b>
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)						
	Consider Same Qty. of 1.1.2	<b>Cum</b>					<b>40.06</b>
1.1.4	Screened through sieve of I.S. designation 20 mm	<b>Cum</b>					
	Consider Same Qty. of 1.1.1						<b>80.13</b>
1.1.5	Screened through sieve of I.S. designation 4.75 mm						
	Consider Same Qty. of 1.1.2	<b>Cum</b>					<b>40.06</b>
1.1.6	Fine dressing of the ground.						
	Ch.184.5 to 197.7(Shrub)Compound Wall Side	Sqm	1	13.3	0.8		10.64
	Ch.190.0 to Ch.211.7(Shurb)-Carriagewayside	Sqm	1	23.11	0.8		18.488
				Area			
	Ch.211.7 to Ch.217.20(Ground Cover)	Sqm	1	6.2			6.2
	217.20 to Ch.222.9 (Shrub)	Sqm	1	6	0.7		4.2
	Ch.226.4 to Ch.266.2	Sqm	1	39.7	0.7		27.79
				Area			
	Ch.266.2 to Ch.271.1	Sqm	1	6.57			6.57
	Ch. 270.0 to Ch.276.4	Sqm	1	6.4	0.6		3.84
				Area			
	Ch.274.5 to Ch.282.3	Sqm	1	9.6			9.6
	Ch.280.4 to Ch.287.4	Sqm	1	7.2	0.7		5.04
				Area			
	Ch.286.2 to Ch.289.2	Sqm	1	1.59			1.59
	Ch.289.2 to Ch.292.2	Sqm	1	1.62			1.62
	291.4 to Ch.299.10	Sqm	1	7.8	0.7		5.46
				Area			

Sl .No	Specifications	Unit	No	L	B	H	Qty.
	Ch.299.10to Ch.307.3	Sqm	1	9.47			9.47
	Ch.306.3 to Ch.311.3	Sqm	1	5	0.6		3
	Ch.311.3 to Ch.314.1	Sqm	1	3.38			3.38
	Ch.214.10 to Ch.316.6	Sqm	1	2.6	0.6		1.56
				Area			
	Ch.316.6 to Ch.322.9	Sqm	1	6.26			6.26
	Ch.322.9 to Ch.340.0	Sqm	1	18	0.6		10.8
	Ch.351.2 to Ch.355.6	Sqm	1	4.4	0.6		2.64
				Area.			
	Ch.355.10 to Ch.364.10	Sqm	1	8.94			8.94
	Ch.363.0 to Ch.381.7	Sqm	1	18.7	0.5		9.35
				Area			
	Ch.381.2 to Ch.386.2	Sqm	1	4.52			4.52
	Ch.386.2 to Ch.405.3	Sqm	1	19.8	0.5		9.9
				Area			
	Ch.405.3 to Ch.410.8	Sqm	1	3.97			3.97
	Ch.434.5 to Ch.487.4	Sqm	1	53.68	0.5		26.84
		<b>Sqm</b>				<b>Total</b>	<b>201.67</b>
1.1.7	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					
	Ch.184.5 to 197.7(Shrub)Compound Wall Side	Cum	1	13.3	0.8	0.6	6.384
	Ch.190.0 to Ch.211.7(Shurb)-Carriageway side	Cum	1	23.11	0.8	0.6	11.0928
				Area			0
	Ch.211.7 to Ch.217.20(Ground Cover)	Cum	1	6.2		0.6	3.72
	217.20 to Ch.222.9 (Shrub)	Cum	1	6	0.7	0.6	2.52
	Ch.226.4 to Ch.266.2	Cum	1	39.7	0.7	0.6	16.674
				Area			0
	Ch.266.2 to Ch.271.1	Cum	1	6.57		0.6	3.942
	Ch. 270.0 to Ch.276.4	Cum	1	6.4	0.6	0.6	2.304
				Area			0
	Ch.274.5 to Ch.282.3	Cum	1	9.6		0.6	5.76
	Ch.280.4 to Ch.287.4	Cum	1	7.2	0.7	0.6	3.024
				Area			0
	Ch.286.2 to Ch.289.2	Cum	1	1.59		0.6	0.954
	Ch.289.2 to Ch.292.2	Cum	1	1.62		0.6	0.972
	291.4 to Ch.299.10	Cum	1	7.8	0.7	0.6	3.276
				Area			0
	Ch.299.10to Ch.307.3	Cum	1	9.47		0.6	5.682
	Ch.306.3 to Ch.311.3	Cum	1	5	0.6	0.6	1.8
							0
	Ch.311.3 to Ch.314.1	Cum	1	3.38	0.6	0.6	1.2168
	Ch.214.10 to Ch.316.6	Cum	1	2.6	0.6	0.6	0.936
				Area			0
	Ch.316.6 to Ch.322.9	Cum	1	6.26		0.6	3.756
	Ch.322.9 to Ch.340.0	Cum	1	18	0.6	0.6	6.48
	Ch.351.2 to Ch.355.6	Cum	1	4.4	0.6	0.6	1.584
				Area.			0
	Ch.355.10 to Ch.364.10	Cum	1	8.94		0.6	5.364
	Ch.363.0 to Ch.381.7	Cum	1	18.7	0.5	0.6	5.61

Sl .No	Specifications	Unit	No	L	B	H	Qty.
				Area			0
	Ch.381.2 to Ch.386.2	Cum	1	4.52		0.6	2.712
	Ch.386.2 to Ch.405.3	Cum	1	19.8	0.5	0.6	5.94
				Area			0
	Ch.405.3 to Ch.410.8	Cum	1	3.97		0.6	2.382
	Ch.434.5 to Ch.487.4	Cum	1	53.68	0.5	0.6	16.104
		<b>Cum</b>				<b>Total</b>	<b>120.1896</b>
1.1.8	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	<b>Cum</b>					<b>120.1896</b>
1.1.9	<b>Bed Preparation for , Ground covers , Climbers/ creepers, Shrubs</b>						
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)						
	Consider Same Qty. of 1.1.7	<b>Cum</b>					<b>120.19</b>
1.1.10	<b>Soil preparation of Lawn</b>						
	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)						
	In rows 5 cm apart in both directions						
	Ch.184.5 to 197.7(Shrub)Compound Wall Side	Sqm	1	13.3	0.8	0.15	4.23
	Ch.190.0 to Ch.211.7(Shurb)-Carriagewayaside	Sqm	1	23.11	0.8	0.15	7.173
	217.20 to Ch.222.9 (Shrub)	Sqm	1	6	0.7	0.15	2.01
	Ch.226.4 to Ch.266.2	Sqm	1	39.7	0.7	0.15	12.12
	Ch. 270.0 to Ch.276.4	Sqm	1	6.4	0.6	0.15	2.1
	Ch.280.4 to Ch.287.4	Sqm	1	7.2	0.7	0.15	2.37
	291.4 to Ch.299.10	Sqm	1	7.8	0.7	0.15	2.55
	Ch.306.3 to Ch.311.3	Sqm	1	5	0.6	0.15	1.68



Sl.No	Specifications	Unit	No	L	B	H	Qty.
	Ch.311.3 to Ch.314.1	Sqm	1	3.38	0.6	0.15	1.194
	Ch.214.10 to Ch.316.6	Sqm	1	2.6	0.6	0.15	0.96
	Ch.322.9 to Ch.340.0	Sqm	1	18	0.6	0.15	5.58
	Ch.351.2 to Ch.355.6	Sqm	1	4.4	0.6	0.15	1.5
	Ch.363.0 to Ch.381.7	Sqm	1	18.7	0.5	0.15	5.76
	Ch.386.2 to Ch.405.3	Sqm	1	19.8	0.5	0.15	6.09
	Ch.434.5 to Ch.487.4	Sqm	1	53.68	0.5	0.15	16.254
		<b>Sqm</b>					<b>71.57</b>
<b>1.2</b>	<b>SHRUBS: Supply and Stacking of Shrubs</b>						
1.2.1	Ficus Blackeana 5'-0" ht with 4-5 branches and bushy form (Non SOR Item)	Nos.					709
1.2.2	Heliconia Pstitacorum 'lady diana ' 4'6" ht , 5-6 branches and bushy in form (Non SOR Item)	Nos.					734
	<b>Total</b>	<b>Nos.</b>					<b>1443</b>
<b>1.3</b>	<b>TURF</b>						
1.3.1	ZOYSIA JAPONICA ( MAT)(Non SOR Item)	Sqm					80.00
1.3.2	PASPALAM (Non SOR Item)	Sqm					22.12
	<b>Total</b>	<b>Sqm</b>					<b>102.12</b>
<b>1.4</b>	<b>IRRIGATION</b>						
1.4.1	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 Qty. Same as Item No.1.1.6) (Non SOR Item)	<b>Sqm</b>					<b>201.67</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Mangalore Smart City**  
**3.8.2 Rate Analysis of SOFTSCAPE Maidan side for Maidan Road**

**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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Sr.No.27</b>	<b>Rate</b>	<b>140.00</b>	<b>Cum</b>
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(Page No.152,SI.No.19.90)			
	Basic rate		204	
	Add 12% For area weightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)			
1.1.4	Screened through sieve of I.S. designation 20 mm			
	Basic rate		204	
	Add 12% For area wightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.5	Screened through sieve of I.S. designation 4.75 mm			
	Basic rate		204	
	Add 12% For area wightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.6	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		65	
	Add 12% For area wightage		7.8	
		<b>Rate</b>	<b>72.80</b>	<b>Cum</b>
1.1.7	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Sr.No.28</b>	<b>Rate</b>	<b>23.91</b>	<b>Cum</b>

1.1.8	<b>Bed Preparation for , Ground covers , Climbers/ creepers, Shrubs</b>			
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Sr.No.29</b>	<b>Rate</b>	<b>146.00</b>	<b>Cum</b>
1.1.9	<b>Soil preparation of Lawn</b> 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)			
	Basic rate		14	
	Add 12% For area wightage		1.68	
		<b>Rate</b>	<b>15.68</b>	<b>Sqm</b>
1.2	<b>SHRUBS: Supply and Stacking of Shrubs</b>			
1.2.1	Ficus Blackeana 5'-0" ht with 4-5 branches and bushy form (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Sr.No.30</b>	<b>Rate</b>	<b>840.00</b>	<b>Nos.</b>
1.2.2	Heliconia Pstitacorum 'lady diana ' 4'6" ht , 5-6 branches and bushy in form (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Sr.No.35</b>			
	Basic Rate		140	
		<b>Rate</b>	<b>140.00</b>	<b>Nos.</b>
1.3	<b>TURF</b>			
1.3.1	ZOYSIA JAPONICA ( MAT) (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Sr.No.32</b>	<b>Rate</b>	<b>156.80</b>	<b>Sqm</b>
1.3.2	PASPALAM (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Sr.No.33</b>	<b>Rate</b>	<b>156.80</b>	<b>Sqm</b>

<b>1.4</b>	<b>IRRIGATION</b>			
1.4.1	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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,34</b>	<b>Rate</b>	<b>560.00</b>	<b>Sqm</b>

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Manglore Smart City**

**3.9 BOQ OF SOFTSCAPE FOR JUNCTIONS**

Sl.No.	Specifications	Unit	Quantity	Rate	Amount	Remarks
<b>1.1</b>	<b>SOIL MIXES and Ground Preparation</b>					
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).	Cum	190.75	140.00	26,705	
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(Page No.152,Sl.No.19.90)	Cum	95.38	228.48	21,792	
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)		95.38		-	
1.1.4	Screened through sieve of I.S. designation 20 mm	Cum	190.75	228.48	43,583	
1.1.5	Screened through sieve of I.S. designation 4.75 mm	Cum	95.38	228.48	21,792	
1.1.6	Fine dressing of the ground.	Sqm	407.68	2.41	-	
1.1.6	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	Cum	286.13	72.80	20,830	
1.1.7	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	Cum	286.13	23.91	6,841	
<b>1.1.8</b>	<b>Bed Preparation for , Ground covers , Climbers/ creepers, Shrubs</b>					
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)	Cum	286.13	146.00	41,775	

Sl.No.	Specifications	Unit	Quantity	Rate	Amount	Remarks
<b>1.2</b>	<b>SHRUBS: Supply and Stacking of Shrubs</b>					
1.2.1	Heliconia Psittacorum Fire Fly 1350mm ht with 4-5 minimum branches and bushy form (Non SOR Item)	Nos.	48.00	140.00	6,720	
1.2.2	Lantana Vareigata 350mm ht with 4-5 minimum branches and bushy form (Non SOR Item)	Nos.	266.00	33.60	8,938	
<b>1.3</b>	<b>GROUNDCOVER :-Supply and planting of Groundcover</b>					
1.3.1	Zephranthus Candida 300mm ht with 4-5 branches and bushy form (Non SOR Item)	Nos.	227.00	30.24	6,864	
1.3.2	Cuphea Hysopifolia 300mm ht with 4-5 branches and bushy form (Non SOR Item)	Nos	148.00	50.40	7,459	
<b>1.4</b>	<b>TURF</b>					
	ZOYSIA JAPONICA ( MAT) (Non SOR Item)	Sqm	161.19	156.80	25,275	
<b>1.5</b>	<b>IRRIGATION</b>					
1.5.1	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	407.68	560.00	2,28,299	
<b>Total</b>					<b>4,66,873</b>	

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**Superintendent Engineer  
MSCL Mangaluru**

**Name of the Work :- Manglore Smart City**

**3.9.1 Measurement Sheet of softscape Junctions**

Sl.No.	Specifications	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).						
	Consider 2/3rd Qty of 1.1.7	Cum	0.67	286.13			190.75
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(Page No.152,Sl.No.19.90)						
	Consider 1/3rd Qty of 1.1.7	Cum	0.33	286.132			95.38
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)						
	Consider Qty. of 1.1.2	Cum					95.38
1.1.4	Screened through sieve of I.S. designation 20 mm						
	Consider Qty. of 1.1.1	Cum					190.75
1.1.5	Screened through sieve of I.S. designation 4.75 mm						
	Consider Qty. of 1.1.2	Cum					95.38
1.1.6	Fine dressing of the ground.						
	Soil Filling at Clock Tower( Radius=9.8m)	Sqm	1	3.14	9.80	9.8	301.5656
				Area			
	Median-Soil Filling at Junction (maidan Road)	Sqm	1	28.59			28.59
	Median-Soil Filling at Balmatta Road	Sqm	1	22.51			22.51
	Mound at Balmatta Road	Sqm	1	17.95			17.95
						Add 10%	37.06156
		Sqm				Total	407.68
1.1.7	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 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				Radius		

Sl.No.	Specifications	Unit	No.	L	B	H	Qty
	Soil Filling at Clock Tower( Radius=9.8m)	Cum	1	3.14	9.80	0.6	180.94
	Mound at Clock Tower	Cum	0.33	3.14	4.92	0.4	10.13
				<b>Area</b>			
	Median-Soil Filling at Junction (maidan Road)	Cum	1	28.59		0.6	17.154
	Mound at Junction	Cum	1	28.59		0.4	11.436
	Median-Soil Filling at Balmatta Road	Cum	1	22.51		0.6	13.506
	Mound at Balmatta Road	Cum	1	22.51		0.4	9.004
	Median-Soil Filling at Balmatta Road(Rec.Shape)	Cum	1	17.95		0.6	10.77
	Mound at Balmatta Road( Rec.Shape)	Cum	1	17.95		0.4	7.18
						Add 10%	26.012
		<b>Cum</b>				<b>Total</b>	<b>286.132</b>
1.1.8	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)						
	Qty. Same as 1.1.7	<b>Cum</b>					<b>286.132</b>
1.1.9	<b>Bed Preparation for , Ground covers , Climbers/ creepers, Shrubs</b>						
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)						
	Soil Filling at Clock Tower( Radius=9.8m)	Cum	1	3.14	9.8	0.6	180.94
	Mound at Clock Tower	Cum	0.33	3.14	4.92	0.4	10.13
				<b>Area</b>		<b>0</b>	
	Median-Soil Filling at Junction (maidan Road)	Cum	1	28.59		0.6	17.154
	Mound at Junction	Cum	1	28.59		0.4	11.436
	Median-Soil Filling at Balmatta Road	Cum	1	22.51		0.6	13.506
	Mound at Balmatta Road	Cum	1	22.51		0.4	9.004
	Median-Soil Filling at Balmatta Road(Rec.Shape)	Cum	1	17.95		0.6	10.77
	Mound at Balmatta Road( Rec.Shape)	Cum	1	17.95		0.4	7.18
						Add 10% Extra	26.012
		<b>Cum</b>				<b>Total</b>	<b>286.132</b>
<b>1.2</b>	<b>SHRUBS: Supply and Stacking of</b>						



Sl.No.	Specifications	Unit	No.	L	B	H	Qty
1.2.1	Heliconia Psittacorum Fire Fly 1350mm ht with 4-5 minimum branches and bushy form (Non SOR Item)	Nos.					48
1.2.2	Lantana Vareigata 350mm ht with 4-5 minimum branches and bushy form	Nos.					266
	<b>Total</b>	<b>Nos.</b>					<b>314</b>
<b>1.3</b>	<b>GROUND COVER :-Supply and planting of Groundcover</b>						
1.3.1	Zephranthus Candida 300mm ht with 4-5 branches and bushy form (Non SOR Item)	Nos.					227
1.3.2	Cuphea Hysopifolia 300mm ht with 4-5 branches and bushy form (Non SOR Item)	Nos.					148
	<b>Total</b>	<b>Nos.</b>					<b>375</b>
<b>1.4</b>	<b>Turf :- Supply and planting of Turf</b>						
	ZOYSIA JAPONICA ( MAT)(Non SOR Item)						
	Soil Filling at Clock Tower( Radius=9.8m)	Sqm	0.5	3.14	9.80		150.78
				Perimeter			
	Median-Soil Filling at Junction	Sqm	1	26.87		0.15	4.0305
	Median-Soil Filling at Balmatta Road	Sqm	1	24.58		0.15	3.687
	Median-Soil Filling at Balmatta Road(Rec.Shape)	Sqm	1	17.95		0.15	2.6925
		<b>Sqm</b>					<b>161.19</b>
<b>1.5</b>	<b>IRRIGATION</b>						
1.5.1	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)	<b>Sqm</b>					407.68

**Executive Engineer  
MSCL Mangaluru**

**Superintendent Engineer  
MSCL Mangaluru**

Name of the Work :- Mangalore Smart City  
**3.9.2 Rate Analysis of SOFTSCAPE JUNCTIONS for Maidan Road**

**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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.27</b>	<b>Rate</b>	<b>140.00</b>	<b>Cum</b>
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(Page No.152,SI.No.19.90)			
	Basic rate		204	
	Add 12% For area weightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)			
1.1.4	Screened through sieve of I.S. designation 20 mm			
	Basic rate		204	
	Add 12% For area wightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.5	Screened through sieve of I.S. designation 4.75 mm			
	Basic rate		204	
	Add 12% For area wightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.6	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		65	
	Add 12% For area wightage		7.8	
		<b>Rate</b>	<b>72.80</b>	<b>Cum</b>
1.1.7	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.28</b>	<b>Rate</b>	<b>23.91</b>	<b>Cum</b>
1.1.8	<b>Bed Prepartion for , Ground covers , Climbers/ creepers, Shrubs</b>			

	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.29</b>	<b>Rate</b>	<b>146.00</b>	<b>Cum</b>
1.2	<b>SHRUBS: Supply and Stacking of Shrubs</b>			
1.2.1	Heliconia Psittacorum Fire Fly 1350mm ht with 4-5 minimum branches and bushy form (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore</b>			
	Basic Rate		140	
		<b>Rate</b>	<b>140.00</b>	<b>Nos.</b>
1.2.2	Lantana Vareigata 350mm ht with 4-5 minimum branches and bushy form (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.36</b>			
	Basic Rate		33.6	
		<b>Rate</b>	<b>33.60</b>	<b>Nos.</b>
1.3	<b>GROUNDCOVER :-Supply and planting of Groundcover</b>			
1.3.1	Zephranthus Candida 300mm ht with 4-5 branches and bushy form (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.37</b>			
	Basic Rate		30.24	
		<b>Rate</b>	<b>30.24</b>	<b>Nos.</b>
1.3.2	Cuphea Hysopifolia 300mm ht with 4-5 branches and bushy form (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.38</b>			
	Basic Rate		50.4	
		<b>Rate</b>	<b>50.40</b>	<b>Nos.</b>
1.4	<b>TURF</b>			
	ZOYSIA JAPONICA ( MAT) (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.32</b>			
	Basic Rate		156.8	
		<b>Rate</b>	<b>156.80</b>	<b>Sqm</b>
1.4	<b>IRRIGATION</b>			
1.4.1	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.			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.34</b>			
	Basic Rate		560	
		<b>Rate</b>	<b>560.00</b>	<b>Sqm</b>

Executive Engineer  
MSCL Mangaluru

Superintendent Engineer  
MSCL Mangaluru

**Name of the Work :- Manglore Smart City**  
**3.10 BOQ OF SOFTSCAPE FOR MEDIAN -MAIDAN ROAD**

Sl.No	Specifications	Unit	Quantity	Rate	Amount	Remarks
<b>1.1</b>	<b>SOIL MIXES and Ground Preparation</b>					
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)	<b>Cum</b>	196.68	140.00	27,535	
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(Page No.152,SI.No.19.90)	<b>Cum</b>	98.34	228.48	22,469	
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)					
1.1.4	Screened through sieve of I.S. designation 20 mm	<b>Cum</b>	196.68	228.48	44,937	
1.1.5	Screened through sieve of I.S. designation 4.75 mm	<b>Cum</b>	98.34	228.48	22,469	
1.1.6	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)	<b>Cum</b>	134.28	72.80	9,776	
1.1.7	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)	<b>Cum</b>	134.28	23.91	3,211	
1.1.8	<b>Bed Prepartion for , Ground covers , Climbers/ creepers, Shrubs</b>					

Sl.No	Specifications	Unit	Quantity	Rate	Amount	Remarks
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)	Cum	295.02	146.00	43,073	
<b>1.2</b>	<b>SHRUBS: Supply and Stacking of Shrubs</b>					
1.2.1	Pandanus variegated 'gold ' 300mm ht , 300mm c/c in triangulation , with 4-5 fronds (Non SOR Item)	Nos.	1815.00	84.00	1,52,460	
1.2.2	Bougenvilla variety 'red ' 600mm dia , specimen plant in round shape the plant should be ready in form and bushy to satisfaction of landscape architect/PMC (Non SOR Item)	Nos.	44.00	140.00	6,160	
<b>1.3</b>	<b>IRRIGATION</b>					
1.3.1	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	268.20	560.00	1,50,192	
<b>Total</b>					<b>4,82,281</b>	

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**Superintendent Engineer  
MSCL Mangaluru**

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

Sl.No.	Specifications	Unit	Nos	L	B	H	Qty.
<b>1.1</b>	<b>SOIL MIXES and Ground Preparation</b>						
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)						
	Ch.41.0 to 488.0						
	Consider 2/3rd Qty. of 1.1.9	<b>Cum</b>	0.67	295.02			<b>196.68</b>
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(Page No.152,Sl.No.19.90)						
	<b>Median Kerb Stone</b>						
	Ch.41.0 to 488.0						
	Consider 1/3rd Qty. of 1.1.9	<b>Cum</b>	0.33	295.02			<b>98.34</b>
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)						
1.1.4	Screened through sieve of I.S. designation 20 mm						
	<b>Median Kerb Stone</b>						
	Ch.41.0 to 488.0						
	Consider Same Qty. of Item No.1.1.1	<b>Cum</b>					<b>196.7</b>
1.1.5	Screened through sieve of I.S. designation 4.75 mm						
	<b>Median Kerb Stone</b>						
	Ch.41.0 to 488.0						
	Consider Same Qty. of Item No.1.1.2	<b>Cum</b>					<b>98.3</b>
1.1.6	Fine dressing of the ground.	<b>Sqm</b>	1	447.00	0.60		<b>268.20</b>
	Ch.41.0 to 488.0						
1.1.7	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)						
	<b>Median Kerb Stone</b>						
	Ch.41.0 to 488.0	<b>Cum</b>	2	447.00	0.60	0.15	<b>134.3</b>
1.1.8	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)						
	<b>Median Kerb Stone</b>						
	Ch.41.0 to 488.0						
	Consider Same Qty. of 1.1.7	<b>Cum</b>					<b>134.3</b>

Sl.No.	Specifications	Unit	Nos	L	B	H	Qty.
1.1.9	<b>Bed Preparation for , Ground covers , Climbers/ creepers, Shrubs</b>						
	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)						
	<b>Median Kerb Stone</b>						
	Ch.41.0 to 488.0	Cum	1	447.00	0.60	1.1	295.0
1.2	<b>SHRUBS: Supply and Stacking of Shrubs</b>						
1.2.1	Pandanus variegated'gold ' 300mm ht , 300mm c/c in triangulation , with 4-5 fronds (Non SOR Item)	Nos.					1815.0
1.2.2	Bougenvilla variety 'red ' 600mm dia , specimen plant in round shape the plant should be ready in form and bushy to satisfaction of landscape architect/PMC (Non SOR Item)	Nos.					44.0
	<b>Total</b>	<b>Nos.</b>					<b>1859.0</b>
1.3	<b>IRRIGATION</b>						
1.3.1	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)						
	<b>Median Kerb Stone</b>						
	Ch.41.0 to 488.0	Sqm	1	447.00	0.60		268.2

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**Name of the Work :- Mangalore Smart City**  
**3.10.2 Rate Analysis of SOFTSCAPE MEDIAN for Maidan Road**

**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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.27</b>	<b>Rate</b>	<b>140.00</b>	<b>Cum</b>
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(Page No.152,SI.No.19.90)			
	Basic rate		204	
	Add 12% For area weightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 k.m. lead complete (manure measured in stacks will be reduced by 8% for payment) : (KBSR 19.90)			
1.1.4	Screened through sieve of I.S. designation 20 mm			
	Basic rate		204	
	Add 12% For area wightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.5	Screened through sieve of I.S. designation 4.75 mm			
	Basic rate		204	
	Add 12% For area wightage		24.48	
		<b>Rate</b>	<b>228.48</b>	<b>Cum</b>
1.1.6	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		65	
	Add 12% For area wightage		7.8	
		<b>Rate</b>	<b>72.80</b>	<b>Cum</b>
1.1.7	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge (Non SOR item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.28</b>	<b>Rate</b>	<b>23.91</b>	<b>Cum</b>
1.1.8	<b>Bed Prepation for , Ground covers , Climbers/ creepers, Shrubs</b>			



	Preparation of beds for hedging and shrubbery by excavating 60 cm deep and trenching the excavated base to a further depth of 30 cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, leveling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and leveling as directed, within a lead of 50 m, lift up to 1.5 m complete (cost of sludge, manure or extra earth to be paid for separately). (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.29</b>	<b>Rate</b>	<b>146.00</b>	<b>Cum</b>
1.2	<b>SHRUBS: Supply and Stacking of Shrubs</b>			
1.2.1	Pandanus variegted'gold ' 300mm ht , 300mm c/c in triangulation , with 4-5 fronds (Non SOR Item)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.39</b>	<b>Rate</b>	<b>84.00</b>	<b>Nos.</b>
1.2.2	Bougenvilla variety 'red ' 600mm dia , specimen plant in round shape the plant should be ready in form and bushy to satisfaction of landscape architect/PMC			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.40</b>	<b>Rate</b>	<b>140.00</b>	<b>Nos.</b>
1.3	<b>IRRIGATION</b>			
1.4.1	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)			
	<b>Rate Approved as per EOI by MD MSCL Mangalore,Refer Sr.No.29</b>	<b>Rate</b>	<b>560.00</b>	<b>Sqm</b>

**Executive Engineer  
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**Superintendent Engineer  
MSCL Mangaluru**

**Manglore Smart City : Maidan Road**  
**3.11 Rate Analysis for Kerb Stone 900 mm High**

	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 = $247 \times (((0.25+0.3)/2) \times 0.6 + 0.3 \times 0.3) \times 0.405 = 25.5 \text{ cu m}$					
	<b>Material</b>					
	Precast C.C. Kerb stone M - 20	Cum	25.500	13796.70	351815.90	Rate attached
	Shuttering Work					
	Mortar 1:3 for fixing joints = $246 \times 1 \times [((0.250+0.30)/2) \times 0.60 \times 0.005] + (0.30 \times 0.30 \times 0.005) = 0.313 \text{ cum}$ . Cement mortar 1:3 (1 cement : 3 coarse sand)	Cum	0.300	6996.00	2098.80	KSRB 1.3 Pg No 2
	Mason (brick layer) 1st class	day	2.500	261.88	654.70	KSRB Pg No LIV
	Mason (brick layer) 2nd class	day	2.500	258.88	647.20	
	Beldar	day	2.500	258.88	647.20	
	Coolie	day	1.650	258.88	427.15	
	Total				356290.95	
	<b>Add 1 % Water charges</b>				3562.91	
					<b>359853.86</b>	
	Add 10 % Contractor's profit and overheads				35985.39	
	Cost of 25.5 cum				<b>395839.25</b>	
	cost for 1 cum.				<b>15523.11</b>	A
	Cost per Kerb of width 0.405m =A X 0.102cum (Vol of one Kerb)				<b>1583</b>	Per No