ABSTRACT (Comparative Statement)

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

Item No.	Particulars	ECPT :- Rs. 19,60,00,000.00	Rate quoted by Contractor	Market Rate
			Amount	Amount
	CIVIL WORKS:			
I	ABSTRACT OF ANNEX-I		9800000.00	10780000.00
II	ABSTRACT OF ANNEX-II		6715185.76	6615890.86
III	ABSTRACT OF ANNEX-III		32556529.67	32639153.90
IV	ABSTRACT OF ANNEX-IV		6836514.00	7839576.30
V	ABSTRACT OF ANNEX-V		4679994.07	4544191.81
VI	ABSTRACT OF ANNEX-VI		32453305.13	33522170.14
VII	ABSTRACT OF ANNEX-VII		13285000.00	13980000.00
VIII	ABSTRACT OF ANNEX-VIII		487538.76	487538.76
IX	ABSTRACT OF ANNEX-IX		4446000.00	4725240.00
X	ABSTRACT OF ANNEX-X		6977024.09	6950077.29
XI	ABSTRACT OF ANNEX-XI		1213084.19	1778910.16
XII	ABSTRACT OF ANNEX-XII		1128960.00	1080715.78
XIII	ABSTRACT OF ANNEX-XIII		1293708.49	1293708.49
XIV	ABSTRACT OF ANNEX-XIV		2550170.25	2682401.30
XV	ABSTRACT OF ANNEX-XV		1172621.20	1210377.46
	Electrical works:			
XVI	ABSTRACT OF ANNEX-XVI		14136000.00	18426834.00
XVII	ABSTRACT OF ANNEX-XVII		4500000.00	6710400.00
XVIII	ABSTRACT OF ANNEX-XVIII		3890000.00	5178364.00
XIX	ABSTRACT OF ANNEX-XIX		12000000.00	12581835.00
XX	ABSTRACT OF ANNEX-XX		9250000.0	9890142.00
XXI	ABSTRACT OF ANNEX-XXI		10485702.62	10906816.02
	Landscaping:			
XXII	ABSTRACT OF ANNEX-XXII		2400000.00	2510918.37
	Total Amount		18,22,57,338.22	19,63,35,261.64
	Say	**19,60,00,000.00**	**₹ 18,22,50,000.00**	**₹ 19,63,35,262.00**

The rate quoted by M/S Surendra Infrastructure Pvt. Ltd, Contractor of Rs. 18,22,50,000.00 is 7.02% below the ECPT of Rs. 19,60,00,000.00 and 7.17% below the justified market rate of Rs. 19,63,35,262.00

ANNEX - I

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

	CIVIL WORKS							
Item No.	Description of Items							
1	Submission of Survey, Design, Drawing, Specification of Material for approval as per the below mention Scope of work							
	Add 6% for Submission of Design, Drawing, Specification of Material for approval as per ECPT :- Rs. 19,60,00,000.00							

ABSTRACT OF ANNEX-I

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
1	Add 5% for ECPT Amount :- Rs. 19,60,00,000.00	1.00	Job	9800000	9800000.00	10780000.0	**10780000.00**
			Total Amount		**9800000.00**		**10780000.00**

ANNEX - II

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

	CIVIL WORKS								
Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
II	Development of Ramp, Platforms, Steps, RCC structures, as per approved design drawing, specification and direction of EIC								
a)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)								
	Heavy vechile parking area beam	1	1	1	85.70	0.45	0.10	3.86	
	Light vechile parking area beam	1	1	1	82.30	0.45	0.10	3.70	
	From parking to culvert beam	1	1	1	25.50	0.45	0.10	1.15	
	Path way extra area	1	1	1	160.60	1.50	0.10	24.09	
		1	1	1	25.50	1.50	0.10	3.83	
	Parking area	1	1	1	11.80	0.45	0.10	0.53	
	Sep Down area	1	1	2	6.00	0.80	0.10	0.96	
	For steps	1	1	1	6.00	6.00	0.10	3.60	
	Front side ramp	1	1	1	6.00	5.00	0.10	3.00	
							Total	**44.71**	**Cum**
b)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level								
	Heavy vechile parking area								
	Culvert RCC Slab	1	1	1	5.00	4.70	0.25	5.875	
	Beam below for parapet wall	1	1	1	85.70	0.30	0.30	7.713	
	Perapet wall	1	1	1	90.40	0.15	0.60	8.136	
	Light vechile parking area								
	Beam of below parapet wall	1	1	1	82.30	0.30	0.30	7.407	
	Perapet wall	1	1	1	82.30	0.15	0.60	7.407	
	From parking to culvert								
	Beam of below parapet wall	1	1	1	25.50	0.30	0.30	2.295	

	Perapet wall	1	1	1	25.50	0.15	0.80	3.060	
	Near boat area								
	Beam of below parapet wall	1	1	1	83.00	0.30	0.30	7.470	
	Perapet wall	1	1	1	83.00	0.15	1.20	14.940	
	Culvert RCC Slab	1	1	1	5.00	5.00	0.20	5.000	
	From steps to parking area								
	Beam of below parapet wall	1	1	1	18.35	0.30	0.30	1.652	
	Perapet wall	1	1	1	18.35	0.15	0.80	2.202	
	Parking area								
	Beam of below parapet wall	1	1	1	11.80	0.30	0.30	1.062	
	Perapet wall	1	1	1	11.80	0.15	0.60	1.062	
	Sep Down area								
	Beam of below parapet wall	1	1	1	12.00	0.30	0.30	1.080	
	Perapet wall	1	1	1	12.00	0.15	0.80	1.440	
	Path way side wall	1	1	1	12.00	1.50	0.30	5.400	
		1	1	1	12.00	2.00	0.30	7.200	
	From step Down area to Parking								
	Beam of below parapet wall	1	1	1	53.70	0.30	0.30	4.833	
	Perapet wall	1	1	1	53.70	0.15	0.80	6.444	
							Total	**101.678**	**Cum**
c)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
	Side cover wall for Culvert	1	1	1	4.70	1.20	0.20	1.128	
	Parking area	1	1	1	82.30	6.57	0.15	81.124	
	Steps	1	1	4	42.83	0.50	0.10	8.566	
		1	1	3	42.83	0.30	0.10	3.855	
	From steps to parking area	1	1	1	18.35	3.00	0.10	5.505	
	Path way two side wall	1	1	2	18.35	0.20	0.50	3.670	
	Parking area	1	1	1	11.80	5.75	0.15	10.178	
	Sep Down area	1	1	2	6.00	0.50	2.50	15.000	
		1	1	1	6.00	6.00	0.30	10.800	
		1	1	1	6.00	5.00	0.20	6.000	
	Theater steps	1	1	6	17.20	0.10	0.60	6.192	
		1	1	6	17.20	0.10	0.40	4.128	
							Total	**156.145**	**Cum**
d)	Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, bases for columns								
	Bed concrete 1:4:8								
	Heavy vechile parking area beam	1	1	2	85.70	0.10		17.140	
	Light vechile parking area beam	1	1	2	82.30	0.10		16.460	
	From parking to culvert beam	1	1	2	25.50	0.10		5.100	

	Path way extra area	1	1	2	160.60	0.10		32.120	
		1	1	2	25.50	0.10		5.100	
	Parking area	1	1	2	11.80	0.10		2.360	
	Sep Down area	1	2	2	6.00	0.10		2.400	
	For steps	1	1	2	6.00	0.10		1.200	
	Front side ramp	1	1	2	6.00	0.10		1.200	
							Total	**83.080**	**Sqm**
e)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.								
	RCC Concrete								
	Heavy vechile parking area								
	Culvert RCC Slab	1	1	2	5.00	0.15		1.500	
		1	1	2	4.70	0.15		1.410	
	Beam of below parapet wall	1	1	2	85.70	0.30		51.420	
	Perapet wall	1	1	2	90.40	0.15		27.120	
	Light vechile parking area								
	Beam of below parapet wall	1	1	2	82.30	0.30		49.380	
	Perapet wall	1	1	2	82.30	0.15		24.690	
	From parking to culvert								
	Beam of below parapet wall	1	1	2	25.50	0.30		15.300	
	Perapet wall	1	1	2	25.50	0.15		7.650	
	Near boat area								
	Beam of below parapet wall	1	1	2	83.00	0.30		49.800	
	Perapet wall	1	1	2	83.00	0.15		24.900	
	Culvert RCC Slab	1	1	2	5.00	5.00		50.000	
	From steps to parking area								
	Beam of below parapet wall	1	1	2	18.35	0.30		11.010	
	Perapet wall	1	1	2	18.35	0.15		5.505	
	Parking area								
	Beam of below parapet wall	1	1	2	11.80	0.30		7.080	
	Perapet wall	1	1	2	11.80	0.15		3.540	

	Sep Down area								
	Beam of below parapet wall	1	1	2	12.00	0.30		7.200	
	Perapet wall	1	1	2	12.00	0.15		3.600	
	Path way side wall	1	1	2	12.00	1.50		36.000	
		1	1	2	12.00	2.00		48.000	
	PCC Concrete (1:2:4)								
	Side cover wall for Culvert	1	2	1	4.70	0.20		1.880	
		1	2	1	1.20	0.20		0.480	
	Parking area	1	2	1	82.30	0.15		24.690	
		1	2	1	6.57	0.15		1.971	
	Steps	1	2	4	42.83	0.50		171.320	
		1	2	3	42.83	0.30		77.094	
	From steps to parking area	1	2	1	18.35	3.00		110.100	
	Path way two side wall	1	2	2	18.35	0.20		14.680	
	Parking area	1	2	1	11.80	5.75		135.700	
	Sep Down area	1	2	2	6.00	0.50		12.000	
		1	2	1	6.00	6.00		72.000	
		1	2	1	6.00	5.00		60.000	
	Theater steps	1	2	6	17.20	0.10		20.640	
		1	1	6	17.20	0.10		10.320	
							Total	**1137.980**	**Sqm**

ABSTRACT OF ANNEX-II

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
II	Development of Ramp, Platforms, Steps, RCC structures, as per approved design drawing, specification and direction of EIC						
a)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)	44.71	Cum	9363.75	418686.04	9363.75	418686.04

b)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level	101.68	Cum	14759.7	1500729.397	15965.20	1623301.62
c)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	156.15	Cum	12908.1	2015541.54	11487.20	1793674.42
d)	Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, bases for columns	83.08	Sqm	381.8	31719.94	381.80	31719.94
e)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.	1137.98	Sqm	808.8	920398.22	808.80	920398.22
f)	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. A) Thermo-Mechanically Treated bars of grade Fe-500D or more.	11184.525	Kgs	163.45	1828110.61	163.45	1828110.61
			Total Amount		**6715185.76**		**6615890.86**

ANNEX - III

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Height	Qty	Unit
III	Walkways substructure includes, bed, backing expansion joins, thermal steel reinforcements, centring and shuttering complete as per design drawing specification and direction of EIC								
a)	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil in under sea water.								
	Path way one side wall	1	1	1	25.50	0.35	0.30	2.678	
	Near boat area beam	1	1	1	83	0.45	0.30	11.205	
	Path way one side wall	1	1	1	83	0.35	0.30	8.715	
	After Boat area to Nerro area Beam	1	1	1	91.5	0.45	0.30	12.353	
	Path way one side wall	1	1	1	91.5	0.35	0.30	9.608	
	From nerro area to Garrages Beam	1	1	1	93.3	0.45	0.30	12.596	
	Path way one side wall	1	1	1	93.3	0.35	0.30	9.797	
	Path way one side wall	1	1	1	61	0.35	0.30	6.405	
	Beam	1	1	1	61	0.45	0.30	8.235	
	Path way one side wall	1	1	1	70.3	0.35	0.30	7.382	
	Beam	1	1	1	70.3	0.45	0.30	9.491	
	Path way one side wall	1	1	1	25.4	0.35	0.30	2.667	
	Beam	1	1	1	25.4	0.45	0.30	3.429	
	Path way one side wall	1	1	1	125.2	0.35	0.30	13.146	
	Beam	1	1	1	125.3	0.45	0.30	16.916	
	Path way two side wall	1	1	2	18.35	0.35	0.30	3.854	
	Beam	1	1	1	18.35	0.45	0.30	2.477	
	Parking area	1	1	1	11.8	0.45	0.30	1.593	
	Path way two side wall	1	1	2	180	0.35	0.30	37.800	
	Beam	1	1	1	180	0.45	0.30	24.300	
	Path way two side wall	1	1	2	53.7	0.35	0.30	11.277	
	Beam	1	1	1	53.7	0.45	0.30	7.250	
	Path way two side wall	1	1	2	29.9	0.35	0.30	6.279	
	Beam	1	1	1	29.9	0.45	0.30	4.037	
	Path way two side wall	1	1	2	60	0.35	0.30	12.600	
	Beam	1	1	1	60	0.45	0.30	8.100	
	Path way two side wall	1	1	2	79	0.35	0.30	16.590	

	Beam	1	1	1	79	0.45	0.30	10.665	
	From NK International to End Point	1	1	1	217.35	3	0.30	195.615	
	Cable Duct	1	1	1	1682.65	0.5	0.30	252.398	
							Total	729.452	Cum
b)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)								
	Path way one side wall	1	1	1	25.50	0.35	0.10	0.893	
	Near boat area beam	1	1	1	83.00	0.45	0.10	3.735	
	Path way bottom extra area	1	1	1	83.00	1.50	0.10	12.450	
	Path way one side wall	1	1	1	83.00	0.35	0.10	2.905	
	After Boat area to Nerro area Beam	1	1	1	91.50	0.45	0.10	4.118	
	Path way bottom extra area	1	1	1	91.50	1.50	0.10	13.725	
	Path way one side wall	1	1	1	91.50	0.35	0.10	3.203	
	From nerro area to Garrages Beam	1	1	1	93.30	0.45	0.10	4.199	
	Path way bottom extra area	1	1	1	93.30	1.50	0.10	13.995	
	Path way one side wall	1	1	1	93.30	0.35	0.10	3.266	
	Front of Garrage to PHD Seawage pump house	1	1	1	61.00	1.50	0.10	9.150	
	Path way one side wall	1	1	1	61.00	0.35	0.10	2.135	
	Beam	1	1	1	61.00	0.45	0.10	2.745	
	Front of PHD Seawage pump house	1	1	1	70.30	1.50	0.10	10.545	
	Path way one side wall	1	1	1	70.30	0.35	0.10	2.461	
	Beam	1	1	1	70.30	0.45	0.10	3.164	
	From PHD Seawage pump house to Culvert	1	1	1	25.40	1.50	0.10	3.810	
	Path way one side wall	1	1	1	25.40	0.35	0.10	0.889	
	Beam	1	1	1	25.40	0.45	0.10	1.143	
	From Culvert to Step area	1	1	1	125.20	1.50	0.10	18.780	
	Path way one side wall	1	1	1	125.20	0.35	0.10	4.382	
	Beam	1	1	1	125.30	0.45	0.10	5.639	
	From steps to parking area	1	1	1	18.35	1.50	0.10	2.753	
	Path way two side wall	1	1	2	18.35	0.35	0.10	1.285	
	Beam	1	1	1	18.35	0.45	0.10	0.826	
	Parking area	1	1	1	11.80	0.45	0.10	0.531	
	From parking to step Down area	1	1	1	180.00	1.50	0.10	27.000	
	Path way two side wall	1	1	2	180.00	0.35	0.10	12.600	
	Beam	1	1	1	180.00	0.45	0.10	8.100	
	From step Down area to Parking	1	1	1	53.70	1.50	0.10	8.055	

	Path way two side wall	1	1	2	53.70	0.35	0.10	3.759	
	Beam	1	1	1	53.70	0.45	0.10	2.417	
	From Parking area to Culvert no5	1	1	1	29.90	1.50	0.10	4.485	
	Path way two side wall	1	1	2	29.90	0.35	0.10	2.093	
	Beam	1	1	1	29.90	0.45	0.10	1.346	
	From Culvert no5 to Damage area	1	1	1	60.00	1.50	0.10	9.000	
	Path way two side wall	1	1	2	60.00	0.35	0.10	4.200	
	Beam	1	1	1	60.00	0.45	0.10	2.700	
	From Damage area to Culvert no6	1	1	1	79.00	1.50	0.10	11.850	
	Path way two side wall	1	1	2	79.00	0.35	0.10	5.530	
	Beam	1	1	1	79.00	0.45	0.10	3.555	
	From Culvert no6 to NK International	1	1	1	428.00	1.50	0.10	64.200	
	From NK International to End Point	1	1	1	217.35	3.00	0.10	65.205	
	Cable Duct	1	1	1	1682.65	0.50	0.10	84.133	
							Total	**452.948**	**Cum**
c)	Providing and laying in position machine Batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level								
	Heavy vechile parking area								
	Culvert RCC Slab	1	1	1	5.00	4.70	0.25	5.875	
	Beam of below parapet wall	1	1	1	85.70	0.30	0.30	7.713	
	Perapet wall	1	1	1	90.40	0.15	0.60	8.136	
	Light vechile parking area								
	Beam of below parapet wall	1	1	1	82.30	0.30	0.30	7.407	
	Perapet wall	1	1	1	82.30	0.15	0.60	7.407	
	From parking to culvert								
	Beam of below parapet wall	1	1	1	25.50	0.30	0.30	2.295	

	Perapet wall	1	1	1	25.50	0.15	0.80	3.060	
	Near boat area								
	Beam of below parapet wall	1	1	1	83.00	0.30	0.30	7.470	
	Perapet wall	1	1	1	83.00	0.15	1.20	14.940	
	Culvert RCC Slab	1	1	1	5.00	5.00	0.20	5.000	
	After Boat area to Nerro area								
	Beam of below parapet wall	1	1	1	91.50	0.30	0.30	8.235	
	Perapet wall	1	1	1	91.50	0.15	1.20	16.470	
	From nerro area to Garrages								
	Beam of below parapet wall	1	1	1	93.30	0.30	0.30	8.397	
	Perapet wall	1	1	1	93.30	0.15	1.20	16.794	
	Front of Garrage to PHD Seawage pump house								
	Beam of below parapet wall	1	1	1	61.00	0.30	0.30	5.490	
	Perapet wall	1	1	1	61.00	0.15	1.20	10.980	
	Front of PHD Seawage pump house								
	Beam of below parapet wall	1	1	1	70.30	0.30	0.30	6.327	
	Perapet wall	1	1	1	70.30	0.15	1.20	12.654	
	From PHD Seawage pump house to Culvert								
	Beam of below parapet wall	1	1	1	25.40	0.30	0.30	2.286	
	Perapet wall	1	1	1	25.40	0.15	1.20	4.572	
	From Culvert to Step area								
	Beam of below parapet wall	1	1	1	150.00	0.30	0.30	13.500	
	Perapet wall	1	1	1	150.00	0.15	0.60	13.500	
	From steps to parking area								
	Beam of below parapet wall	1	1	1	18.35	0.30	0.30	1.652	
	Perapet wall	1	1	1	18.35	0.15	0.80	2.202	
	Parking area								
	Beam of below parapet wall	1	1	1	11.80	0.30	0.30	1.062	
	Perapet wall	1	1	1	11.80	0.15	0.60	1.062	
	From parking to step Down area								
	Beam of below parapet wall	1	1	1	180.00	0.30	0.30	16.200	
	Perapet wall	1	1	1	180.00	0.15	0.80	21.600	
	Sep Down area								
	Beam of below parapet wall	1	1	1	12.00	0.30	0.30	1.080	
	Perapet wall	1	1	1	12.00	0.15	0.80	1.440	
	Path way side wall	1	1	1	12.00	1.50	0.30	5.400	
		1	1	1	12.00	2.00	0.30	7.200	
	From step Down area to Parking								
	Beam of below parapet wall	1	1	1	53.70	0.30	0.30	4.833	
	Perapet wall	1	1	1	53.70	0.15	0.80	6.444	
	From Parking area to Culvert no5								
	Beam of below parapet wall	1	1	1	29.90	0.30	0.30	2.691	
	Perapet wall	1	1	1	29.90	0.15	0.80	3.588	

ANNEX - III

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Height	Qty	Unit
III	Walkways substructure includes, bed, backing expansion joins, thermal steel reinforcements, centring and shuttering complete as per design drawing specification and direction of EIC								
a)	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil in under sea water.								
	Path way one side wall	1	1	1	25.50	0.35	0.30	2.678	
	Near boat area beam	1	1	1	83	0.45	0.30	11.205	
	Path way one side wall	1	1	1	83	0.35	0.30	8.715	
	After Boat area to Nerro area Beam	1	1	1	91.5	0.45	0.30	12.353	
	Path way one side wall	1	1	1	91.5	0.35	0.30	9.608	
	From nerro area to Garrages Beam	1	1	1	93.3	0.45	0.30	12.596	
	Path way one side wall	1	1	1	93.3	0.35	0.30	9.797	
	Path way one side wall	1	1	1	61	0.35	0.30	6.405	
	Beam	1	1	1	61	0.45	0.30	8.235	
	Path way one side wall	1	1	1	70.3	0.35	0.30	7.382	
	Beam	1	1	1	70.3	0.45	0.30	9.491	
	Path way one side wall	1	1	1	25.4	0.35	0.30	2.667	
	Beam	1	1	1	25.4	0.45	0.30	3.429	
	Path way one side wall	1	1	1	125.2	0.35	0.30	13.146	
	Beam	1	1	1	125.3	0.45	0.30	16.916	
	Path way two side wall	1	1	2	18.35	0.35	0.30	3.854	
	Beam	1	1	1	18.35	0.45	0.30	2.477	
	Parking area	1	1	1	11.8	0.45	0.30	1.593	
	Path way two side wall	1	1	2	180	0.35	0.30	37.800	
	Beam	1	1	1	180	0.45	0.30	24.300	
	Path way two side wall	1	1	2	53.7	0.35	0.30	11.277	
	Beam	1	1	1	53.7	0.45	0.30	7.250	
	Path way two side wall	1	1	2	29.9	0.35	0.30	6.279	
	Beam	1	1	1	29.9	0.45	0.30	4.037	
	Path way two side wall	1	1	2	60	0.35	0.30	12.600	
	Beam	1	1	1	60	0.45	0.30	8.100	
	Path way two side wall	1	1	2	79	0.35	0.30	16.590	

	Beam	1	1	1	79	0.45	0.30	10.665	
	From NK International to End Point	1	1	1	217.35	3	0.30	195.615	
	Cable Duct	1	1	1	1682.65	0.5	0.30	252.398	
							Total	729.452	Cum
b)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)								
	Path way one side wall	1	1	1	25.50	0.35	0.10	0.893	
	Near boat area beam	1	1	1	83.00	0.45	0.10	3.735	
	Path way bottom extra area	1	1	1	83.00	1.50	0.10	12.450	
	Path way one side wall	1	1	1	83.00	0.35	0.10	2.905	
	After Boat area to Nerro area Beam	1	1	1	91.50	0.45	0.10	4.118	
	Path way bottom extra area	1	1	1	91.50	1.50	0.10	13.725	
	Path way one side wall	1	1	1	91.50	0.35	0.10	3.203	
	From nerro area to Garrages Beam	1	1	1	93.30	0.45	0.10	4.199	
	Path way bottom extra area	1	1	1	93.30	1.50	0.10	13.995	
	Path way one side wall	1	1	1	93.30	0.35	0.10	3.266	
	Front of Garrage to PHD Seawage pump house	1	1	1	61.00	1.50	0.10	9.150	
	Path way one side wall	1	1	1	61.00	0.35	0.10	2.135	
	Beam	1	1	1	61.00	0.45	0.10	2.745	
	Front of PHD Seawage pump house	1	1	1	70.30	1.50	0.10	10.545	
	Path way one side wall	1	1	1	70.30	0.35	0.10	2.461	
	Beam	1	1	1	70.30	0.45	0.10	3.164	
	From PHD Seawage pump house to Culvert	1	1	1	25.40	1.50	0.10	3.810	
	Path way one side wall	1	1	1	25.40	0.35	0.10	0.889	
	Beam	1	1	1	25.40	0.45	0.10	1.143	
	From Culvert to Step area	1	1	1	125.20	1.50	0.10	18.780	
	Path way one side wall	1	1	1	125.20	0.35	0.10	4.382	
	Beam	1	1	1	125.30	0.45	0.10	5.639	
	From steps to parking area	1	1	1	18.35	1.50	0.10	2.753	
	Path way two side wall	1	1	2	18.35	0.35	0.10	1.285	
	Beam	1	1	1	18.35	0.45	0.10	0.826	
	Parking area	1	1	1	11.80	0.45	0.10	0.531	
	From parking to step Down area	1	1	1	180.00	1.50	0.10	27.000	
	Path way two side wall	1	1	2	180.00	0.35	0.10	12.600	
	Beam	1	1	1	180.00	0.45	0.10	8.100	
	From step Down area to Parking	1	1	1	53.70	1.50	0.10	8.055	

	Path way two side wall	1	1	2	53.70	0.35	0.10	3.759	
	Beam	1	1	1	53.70	0.45	0.10	2.417	
	From Parking area to Culvert no5	1	1	1	29.90	1.50	0.10	4.485	
	Path way two side wall	1	1	2	29.90	0.35	0.10	2.093	
	Beam	1	1	1	29.90	0.45	0.10	1.346	
	From Culvert no5 to Damage area	1	1	1	60.00	1.50	0.10	9.000	
	Path way two side wall	1	1	2	60.00	0.35	0.10	4.200	
	Beam	1	1	1	60.00	0.45	0.10	2.700	
	From Damage area to Culvert no6	1	1	1	79.00	1.50	0.10	11.850	
	Path way two side wall	1	1	2	79.00	0.35	0.10	5.530	
	Beam	1	1	1	79.00	0.45	0.10	3.555	
	From Culvert no6 to NK International	1	1	1	428.00	1.50	0.10	64.200	
	From NK International to End Point	1	1	1	217.35	3.00	0.10	65.205	
	Cable Duct	1	1	1	1682.65	0.50	0.10	84.133	
							Total	**452.948**	**Cum**
c)	Providing and laying in position machine Batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level								
	Heavy vechile parking area								
	Culvert RCC Slab	1	1	1	5.00	4.70	0.25	5.875	
	Beam of below parapet wall	1	1	1	85.70	0.30	0.30	7.713	
	Perapet wall	1	1	1	90.40	0.15	0.60	8.136	
	Light vechile parking area								
	Beam of below parapet wall	1	1	1	82.30	0.30	0.30	7.407	
	Perapet wall	1	1	1	82.30	0.15	0.60	7.407	
	From parking to culvert								
	Beam of below parapet wall	1	1	1	25.50	0.30	0.30	2.295	

	Perapet wall	1	1	1	25.50	0.15	0.80	3.060	
	Near boat area								
	Beam of below parapet wall	1	1	1	83.00	0.30	0.30	7.470	
	Perapet wall	1	1	1	83.00	0.15	1.20	14.940	
	Culvert RCC Slab	1	1	1	5.00	5.00	0.20	5.000	
	After Boat area to Nerro area								
	Beam of below parapet wall	1	1	1	91.50	0.30	0.30	8.235	
	Perapet wall	1	1	1	91.50	0.15	1.20	16.470	
	From nerro area to Garrages								
	Beam of below parapet wall	1	1	1	93.30	0.30	0.30	8.397	
	Perapet wall	1	1	1	93.30	0.15	1.20	16.794	
	Front of Garrage to PHD Seawage pump house								
	Beam of below parapet wall	1	1	1	61.00	0.30	0.30	5.490	
	Perapet wall	1	1	1	61.00	0.15	1.20	10.980	
	Front of PHD Seawage pump house								
	Beam of below parapet wall	1	1	1	70.30	0.30	0.30	6.327	
	Perapet wall	1	1	1	70.30	0.15	1.20	12.654	
	From PHD Seawage pump house to Culvert								
	Beam of below parapet wall	1	1	1	25.40	0.30	0.30	2.286	
	Perapet wall	1	1	1	25.40	0.15	1.20	4.572	
	From Culvert to Step area								
	Beam of below parapet wall	1	1	1	150.00	0.30	0.30	13.500	
	Perapet wall	1	1	1	150.00	0.15	0.60	13.500	
	From steps to parking area								
	Beam of below parapet wall	1	1	1	18.35	0.30	0.30	1.652	
	Perapet wall	1	1	1	18.35	0.15	0.80	2.202	
	Parking area								
	Beam of below parapet wall	1	1	1	11.80	0.30	0.30	1.062	
	Perapet wall	1	1	1	11.80	0.15	0.60	1.062	
	From parking to step Down area								
	Beam of below parapet wall	1	1	1	180.00	0.30	0.30	16.200	
	Perapet wall	1	1	1	180.00	0.15	0.80	21.600	
	Sep Down area								
	Beam of below parapet wall	1	1	1	12.00	0.30	0.30	1.080	
	Perapet wall	1	1	1	12.00	0.15	0.80	1.440	
	Path way side wall	1	1	1	12.00	1.50	0.30	5.400	
		1	1	1	12.00	2.00	0.30	7.200	
	From step Down area to Parking								
	Beam of below parapet wall	1	1	1	53.70	0.30	0.30	4.833	
	Perapet wall	1	1	1	53.70	0.15	0.80	6.444	
	From Parking area to Culvert no5								
	Beam of below parapet wall	1	1	1	29.90	0.30	0.30	2.691	
	Perapet wall	1	1	1	29.90	0.15	0.80	3.588	

	From Culvert no5 to Damage area								
	Beam of below parapet wall	1	1	1	60.00	0.30	0.30	5.400	
	Perapet wall	1	1	1	60.00	0.15	0.80	7.200	
	From Damage area to Culvert no6								
	Beam of below parapet wall	1	1	1	79.00	0.30	0.30	7.110	
	Perapet wall	1	1	1	79.00	0.15	0.80	9.480	
	From Culvert no6 to End point								
	Beam of below parapet wall	1	1	1	428.00	0.30	0.30	38.520	
	Perapet wall	1	1	1	428.00	0.15	0.80	51.360	
	Cable Duct Slab	1	1	1	1682.65	0.50	0.05	42.066	
							Total	426.098	**Cum**
c)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
	Pathway Slab								
	Heavy and light vechile parking area	1	1	1	160.60	3.00	0.15	72.27	
	From parking to culvert	1	1	1	25.50	3.00	0.15	11.48	
	Near boat area	1	1	1	83.00	3.00	0.15	37.35	
	After Boat area to Nerro area	1	1	1	91.50	3.00	0.15	41.18	
	From nerro area to Garrages	1	1	1	93.30	3.00	0.15	41.99	
	Front of Garrage to PHD Seawage pump house	1	1	1	61.00	3.00	0.15	27.45	
	Front of PHD Seawage pump house	1	1	1	70.30	3.00	0.15	31.64	
	From PHD Seawage pump house to Culvert	1	1	1	25.40	3.00	0.15	11.43	
	From Culvert to Step area	1	1	1	150.00	3.00	0.15	67.50	
	From steps to parking area	1	1	1	18.35	3.00	0.15	8.26	
	Parking area	1	1	1	11.80	3.00	0.15	5.31	
	From parking to step Down area	1	1	1	180.00	3.00	0.15	81.00	
	Sep Down area	1	1	1	12.00	3.00	0.15	5.40	
	From step Down area to Parking	1	1	1	53.70	3.00	0.15	24.17	
	From Parking area to Culvert no5	1	1	1	29.90	3.00	0.15	13.46	
	Theater steps	1	1	1	17.20	3.00	0.15	7.74	
	From Culvert no5 to Damage area	1	1	1	60.00	3.00	0.15	27.00	
	From Damage area to Culvert no6	1	1	1	79.00	3.00	0.15	35.55	
	From Culvert no6 to NK International	1	1	1	428.00	3.00	0.15	192.60	
	From NK International to End Point	1	1	1	217.35	3.00	0.15	97.81	
							Total	840.555	**Cum**
d)	Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, bases for columns								

	Path way one side wall	1	1	2	25.50	0.10		5.10	
	Near boat area beam	1	1	2	83.00	0.10		16.60	
	Path way one side wall	1	1	2	83.00	0.10		16.60	
	After Boat area to Nerro area Beam	1	1	2	91.50	0.10		18.30	
	From nerro area to Garrages Beam	1	1	2	93.30	0.10		18.66	
	Front of Garrage to PHD Seawage pump house	1	1	2	61.00	0.10		12.20	
	Beam	1	1	2	70.30	0.10		14.06	
	Beam	1	1	2	25.40	0.10		5.08	
	From Culvert to Step area	1	1	2	125.20	0.10		25.04	
	From steps to parking area	1	1	2	18.35	0.10		3.67	
	Parking area	1	1	2	11.80	0.10		2.36	
	From parking to step Down area	1	1	2	180.00	0.10		36.00	
	From step Down area to Parking	1	1	2	53.70	0.10		10.74	
	From Parking area to Culvert no5	1	1	2	29.90	1.50		89.70	
	From Culvert no5 to Damage area	1	1	2	60.00	1.50		180.00	
	From Damage area to Culvert no6	1	1	2	79.00	1.50		237.00	
	Path way two side wall	1	1	2	79.00	0.10		15.80	
	From Culvert no6 to NK International	1	1	2	428.00	0.10		85.60	
	From NK International to End Point	1	1	2	217.35	0.10		43.47	
	Cable Duct	1	1	2	1682.65	0.10		336.53	
	Pathway Slab								
	Heavy and light vechile parking area	1	1	2	160.60	0.15		48.18	
	From parking to culvert	1	1	2	25.50	0.15		7.65	
	Near boat area	1	1	2	83.00	0.15		24.90	
	After Boat area to Nerro area	1	1	2	91.50	0.15		27.45	
	From nerro area to Garrages	1	1	2	93.30	0.15		27.99	
	Front of Garrage to PHD Seawage pump house	1	1	2	61.00	0.15		18.30	
	Front of PHD Seawage pump house	1	1	2	70.30	0.15		21.09	
	From PHD Seawage pump house to Culvert	1	1	2	25.40	0.15		7.62	
	From Culvert to Step area	1	1	2	150.00	0.15		45.00	
	From steps to parking area	1	1	2	18.35	0.15		5.51	
	Parking area	1	1	2	11.80	0.15		3.54	
	From parking to step Down area	1	1	2	180.00	0.15		54.00	
	Sep Down area	1	1	2	12.00	0.15		3.60	
	From step Down area to Parking	1	1	2	53.70	0.15		16.11	

	From Parking area to Culvert no5	1	1	2	29.90	0.15		8.97	
	Theater steps	1	1	2	17.20	0.15		5.16	
	From Culvert no5 to Damage area	1	1	2	60.00	0.15		18.00	
	From Damage area to Culvert no6	1	1	2	79.00	0.15		23.70	
	From Culvert no6 to NK International	1	1	2	428.00	0.15		128.40	
	From NK International to End Point	1	1	2	217.35	0.15		65.21	
							Total	**1732.880**	**Sqm**
e)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.								
	Heavy vechile parking area								
	Culvert RCC Slab	1	1	2	5.00	0.25		2.500	
		1	1	2	4.70	0.25		2.350	
	Beam of below parapet wall	1	1	2	85.70	0.30		51.420	
	Perapet wall	1	1	2	90.40	0.75		135.600	
	Light vechile parking area								
	Beam of below parapet wall	1	1	2	82.30	0.30		49.380	
	Perapet wall	1	1	2	82.30	0.75		123.450	
	From parking to culvert								
	Beam of below parapet wall	1	1	2	25.50	0.30		15.300	
	Perapet wall	1	1	2	25.50	0.80		40.800	
	Near boat area								
	Beam of below parapet wall	1	1	2	83.00	0.30		49.800	
	Perapet wall	1	1	2	83.00	1.20		199.200	
	Culvert RCC Slab	1	1	2	5.00	0.25		2.500	
		1	1	2	5.00	0.25			
	After Boat area to Nerro area								
	Beam of below parapet wall	1	1	2	91.50	0.30		54.900	
	Perapet wall	1	1	2	91.50	1.20		219.600	
	From nerro area to Garrages								
	Beam of below parapet wall	1	1	2	93.30	0.30		55.980	
	Perapet wall	1	1	2	93.30	1.20		223.920	
	Front of Garrage to PHD Seawage pump house								
	Beam of below parapet wall	1	1	2	61.00	0.30		36.600	
	Perapet wall	1	1	2	61.00	1.20		146.400	
	Front of PHD Seawage pump house								
	Beam of below parapet wall	1	1	2	70.30	0.30		42.180	
	Perapet wall	1	1	2	70.30	1.20		168.720	

	From PHD Seawage pump house to Culvert								
	Beam of below parapet wall	1	1	2	25.40	0.30		15.240	
	Perapet wall	1	1	2	25.40	1.20		60.960	
	From Culvert to Step area								
	Beam of below parapet wall	1	1	2	150.00	0.30		90.000	
	Perapet wall	1	1	2	150.00	0.75		225.000	
	From steps to parking area								
	Beam of below parapet wall	1	1	2	18.35	0.30		11.010	
	Perapet wall	1	1	2	18.35	0.80		29.360	
	Parking area								
	Beam of below parapet wall	1	1	2	11.80	0.30		7.080	
	Perapet wall	1	1	2	11.80	0.75		17.700	
	From parking to step Down area								
	Beam of below parapet wall	1	1	2	180.00	0.30		108.000	
	Perapet wall	1	1	2	180.00	0.80		288.000	
	Sep Down area								
	Beam of below parapet wall	1	1	2	12.00	0.30		7.200	
	Perapet wall	1	1	2	12.00	0.80		19.200	
	Path way side wall	1	1	2	12.00	0.30		7.200	
		1	1	2	12.00	0.30		7.200	
		1	1	2	2.00	0.30		1.200	
	From step Down area to Parking								
	Beam of below parapet wall	1	1	2	53.70	0.30		32.220	
	Perapet wall	1	1	2	53.70	0.80		85.920	
	From Parking area to Culvert no5								
	Beam of below parapet wall	1	1	2	29.90	0.30		17.940	
	Perapet wall	1	1	2	29.90	0.80		47.840	
	From Culvert no5 to Damage area								
	Beam of below parapet wall	1	1	2	60.00	0.30		36.000	
	Perapet wall	1	1	2	60.00	0.80		96.000	
	From Damage area to Culvert no6								
	Beam of below parapet wall	1	1	2	79.00	0.30		47.400	
	Perapet wall	1	1	2	79.00	0.80		126.400	
	From Culvert no6 to End point								
	Beam of below parapet wall	1	1	2	428.00	0.30		256.800	
	Perapet wall	1	1	2	428.00	0.80		684.800	
	Cable Duct Slab	1	1	2	1682.65	0.05		168.265	
		1	1	1682	0.50	0.05		42.050	
							Total	**4156.585**	**Sqm**

ABSTRACT OF ANNEX-III

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil in under sea water.	729.45	Cum	349.6	255016.51	349.6	255016.51
b)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)	452.95	Cum	9363.75	4241294.18	9363.75	4241294.18
c)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level	426.10	Cum	14759.7	6289074.961	15965.20	6802735.80
c)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	840.56	Cum	12000	10086660.00	11487.20	9655623.40
d)	Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, bases for columns	1732.88	Sqm	381.8	661613.58	381.80	661613.58
e)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.	4156.59	Sqm	808.8	3361845.95	808.80	3361845.95
e)	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. A) Thermo-Mechanically Treated bars of grade Fe-500D or more.	46870.753	Kgs	163.45	7661024.496	163.45	7661024.50
			Total Amount		**32556529.67**		**32639153.90**

ANNEX - IV

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Length	Breadth	Height	Qty	Unit
IV	Providing and Laying of Paver tiles as per the design drawing specification and direction of EIC					
a)	Providing and laying factory made chamfered edge Cement Concrete paver blocks in foot path, park & lawns driveway or light & traffic parking etc. of required strength, thickness & size/shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50 mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks unto the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineer-in-Charge. 80mm thick Cement concrete paver block of M-35 grade with approved colour, design & pattern.					
	Heavy and light vechile parking area	160.60	3.00		481.80	
	From parking to culvert	25.50	3.00		76.50	
	Near boat area	83.00	3.00		249.00	
	After Boat area to Nerro area	91.50	3.00		274.50	
	From nerro area to Garrages	93.30	3.00		279.90	
	Front of Garrage to PHD Seawage pump house	61.00	3.00		183.00	
	Front of PHD Seawage pump house	70.30	3.00		210.90	
	From PHD Seawage pump house to Culvert	25.40	3.00		76.20	
	From Culvert to Step area	150.00	3.00		450.00	
	From steps to parking area	18.35	3.00		55.05	
	Parking area	11.80	3.00		35.40	
	From parking to step Down area	180.00	3.00		540.00	
	Sep Down area	12.00	3.00		36.00	
	From step Down area to Parking	53.70	3.00		161.10	
	From Parking area to Culvert no5	29.90	3.00		89.70	
	Theater steps	17.20	3.00		51.60	
	From Culvert no5 to Damage area	60.00	3.00		180.00	
	From Damage area to Culvert no6	79.00	3.00		237.00	
	From Culvert no6 to NK International	428.00	3.00		1284.00	
	From NK International to End Point	217.35	3.00		652.05	
				Total	**5603.700**	**Sqms**

ABSTRACT OF ANNEX-IV

Item No.	Particulars	unit	Rate quoted by Contractor		Market Rate	
			Rate	Amount	Rate	Amount
a)	Providing and laying factory made chamfered edge Cement Concrete paver blocks in foot path, park & lawns driveway or light & traffic parking etc. of required strength, thickness & size/shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50 mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks unto the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineer-in-Charge. 80mm thick Cement concrete paver block of M-35 grade with approved colour, design & pattern.	Sqm	1220	6836514.00	1399.00	7839576.30

ANALYSIS OF RATE

Providing and laying factory made chamfered edge Cement Concrete paver blocks in foot path, park & lawns driveway or light & traffic parking etc. of required strength, thickness & size/shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50 mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks unto the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineer-in-Charge.
80mm thick Cement concrete paver block of M-35 grade with approved colour, design & pattern.

S No	Description of Items	Rate	Unit	Quantity	Amount	
	Details of coast for 10.00 Sqm					
	(as per actul observation)					
	Material:					
1	Concrete paver blocks factory made grade M-35 made of C&D waste (75mm thikness) Bending layer - 50mm thick 10x0.050=0.50cum	600.00	Mtr	10.00	6000.00	
	Coarse sand (zone III)	2000.00	Cum	0.50	1000.00	
	Carriage of Coarse sand	409.80	Cum	0.50	204.90	
	Fine sand (zone IV)	5000.00	Cum	0.15	750.00	
	Carriage of Fine sand	323.70	Cum	0.15	48.56	
	Laying charges (Based on actual observation)					

	Labour					
	Mason (brick layer) 1st class	900.00	day	0.50	450.00	
	Mason (brick layer) 2nd class	800.00	day	0.50	400.00	
	Beldar	700.00	day	1.00	700.00	
	Coolie	700.00	day	0.50	350.00	
			Total		9903.46	
	Add 1% for water charges				99.03	
			Total		10002.49	
	carrage of material and labour charges LS				200.05	
			Total		10202.54	
	GST @18% on				1836.46	
	Contractor profite @15% on				1805.85	
			Total		13844.85	
	Add 1% for Labour Cess				**138.45**	
	Cost for 10.00Sqm				13983.29	
	Cost for 1.00Sqm				1398.33	
				Say Rs.	**1399.00**	

ANNEX - V

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Height	Qty	Unit
V	Development of Planters includes excavation, PCC, centering and shuttering as per the approved design drawing specification and direction of EIC								
a)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)								
	Near boat area								
	PCC Walls	1	1	1	107.00	1.20	0.10	12.84	
	Path wall	1	1	1	83.00	12.00	0.10	99.60	
	planters area	1	1	16	8.00	0.60	0.10	7.68	
							Total	**120.12**	**Cum**
b)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
	PCC Walls raft	1	1	1	107.00	1.20	0.25	32.10	
	Wall	1	1	1	107.00	1.50	0.65	104.33	
	Path wall	1	1	1	83.00	12.00	0.10	99.60	
	planters area	1	1	16	8.00	0.30	0.75	28.80	
							Total	**264.83**	**Cum**
c)	Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, bases for columns								
	Bed concrete	1	1	2	107.00	0.10		21.40	
	PCC Walls raft	1	1	2	107.00	0.25		53.50	
		1	1	2	1.20	0.25		0.60	
	Path way	1	1	1	83.00	0.10		8.30	
		1	1	1	83.00	0.10		8.30	
	planters area	1	1	16	8.00	0.10		12.80	
							Total	**104.90**	**Sqm**
d)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.								
	PCC Walls	1	1	2	107.00	1.50		321.00	
	planters area	1	1	16	8.00	0.75		96.00	
							Total	**417.00**	**Sqm**

ABSTRACT OF ANNEX-V

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)	120.12	Cum	9363.75	1124773.65	9363.75	1124773.65
b)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	264.83	Cum	12000	3177900.00	11487.20	3042097.74
c)	Centering and shuttering including strutting, propping etc. and removal of form work for : Foundations, footings, bases for columns	104.90	Sqm	381.8	40050.82	381.8	40050.82
d)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.	417.00	Sqm	808.8	337269.60	808.8	337269.60
			Total Amount		**4679994.07**		4544191.81

ANNEX - VI

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Height	Qty	Unit
VI	Development of Rams, Platforms, Steps, RCC structures, Entry and Exit Gates (800 cum) as per approved design drawing , specification and direction of EIC								
a)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level								
	Side cover wall for Culvert	1	1	1	4.70	1.20	0.20	1.128	
	Path way one side wall	1	1	1	160.60	0.30	0.60	28.908	
	Path way base concrete	1	1	1	160.60	3.00	0.10	48.180	
	From parking to culvert	1	1	1	25.50	3.00	0.10	7.650	
	Path way one side wall	1	1	1	25.50	0.20	0.50	2.550	
	Near boat area	1	1	1	83.00	3.00	0.10	24.900	
	Path way one side wall	1	1	1	83.00	0.30	0.80	19.920	
	After Boat area to Nerro area	1	1	1	91.50	3.00	0.10	27.450	
	Path way one side wall	1	1	1	91.50	0.30	0.80	21.960	
	From nerro area to Garrages	1	1	1	93.30	3.00	0.10	27.990	
	Path way one side wall	1	1	1	93.30	0.30	0.60	16.794	
	Front of Garrage to PHD Seawage pump house	1	1	1	61.00	3.00	0.10	18.300	
	Path way one side wall	1	1	1	61.00	0.30	0.60	10.980	
	Front of PHD Seawage pump house	1	1	1	70.30	3.00	0.10	21.090	
	Path way one side wall	1	1	1	70.30	0.30	0.60	12.654	
	From PHD Seawage pump house to Culvert	1	1	1	25.40	3.00	0.10	7.620	
	Path way one side wall	1	1	1	25.40	0.30	0.60	4.572	

	From Culvert to Step area	1	1	1	150.00	2.50	0.10	37.500	
	Path way one side wall	1	1	1	125.20	0.30	0.60	22.536	
	From parking to step Down area	1	1	1	180.00	3.00	0.10	54.000	
	Path way two side wall	1	1	2	180.00	0.20	0.50	36.000	
	From step Down area to Parking	1	1	1	53.70	3.00	0.10	16.110	
	Path way two side wall	1	1	2	53.70	0.20	0.50	10.740	
	From Parking area to Culvert no5	1	1	1	29.90	3.00	0.10	8.970	
	Path way two side wall	1	1	2	29.90	0.20	0.50	5.980	
	From Culvert no5 to Damage area	1	1	1	60.00	3.00	0.10	18.000	
	Path way two side wall	1	1	2	60.00	0.20	0.50	12.000	
	From Damage area to Culvert no6	1	1	1	79.00	3.00	0.10	23.700	
	Path way two side wall	1	1	2	79.00	0.20	0.50	15.800	
	From Culvert no6 to NK International	1	1	1	428.00	3.00	0.10	128.400	
	Path way two side wall	1	1	2	428.00	0.20	0.50	85.600	
	From NK International to End Point	1	1	1	217.35	3.00	0.10	65.205	
	Path way two side wall	1	1	2	217.35	0.20	0.50	43.470	
							Total	**886.657**	**Cum**
b)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.								
	Side cover wall for Culvert	1	1	2	4.70	1.20		11.280	
		1	1	2	0.20	1.20		0.480	
	Path way one side wall	1	1	2	160.60	0.75		240.900	
	Path way base concrete	1	1	2	160.60	0.10		32.120	
	From parking to culvert	1	1	2	25.50	0.10		5.100	
		1	1	2	3.00	0.10		0.600	
	Path way one side wall	1	1	2	25.50	0.50		25.500	
	Near boat area	1	1	2	83.00	0.80		132.800	
	Path way one side wall	1	1	2	83.00	0.10		16.600	
	After Boat area to Nerro area	1	1	2	91.50	0.80		146.400	
	Path way one side wall	1	1	2	91.50	0.10		18.300	
	From nerro area to Garrages	1	1	2	93.30	0.60		111.960	

	Path way one side wall	1	1	2	93.30	0.10		18.660	
	Front of Garrage to PHD Seawage pump house	1	1	2	61.00	0.60		73.200	
	Path way one side wall	1	1	2	61.00	0.10		12.200	
	Front of PHD Seawage pump house	1	1	2	70.30	0.60		84.360	
	Path way one side wall	1	1	2	70.30	0.10		14.060	
	From PHD Seawage pump house to Culvert	1	1	2	25.40	0.60		30.480	
	Path way one side wall	1	1	2	25.40	0.10		5.080	
	From Culvert to Step area	1	1	2	150.00	0.60		180.000	
	Path way one side wall	1	1	2	125.20	0.10		25.040	
	From parking to step Down area	1	1	2	180.00	0.50		180.000	
	Path way two side wall	1	1	2	180.00	0.10		36.000	
	From step Down area to Parking	1	1	2	53.70	0.50		53.700	
	Path way two side wall	1	1	2	53.70	0.10		10.740	
	From Parking area to Culvert no5	1	1	2	29.90	0.50		29.900	
	Path way two side wall	1	1	2	29.90	0.10		5.980	
	From Culvert no5 to Damage area	1	1	2	60.00	0.50		60.000	
	Path way two side wall	1	1	2	60.00	0.10		12.000	
	From Damage area to Culvert no6	1	1	2	79.00	0.50		79.000	
	Path way two side wall	1	1	2	79.00	0.10		15.800	
	From Culvert no6 to NK International	1	1	2	428.00	0.50		428.000	
	Path way two side wall	1	1	2	428.00	0.10		85.600	
	From NK International to End Point	1	1	2	217.35	0.50		217.350	
	Path way two side wall	1	1	2	217.35	0.10		43.470	
							Total	**2442.660**	**Sqm**

ABSTRACT OF ANNEX-VI

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level	886.66	Cum	14759.7	13086791.32	15965.20	14155656.34
b)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.	2442.66	Sqm	808.8	1975623.41	808.8	1975623.41
f)	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. A) Thermo-Mechanically Treated bars of grade Fe-500D or more.	106398.840	Kgs	163.45	17390890.40	163.45	17390890.40
			Total Amount		**32453305.13**		33522170.14

ANNEX - VII

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

	CIVIL WORKS								
Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
VII	Fixing of FRP rails of requisite quality along with Rcc beams and columns including all finishing works and painting work complete for stretch of 2.5 km as per approved designe drawing, specification and direction of EIC								
	FRP Hand railling								
	Heavy vechile parking area	1	1	1	90.40			90.400	
	Light vechile parking area	1	1	1	82.30			82.300	
	From parking to culvert	1	1	1	25.50			25.500	
	Near boat area	1	1	1	83.00			83.000	
	After Boat area to Nerro area	1	1	1	91.50			91.500	
	From nerro area to Garrages	1	1	1	93.30			93.300	
	Front of Garrage to PHD Seawage pump house	1	1	1	61.00			61.000	
	Front of PHD Seawage pump house	1	1	1	70.30			70.300	
	From PHD Seawage pump house to Culvert	1	1	1	25.40			25.400	
	From Culvert to Step area	1	1	1	150.00			150.000	
	From steps to parking area	1	1	1	18.35			18.350	
	Parking area	1	1	1	11.80			11.800	
	From parking to step Down area	1	1	1	180.00			180.000	
	Sep Down area	1	1	1	12.00			12.000	
	Sides	1	1	2	6.00			12.000	
	From step Down area to Parking	1	1	1	53.70			53.700	
	From Parking area to Culvert no5	1	1	1	29.90			29.900	
	Theater steps	1	1	1	17.20			17.200	
	Sides	1	1	2	4.00			8.000	
	From Culvert no5 to Damage area	1	1	1	60.00			60.000	
	From Damage area to Culvert no6	1	1	1	79.00			79.000	
	From Culvert no6 to End point	1	1	1	428.00			428.000	
							Total	**1682.650**	**Rmts**

ABSTRACT OF ANNEX-VII

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Fixing of FRP rails of requisite quality along with Rcc beams and columns including all finishing works and painting work complete for stretch of 2.5 km as per approved designe drawing, specification and direction of EIC	2500.00	Rm	5314	13285000.00	5592.00	13980000.00
			Total Amount		13285000.00		13980000.00

ANALYSIS OF RATE

Fixing of FRP rails of requisite quality along with Rcc beams and columns including all finishing works and painting work complete for stretch of 2.5 km as per approved designe drawing, specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount	
	Details of coast for 10.00 mtrs					
	(as per actul observation)					
1	FRP Hand rail of superior quality	4000.00	Mtr	10.00	40000.00	
	carrage of material and labour charges LS				800.00	
	GST @18% on Rs. **40,800.00**				7344.00	
	Contractor profite @15% on Rs.**48,144.00**				7221.60	
	Total				**55365.60**	
	Add 1% for Labour Cess				**553.66**	
	Coat for 10.00Mtrs				**55919.26**	
	Cost for 1.00Mtr				**5591.93**	
				Say Rs.	**5592.00**	

ANNEX - VIII

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
VIII	Artistic Wall painting/Road marking where ever required works as per specification and direction of EIC.								
	Heavy vechile parking area	1	1	1	90.40	1.50		135.600	
	Light vechile parking area	1	1	1	82.30	1.50		123.450	
	From parking to culvert	1	1	1	25.50	1.50		38.250	
	Near boat area	1	1	1	83.00	1.50		124.500	
	After Boat area to Nerro area	1	1	1	91.50	1.50		137.250	
	From nerro area to Garrages	1	1	1	93.30	1.50		139.950	
	Front of Garrage to PHD Seawage pump house	1	1	1	61.00	1.50		91.500	
	Front of PHD Seawage pump house	1	1	1	70.30	1.50		105.450	
	From PHD Seawage pump house to Culvert	1	1	1	25.40	1.50		38.100	
	From Culvert to Step area	1	1	1	150.00	1.50		225.000	
	From steps to parking area	1	1	1	18.35	1.50		27.525	
	Parking area	1	1	1	11.80	1.50		17.700	
	From parking to step Down area	1	1	1	180.00	1.50		270.000	
	Sep Down area	1	1	1	12.00	1.50		18.000	
	Sides	1	1	2	6.00	1.50		18.000	
	From step Down area to Parking	1	1	1	53.70	1.50		80.550	
	From Parking area to Culvert no5	1	1	1	29.90	1.50		44.850	
	Theater steps	1	1	1	17.20	1.50		25.800	
	Sides	1	1	2	4.00	1.50		12.000	
	From Culvert no5 to Damage area	1	1	1	60.00	1.50		90.000	
	From Damage area to Culvert no6	1	1	1	79.00	1.50		118.500	
	From Culvert no6 to End point	1	1	1	428.00	1.50		642.000	
	plants area								
	Path way	1	1	1	107.00	1.20		128.40	
	planters area	1	2	16	8.00	0.50		128.00	
							Total	2780.375	Sqm

ABSTRACT OF ANNEX-VIII

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Artistic Wall painting/Road marking where ever required works as per specification and direction of EIC.	2780.38	Sqm	175.35	487538.76	175.35	487538.76
			Total Amount		487538.76		487538.76

ANNEX - IX

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
IX	Fixing of FRP (130 nos) Victoria bench of standard size as per the direction of Engineer in charge.								
	FRP Benches	1	1	1	130			130.000	
							Total	**130.000**	**Nos**

ABSTRACT OF ANNEX-IX

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Fixing of FRP (130 nos) Victoria bench of standard size as per the direction of Engineer in charge.	130.00	Nos	34200	4446000.00	36348.00	4725240.00
			Total Amount		**4446000.00**		**4725240.00**

ANALYSIS OF RATE

Fixing of FRP (130 nos) Victoria bench of standard size as per the direction of Engineer in charge.

S No	Description of Items	Rate	Unit	Quantity	Amount	
	Details of coast for 1.00 No					
1	Victoria bench of standard size	26000.00	No	1.00	26000.00	
	carrage of material and labour charges LS				520.00	
	GST @18% on Rs. **26,520.00**				4773.60	
	Contractor profite @15% on Rs.**31,293.60**				4694.04	
	Total				35987.64	
	Add 1% for Labour Cess				359.88	
	Coat for 1No				**36347.52**	
				Say Rs.	**36348.00**	

ANNEX - X

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
X	Construction of drains/ Cross drainnge and service core trenches works (2.5 km) with perforated bed for rain water harvesting and gratings to arrest garbage's wherever required includes sub and super structure finishing complete as per approved drawing , specification and direction EIC								
a)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)								
	Cable Duct	1	1	1	1682.65	0.50	0.1	84.133	
							Total	**84.133**	**Cum**
b)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level								
	Cable Duct Slab	1	1	1	1682.65	0.50	0.05	42.066	
							Total	**42.066**	**Cum**
c)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
	Cable Duct wall	1	1	2	1682.65	0.15	0.30	151.439	
							Total	**151.439**	**Cum**
d)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.								
	Cable Duct PCC	1	1	1	1682.65	0.100		168.265	
	Cable Duct wall	1	2	2	1682.65	0.400		2692.240	
	Cable Duct Slab	1	1	1	1682.65	0.300		504.795	
		1	1	2	1682.65	0.075		252.398	
							Total	**3617.698**	**Sqm**

ABSTRACT OF ANNEX-X

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand (Zone III) : 8 graded stone aggregate 40 mm nominal size)	84.13	Cum	9363.75	787795.70	9363.75	787795.70
b)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level	42.07	Cum	14759.7	620885.2301	15965.20	671596.09
c)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	151.44	Cum	12000	1817262.00	11487.20	1739604.34
d)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.	3617.70	Sqm	808.8	2925993.74	808.8	2925993.74
e)	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. A) Thermo-Mechanically Treated bars of grade Fe-500D or more.	5047.950	Kgs	163.45	825087.43	163.45	825087.43
			Total Amount		**6977024.09**		**6950077.29**

ANNEX - XII

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
XII	PCC (1:2:4) for Beatuification work including centering and shuttering								
a)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)								
	Planters	1	1	20	3.50	0.40	0.60	16.800	
		1	1	3	40.00	0.40	0.60	28.800	
		1	1	4	28.00	0.40	0.60	26.880	
	Bollards	1	1	400	0.30	0.30	0.60	21.600	
							Total	**94.08**	**Cum**

ABSTRACT OF ANNEX-XII

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	94.08	Cum	12000	1128960.00	11487.20	1080715.78
			Total Amount		**1128960.00**		**1080715.78**

ANNEX - XIII

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
XIII	Plastering of Beautifactions work and other work wherever required								
a)	12 mm plaster 1:4								
	Heavy vechile parking area	1	1	1	90.40	1.50		135.600	
	Light vechile parking area	1	1	1	82.30	1.50		123.450	
	From parking to culvert	1	1	1	25.50	1.50		38.250	
	Near boat area	1	1	1	83.00	1.50		124.500	
	After Boat area to Nerro area	1	1	1	91.50	1.50		137.250	
	From nerro area to Garrages	1	1	1	93.30	1.50		139.950	
	Front of Garrage to PHD Seawage pump house	1	1	1	61.00	1.50		91.500	
	Front of PHD Seawage pump house	1	1	1	70.30	1.50		105.450	
	From PHD Seawage pump house to Culvert	1	1	1	25.40	1.50		38.100	
	From Culvert to Step area	1	1	1	150.00	1.50		225.000	
	From steps to parking area	1	1	1	18.35	1.50		27.525	
	Parking area	1	1	1	11.80	1.50		17.700	
	From parking to step Down area	1	1	1	180.00	1.50		270.000	
	Sep Down area	1	1	1	12.00	1.50		18.000	
	Sides	1	1	2	6.00	1.50		18.000	
	From step Down area to Parking	1	1	1	53.70	1.50		80.550	
	From Parking area to Culvert no5	1	1	1	29.90	1.50		44.850	
	Theater steps	1	1	1	17.20	1.50		25.800	
	Sides	1	1	2	4.00	1.50		12.000	
	From Culvert no5 to Damage area	1	1	1	60.00	1.50		90.000	
	From Damage area to Culvert no6	1	1	1	79.00	1.50		118.500	
	From Culvert no6 to End point	1	1	1	428.00	1.50		642.000	
	plants area								
	Path way	1	1	1	107.00	1.20		128.40	
	planters area	1	2	16	8.00	0.50		128.00	
							Total	**2780.375**	**Sqm**

ABSTRACT OF ANNEX-XIII

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	12 mm plaster 1:4	2780.38	Sqm	465.3	1293708.49	465.30	1293708.49
			Total Amount		**1293708.49**		1293708.49

ANNEX - XIV

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Height	Qty	Unit
XIV	Demolision of PCC/RCC wherever required as per the direction of EIC								
a)	Demolishing R.C.C./PCC work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.								
	Pathway								
	Heavy and light vechile parking area	1	1	1	160.60	1.50	0.25	60.23	
	From parking to culvert	1	1	1	25.50	1.50	0.25	9.56	
	Near boat area	1	1	1	83.00	1.50	0.25	31.13	
	After Boat area to Nerro area	1	1	1	91.50	1.50	0.25	34.31	
	From nerro area to Garrages	1	1	1	93.30	1.50	0.25	34.99	
	Front of Garrage to PHD Seawage pump house	1	1	1	61.00	1.50	0.25	22.88	
	Front of PHD Seawage pump house	1	1	1	70.30	1.50	0.25	26.36	
	From PHD Seawage pump house to Culvert	1	1	1	25.40	1.50	0.25	9.53	
	From Culvert to Step area	1	1	1	150.00	1.50	0.25	56.25	
	From steps to parking area	1	1	1	18.35	1.50	0.25	6.88	
	Parking area	1	1	1	11.80	1.50	0.25	4.43	
	From parking to step Down area	1	1	1	180.00	1.50	0.25	67.50	
	Sep Down area	1	1	1	12.00	1.50	0.25	4.50	
	From step Down area to Parking	1	1	1	53.70	1.50	0.25	20.14	
	From Parking area to Culvert no5	1	1	1	29.90	1.50	0.25	11.21	
	Theater steps	1	1	1	17.20	1.50	0.25	6.45	
	From Culvert no5 to Damage area	1	1	1	60.00	1.50	0.25	22.50	
	From Damage area to Culvert no6	1	1	1	79.00	1.50	0.25	29.63	
	From Culvert no6 to NK International	1	1	1	428.00	1.50	0.25	160.50	
	From NK International to End Point	1	1	1	217.35	1.50	0.25	81.51	
		1	1	1	312.80	1.50	0.25	117.30	
	RCC Beams								
	Heavy and light vechile parking area	1	1	1	160.60	0.20	0.25	8.03	
	From parking to culvert	1	1	1	25.50	0.20	0.25	1.28	
	Near boat area	1	1	1	83.00	0.20	0.25	4.15	
	After Boat area to Nerro area	1	1	1	91.50	0.20	0.25	4.58	
	From nerro area to Garrages	1	1	1	93.30	0.20	0.25	4.67	

	Front of Garrage to PHD Seawage pump house	1	1	1	61.00	0.20	0.25	3.05	
	Front of PHD Seawage pump house	1	1	1	70.30	0.20	0.25	3.52	
	From PHD Seawage pump house to Culvert	1	1	1	25.40	0.20	0.25	1.27	
	From Culvert to Step area	1	1	1	150.00	0.20	0.25	7.50	
	From steps to parking area	1	1	1	18.35	0.20	0.25	0.92	
	Parking area	1	1	1	11.80	0.20	0.25	0.59	
	From parking to step Down area	1	1	1	180.00	0.20	0.25	9.00	
	Sep Down area	1	1	1	12.00	0.20	0.25	0.60	
	From step Down area to Parking	1	1	1	53.70	0.20	0.25	2.69	
	From Parking area to Culvert no5	1	1	1	29.90	0.20	0.25	1.50	
	Theater steps	1	1	1	17.20	0.20	0.25	0.86	
	From Culvert no5 to Damage area	1	1	1	60.00	0.20	0.25	3.00	
	From Damage area to Culvert no6	1	1	1	79.00	0.20	0.25	3.95	
	From Culvert no6 to NK International	1	1	1	428.00	0.20	0.25	21.40	
	From NK International to End Point	1	1	1	217.35	0.20	0.25	10.87	
	Column	1	1	1	667.00	0.20	0.25	33.35	
							Total	944.51	Cum

ABSTRACT OF ANNEX-XIV

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Demolishing R.C.C./PCC work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.	944.51	Sqm	2700	2550170.25	2840.00	2682401.30
			Total Amount		2550170.25		2682401.30

ANNEX - XV

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

CIVIL WORKS

Item No.	Description of Items	Nos.	Length	Breadth	Height	Qty	Unit
XV	Development of Sunken deck (Similar to existing) in the stretch of Chatham to Anarkali Graveyard via Cholnga Jetty Foreshore Road to Rajiv Gandhi Water Sports Complex including excavation, concrete works with finishing and painting complete.						
a)	Providing and laying in position machine Batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level								
	From parking to step Down area								
	Beam of below parapet wall	1	1	1	180.00	0.30	0.30	16.200	
	Sep Down area								
	Beam of below parapet wall	1	1	1	12.00	0.30	0.30	1.080	
	Perapet wall	1	1	1	12.00	0.15	0.80	1.440	
	Path way side wall	1	1	1	12.00	1.50	0.30	5.400	
		1	1	1	12.00	2.00	0.30	7.200	
							Total	**31.320**	**Cum**
b)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.								
	From parking to step Down area	1	1	2	180.00	0.30		108.00	
	From step Down area to Parking	1	1	2	53.70	0.10		10.74	
							Total	**118.740**	**Sqm**

ABSTRACT OF ANNEX-XV

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
a)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement contentconsidered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level	31.32	Cum	14759.7	462273.804	15965.20	500030.06
b)	Centering and shuttering including strutting, propping etc. and removal of form work for : Retaining walls, return walls, walls (any thickness) including attached pilasters, butteresses, plinth and string courses fillets, kerbs and steps etc.	118.74	Sqm	808.8	96036.91	808.8	96036.91
c)	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. A) Thermo-Mechanically Treated bars of grade Fe-500D or more.	3758.400	Kgs	163.45	614310.48	163.45	614310.48
			Total Amount		1172621.20		1210377.46

ANNEX - XVI

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

ELECTRICAL WORKS

Item No.	Description of Items	Nos.		Length	Breadth	Depth	Qty	Unit
XVI	Supply , Installation , testing and comissioning of Pole & Lights of reqquisite make as per the approved design drawing, specification and direction of EIC							
a)	Supply of 8 Mtr. height decorative Chatsworth pole having cast iron decorative base and pipe dia of 165mm dia & 1 mtr long with cast iron reducer joining with 101mm OD straight pipe. Pole shall be mounted on square base plate. Decorative Cascade bracket with 940mm height mounted on pole. Pole and two brackets at differential height shall be galvanized and painted with PU paint in closed paint chamber with heating treatment in chamber, Make: Surya	1	1	93			93.000	Nos
b)	Supply of Decorative Luminaires for Urban lighting, body made of painted spun aluminum, The protector is made of polycarbonate grade UVresistant (IK 08), Permanently sealed optical compartment with IP66 protection. Luminaire offers tool free access to gear compartment with IP44 protection. Luminaire can be installed as a suspended luminaire. The luminaire is equipped with the LensoFlex2® technology photometric system. PMMA lenses with wide photometry for increased pole spacing. Fixture is having a surge protection of 10KA. Electronic driver is having power factor>0.90*, THD<20*% and input voltage range from 120-227V AC at 50Hz. Luminaire efficacy is 100 im/ watt system lumen greater than 7500 lumens in CCT range of 4000 as per ANSI. System life of 50000 burning hours with 70% of initial lumens maintained. Luminaire is suitable for operating temperature (Ta) from -20 to 50c. Driver can withstand 320V AC for 48 hours and 360V AC for 2 hours. Make: Surya SLE PT 75W VEGA	1	1	93			93.000	Nos

c)	Supply of Decorative Luminaires for Urban lighting, body made of painted spun aluminum, The protector is made of polycarbonate grade UVresistant (IK 08), Permanently sealed optical compartment with IP66 protection. Luminaire offers tool free access to gear compartment with IP44 protection. Luminaire can be installed as a suspended luminaire. The luminaire is equipped with the LensoFlex2® technology photometric system. PMMA lenses with wide photometry for increased pole spacing. Fixture is having a surge protection of 10KA. Electronic driver is having power factor>0.90*, THD<20*% and input voltage range from 120-227V AC at 50Hz. Luminaire efficacy is 100 im/ watt system lumen greater than 7500 lumens in CCT range of 4000 as per ANSI. System life of 50000 burning hours with 70% of initial lumens maintained. Luminaire is suitable for operating temperature (Ta) from -20 to 50c. Driver can withstand 320V AC for 48 hours and 360V AC for 2 hours. Make: Surya SLE PT 40W VEGA	1	1	93				93.000	Nos
d)	Providing and erecting Pipe type earting with 50mm dia GI pipe of 1500mm long. Item includes excavation and refilling necessary charcol, salt and GI strip for connecting earthing and pole.	1	1	93				93.000	Job

ABSTRACT OF ANNEX-XVI

Item No.	Particulars	Quantity			unit	Rate quoted by Contractor		Market Rate	
						Rate	Amount	Rate	Amount
a)	Supply of 8 Mtr. height decorative Chatsworth pole having cast iron decorative base and pipe dia of 165mm dia & 1 mtr long with cast iron reducer joining with 101mm OD straight pipe. Pole shall be mounted on square base plate. Decorative Cascade bracket with 940mm height mounted on pole. Pole and two brackets at differential height shall be galvanized and painted with PU paint in closed paint chamber with heating treatment in chamber, Make: Surya	1	1	93	Nos	65000.00	6045000.00	83879.000	7800747.00
b)	Supply of Decorative Luminaires for Urban lighting, body made of painted spun aluminum, The protector is made of polycarbonate grade UVresistant (IK 08), Permanently sealed optical compartment with IP66 protection. Luminaire offers tool free access to gear compartment with IP44 protection. Luminaire can be installed as a suspended luminaire. The luminaire is equipped with the LensoFlex2® technology photometric system. PMMA lenses with wide photometry for increased pole spacing. Fixture is having a surge protection of 10KA. Electronic driver is having power factor>0.90*, THD<20*% and input voltage range from 120-227V AC at 50Hz. Luminaire efficacy is 100 im/ watt system lumen greater than 7500 lumens in CCT range of 4000 as per ANSI. System life of 50000 burning hours with 70% of initial lumens maintained. Luminaire is suitable for operating temperature (Ta) from -20 to 50c. Driver can withstand 320V AC for 48 hours and 360V AC for 2 hours. Make: Surya SLE PT 75W VEGA	1	1	93	Nos	42000.00	3906000.00	53124.000	4940532.00
c)	Supply of Decorative Luminaires for Urban lighting, body made of painted spun aluminum, The protector is made of polycarbonate grade UVresistant (IK 08), Permanently sealed optical compartment with IP66 protection. Luminaire offers tool free access to gear compartment with IP44 protection. Luminaire can be installed as a suspended luminaire. The luminaire is equipped with the LensoFlex2® technology photometric system. PMMA lenses with wide photometry for increased pole spacing. Fixture is having a surge protection of 10KA. Electronic driver is having power factor>0.90*, THD<20*% and input voltage range from 120-227V AC at 50Hz. Luminaire efficacy is 100 im/ watt system lumen greater than 7500 lumens in CCT range of 4000 as per ANSI. System life of 50000 burning hours with 70% of initial lumens maintained. Luminaire is suitable for operating temperature (Ta) from -20 to 50c. Driver can withstand 320V AC for 48 hours and 360V AC for 2 hours. Make: Surya SLE PT 40W VEGA	1	1	93	Nos	35000.00	3255000.00	48930.000	4550490.00
d)	Providing and erecting Pipe type earting with 50mm dia GI pipe of 1500mm long. Item includes excavation and refilling necessary charcol, salt and GI strip for connecting earthing and pole.	1	1	93	Job	10000.00	930000.00	12205.000	1135065.00
					Total Amount		14136000.00		18426834.00

ANALYSIS OF RATE

Supply , Installation , testing and comissioning of Pole & Lights of reqquisite make as per the approved design drawing, specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 1.00 No				
	(As per actul observation)				
a)	Decorative Pole 8 mtr hight	60000.00	No	1.00	60000.00
	carrage of material and labour charges LS			Total	60000.00
	GST @18% on Rs. **61,200.00**				1200.00
	Contractor profite @15% on Rs.**72,216.00**				11016.00
	Total				10832.40
	Add 1% for Labour Cess				83048.40
	Coat for 1No				830.48
					83878.88
				Say Rs.	**83879.00**

ANALYSIS OF RATE

Supply , Installation , testing and comissioning of Pole & Lights of reqquisite make as per the approved design drawing, specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 1.00 No				
	(As per actul observation)				
b)	Decorative Luminaires 75W	38000.00	No	1.00	38000.00
	carrage of material LS			Total	38000.00
	GST @18% on Rs. **38,760.00**				760.00
	Contractor profite @15% on Rs.**45,736.80**				6976.80
	Total				6860.52
	carrage of material and labour charges LS				52597.32
	Coat for 1No				525.97
					53123.29
				Say Rs.	**53124.00**

ANALYSIS OF RATE

Supply , Installation , testing and comissioning of Pole & Lights of reqquisite make as per the approved design drawing, specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 1.00 No				
	(As per actul observation)				
C)	Decorative Luminaires 40W	35000.00	No	1.00	35000.00
	carrage of material and labour charges LS			Total	35000.00
	GST @18% on Rs. **35,700.00**				700.00
	Contractor profite @15% on Rs.**42,126.00**				6426.00
	Total				6318.90
	Add 1% for Labour Cess				48444.90
	Coat for 1No				484.45
					48929.35
				Say Rs.	**48930.00**

ANALYSIS OF RATE

Supply , Installation , testing and comissioning of Pole & Lights of reqquisite make as per the approved design drawing, specification and direction of EIC

S No	Description of Items	Quantity	Unit	Rate	Amount
	Details of coast for 1.00 No				
	(As per actul observation)				
d)	Providing and erecting Pipe type earting with 50mm dia GI pipe of 1500mm long. Item includes excavation and refilling necessary charcol, salt and GI strip for connecting earthing and pole.				
	Material:				
1	50mm dia. G:I Pipe (Medium class) =1.50+0.23 (Wastage @5%) 1.6	1.60	Mtr	250.00	400.00
	G:I Strip 25x3mm 4.00x5%=4.20	4.20	Mtr	150.00	630.00
	40mm to 20mm reducer	1.00	Each	60.00	60.00
	Funnel	1.00	Each	50.00	50.00
	G:I Nuts and through bolt with washer	1.00	Each	50.00	50.00
	Charcole	15.00	Kg	30.00	450.00
	Salt	5.00	Kg	20.00	100.00
	Common burnt clay F.P.S (non modular) bricks class designation 7.5	30.00	Each	40.00	1200.00
	Cement	0.01	Tonne	9100.00	91.00
	Fine sand	0.03	Cum	5000.00	150.00
	Total cost of materials				**3181.00**
	Cartage @1% of A1				31.81
	Labour				
	Wairman	0.50	day	900.00	450.00
	Khallasi	0.50	day	800.00	400.00
	Mason Grade2	0.20	day	800.00	160.00
	Beldar	1.20	day	700.00	840.00
	Drilling of 46 Nos 12mm dia holes on G:I Pipe	1.00	L.S	400.00	400.00
			Total		8643.81
	Add 1% for water charges				86.44
			Total		8730.25
	carrage of material LS				174.60
			Total		8904.85
	GST @18% on				1602.87
	Contractor profite @15% on				1576.16
			Total		12083.89
	Add 1% for Labour Cess				120.84
			Total		12204.72
	Cost for 1.00no				12204.72
				Say Rs.	**12205.00**

ANNEX - XVII

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

ELECTRICAL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
XVI	Supplying of Down Light 12 W Similar to Philips 31436 Andromed Surface mount light as per direction of Engineer-In-charge								
a)	Supplying of Down Light 12 W similar to Philips 31436 Andromed surface mount light as per direction of Engineer Incharge	1	1	300				300.000	Nos

ABSTRACT OF ANNEX-XVII

Item No.	Particulars	Quantity			unit	Rate quoted by Contractor		Market Rate	
						Rate	Amount	Rate	Amount
a)	Supplying of Down Light 12 W similar to Philips 31436 Andromed surface mount light as per direction of Engineer Incharge	1	1	300.0	Nos	15000.00	4500000.00	22368.000	6710400.00
					Total Amount		**4500000.00**		**6710400.00**

ANALYSIS OF RATE

Supply , Installation , testing and comissioning of Pole & Lights of reqquisite make as per the approved design drawing, specification and direction of EIC

S No	Description of Items				Rate	Unit	Quantity	Amount	
	Details of coast for 1.00 No								
	(As per actul observation)								
a)	Down Light 12 W				16000.00	No	1.00	16000.00	
							Total	16000.00	
	carrage of material and labour charges LS							320.00	
	GST @18% on Rs. **16,320.00**							2937.60	
	Contractor profite @15% on Rs.**19,257.60**							2888.64	
	Total							**22146.24**	
	Add 1% for Labour Cess							221.46	
	Coat for 1No							**22367.70**	
							Say Rs.	**22368.00**	

ANNEX - XVIII

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

ELECTRICAL WORKS

Item No.	Description of Items	Nos.		Length	Breadth	Depth	Qty	Unit
XVI	Supplying Laying of UG cables including development of ducts etc complete as per the approved design drawing specification and direction of EIC							
a)	Providing of XLPE (IS:7098) (I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench/ pipes							
	4 core 16 Sq.mm cable.	1	1	2700			2700.000	Rmt
	4 core 25 Sq.mm cable.	1	1	1700			1700.000	Rmt
	4 core 50 Sq.mm cable.	1	1	80			80.000	Rmt
b)	Supply Laying of DWC pipes of approved make for covering of cable.							
	50 mm OD /38mm ID DWC Pipes	1	1	2500			2500.000	Rmt
	77mm OD /63 mm ID DWC Pipes	1	1	70			70.000	Rmt
c)	Supply of Street light Timer Panel box of size H: 750mm x L: 600mm x D: 300mm of following specification: (a) fabricated from 16 G.M.S. sheet, dust & vermin proof having hinged double door, lock & key with rubber gasket and necessary Items (b) Power 3 Pole 70A. 415/ 220V. Complete contactor - 1 nos. (c) Astronomical Time switch - 1 nos. (d) 4 Pole C 10KA 63A ELCB+MCB- 1 nos. (e) 1 Pole C 10KA 6 to 32A MCB switch - 6 nos. (f) LED R.Y.B. indicator Supply side - 3 nos. (g) 40A 4 way heavy duty connector - 2 nos. (h) 1 Phase energy meter space (i) All internal complete wiring box (All materials make: L&T, BCH, T.C., Siemens, C&S,schnider) Item includes necessary stand and foundation work as directed by Engineer-In-charge	1	1	2				2.000	Nos
	Feederpiller Box	1	1	4				4.000	Nos

ABSTRACT OF ANNEX-XVIII

Item No.	Particulars	Quantity			unit	Rate quoted by Contractor		Market Rate	
						Rate	Amount	Rate	Amount
a)	Providing of XLPE (IS:7098) (I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench/ pipes								
	4 core 16 Sq.mm cable.	1	1	2700	Rmt			602.000	1625400.00
	4 core 25 Sq.mm cable.	1	1	1700	Rmt			757.000	1286900.00
	4 core 50 Sq.mm cable.	1	1	80	Rmt			1361.000	108880.00
b)	Supply Laying of DWC pipes of approved make for covering of cable.								
	50 mm OD /38mm ID DWC Pipes	1	1	2500	Rmt			210.000	525000.00
	77mm OD /63 mm ID DWC Pipes	1	1	70	Rmt			350.000	24500.00
c)	Supply of Street light Timer Panel box of size H: 750mm x L: 600mm x D: 300mm of following specification: (a) fabricated from 16 G.M.S. sheet, dust & vermin proof having hinged double door, lock & key with rubber gasket and necessary Items (b) Power 3 Pole 70A. 415/ 220V. Complete contactor - 1 nos. (c) Astronomical Time switch - 1 nos. (d) 4 Pole C 10KA 63A ELCB+MCB- 1 nos. (e) 1 Pole C 10KA 6 to 32A MCB switch - 6 nos. (f) LED R.Y.B. indicator Supply side - 3 nos. (g) 40A 4 way heavy duty connector - 2 nos. (h) 1 Phase energy meter space (i) All internal complete wiring box (All materials make: L&T, BCH, T.C., Siemens, C&S,schnider) Item includes necessary stand and foundation work as directed by Engineer In-charge	1	1	4	Nos			139799.000	559196.00
d)	LT Main pannel board	1	1	2	Nos			524244.000	1048488.00
		Total Amount					3890000.00		5178364.00

ANALYSIS OF RATE

Supplying Laying of UG cables including development of ducts etc complete as per the approved design drawing specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 10.00 Mtrs				
	(As per actul observation)				
a)	4 core 16 Sq.mm cable.	430.00	Rtm	10.00	4300.00
				Total	4300.00
	carrage of material and labour charges LS				86.00
	GST @18% on Rs. **4,386.00**				789.48
	Contractor profite @15% on Rs.**5175.48**				776.32
	Total				**5951.80**
	Add 1% for Labour Cess				59.52
	Coat for 10.00 Mtr				6011.32
	Coat for 1.00 Mtr				**601.13**
				Say Rs.	**602.00**

ANALYSIS OF RATE

Supplying Laying of UG cables including development of ducts etc complete as per the approved design drawing specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 10.00 Mtrs				
	(As per actul observation)				
a)	4 core 25 Sq.mm cable.	541.00	Rtm	10.00	5410.00
				Total	5410.00
	carrage of material and labour charges LS				108.20
	GST @18% on Rs. **5,518.00**				993.28
	Contractor profite @15% on Rs.**6511.48**				976.72
	Total				**7488.20**
	Add 1% for Labour Cess				74.88
	Coat for 10.00 Mtr				7563.08
	Coat for 1.00 Mtr				**756.31**
				Say Rs.	**757.00**

ANALYSIS OF RATE

Supplying Laying of UG cables including development of ducts etc complete as per the approved design drawing specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 10.00 Mtrs				
	(As per actul observation)				
a)	4 core 50 Sq.mm cable.	973.00	Rtm	10.00	9730.00
				Total	9730.00
	carrage of material and labour charges LS				194.60
	GST @18% on Rs.**9924.60**				1786.43
	Contractor profite @15% on Rs.**11711.03**				1756.65
	Total				**13467.68**
	Add 1% for Labour Cess				134.68
	Coat for 10.00 Mtr				13602.36
	Coat for 1.00 Mtr				**1360.24**
				Say Rs.	**1361.00**

ANALYSIS OF RATE

Supplying Laying of UG cables including development of ducts etc complete as per the approved design drawing specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 10.00 Mtrs				
	(As per actul observation)				
a)	50 mm OD /38mm ID DWC Pipes	150.00	Rtm	10.00	1500.00
				Total	1500.00
	carrage of material and labour charges LS				30.00
	GST @18% on Rs. **1,530.00**				275.40
	Contractor profite @15% on Rs.**1,805.40**				270.81
	Total				**2076.21**
	Add 1% for Labour Cess				20.76
	Coat for 10.00 Mtr				2096.97
	Coat for 1.00 Mtr				**209.70**
				Say Rs.	**210.00**

ANALYSIS OF RATE

Supplying Laying of UG cables including development of ducts etc complete as per the approved design drawing specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 10.00 Mtrs				
	(As per actul observation)				
a)	77mm OD /63 mm ID DWC Pipes	250.00	Rtm	10.00	2500.00
				Total	2500.00
	carrage of material and labour charges LS				50.00
	GST @18% on Rs. **2,550.00**				459.00
	Contractor profite @15% on Rs.**3,009.00**				451.35
	Total				**3460.35**
	Add 1% for Labour Cess				34.60
	Coat for 10.00 Mtr				3494.95
	Coat for 1.00 Mtr				**349.50**
				Say Rs.	**350.00**

ANALYSIS OF RATE

Supplying Laying of UG cables including development of ducts etc complete as per the approved design drawing specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 1.00 No				
	(As per actul observation)				
a)	Street light Timmer panel	100000.00	No	1.00	100000.00
				Total	100000.00
	carrage of material and labour charges LS				2000.00
	GST @18% on Rs. **1,02,000.00**				18360.00
	Contractor profite @15% on Rs.**1,20,360.00**				18054.00
	Total				**138414.00**
	Add 1% for Labour Cess				1384.14
	Coat for 1No				**139798.14**
				Say Rs.	**139799.00**

ANALYSIS OF RATE

Supplying Laying of UG cables including development of ducts etc complete as per the approved design drawing specification and direction of EIC

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 1.00 No				
	(As per actul observation)				
d)	LT Main panel board	375000.00	No	1.00	375000.00
				Total	375000.00
	carrage of material and labour charges LS				7500.00
	GST @18% on Rs. **3,82,500.00**				68850.00
	Contractor profite @15% on Rs.**4,51,350.00**				67702.50
	Total				**519052.50**
	Add 1% for Labour Cess				5190.53
	Coat for 1No				**524243.03**
				Say Rs.	**524244.00**

ANNEX - XIX

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

ELECTRICAL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
XIX	Supply, Installation, testing and commissioning of 03 nos Trailer mounted Mobile caravan toilet (Minimum capacity of 03 user each for male and female) including Electrification, all complete setup as per approved design, drawing, Specification and direction of EIC.								
a)	Supply, Installation, testing and commissioning of 03 nos Trailer mounted Mobile caravan toilet (Minimum capacity of 03 user each for male and female) including Electrification, all complete setup as per approved design, drawing, Specification and direction of EIC.	1	1	3				3.000	Nos

ABSTRACT OF ANNEX-XIX

Item No.	Particulars	Quantity			unit	Rate quoted by Contractor		Market Rate	
						Rate	Amount	Rate	Amount
a)	Supply, Installation, testing and commissioning of 03 nos Trailer mounted Mobile caravan toilet (Minimum capacity of 03 user each for male and female) including Electrification, all complete setup as per approved design, drawing, Specification and direction of EIC.	1	1	3	Nos	4000000.00	12000000.00	4193945.000	12581835.00
					Total Amount		12000000.00		12581835.00

ANALYSIS OF RATE

Supply, Installation, testing and commissioning of 03 nos Trailer mounted Mobile caravan toilet (Minimum capacity of 03 user each for male and female) including Electrification, all complete setup as per approved design, drawing, Specification and direction of EIC.

S No	Description of Items				Rate	Unit	Quantity	Amount	
	Details of coast for 1.00 No								
	(As per actul observation)								
a)	Supply of 6Seater FRP Mobile Toilet Mounted on Four Weel Trailer Chassis				3000000.00	No	1.00	3000000.00	
							Total	3000000.00	
	carrage of material and labour charges LS							210000.00	
	GST @18% on Rs. 30,60,000.00							577800.00	
	Contractor profite @15% on Rs.37,28,800.00							568170.00	
	Total							4355970.00	
	Add 1% for Labour Cess							43559.70	
	Coat for 1No							4399529.70	
							Say Rs.	4193945.00	

ANNEX - XX

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

ELECTRICAL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
XIX	Development of vending Kiosk area 06 no's wherever directed with an area of 400sqm approximately including rain shelter with seating arrangements, surrounding beautification, landscaping complete as per approved design, drawing, Specification and direction of EIC.								
a)	Development of vending Kiosk area 06 no's wherever directed with an area of 400sqm approximately including rain shelter with seating arrangements, surrounding beautification, landscaping complete as per approved design, drawing, Specification and direction of EIC.	1	1	6				6.000	Nos

ABSTRACT OF ANNEX-XX

Item No.	Particulars	Quantity			unit	Rate quoted by Contractor		Market Rate	
						Rate	Amount	Rate	Amount
a)	Development of vending Kiosk area 06 no's wherever directed with an area of 400sqm approximately including rain shelter with seating arrangements, surrounding beautification, landscaping complete as per approved design, drawing, Specification and	1	1	6	Nos	1541666.70	9250000.20	1648357.000	9890142.00
					Total Amount		9250000		9890142.00

ANALYSIS OF RATE

Development of vending Kiosk area 06 no's wherever directed with an area of 400sqm approximately including rain shelter with seating arrangements, surrounding beautification, landscaping complete as per approved design, drawing, Specification and direction of EIC.

S No	Description of Items	Rate	Unit	Quantity	Amount
	Details of coast for 1.00 No				
	(As per actul observation)				
a)	Vending Kiosk 01 no	1124000.00	No	1.00	1124000.00
				Total	1124000.00
	carrage of material and labour charges LS				78680.00
	GST @18% on Rs. 12,02,680.00				216482.40
	Contractor profite @15% on Rs.14,19,162.40				212874.36
	Total				1632036.76
	Add 1% for Labour Cess				16320.37
	Coast for 1No				1648357.13
				Say Rs.	1648357.00

ANNEX - XXI

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

ELECTRICAL WORKS

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
XXI	Development of 06 nos rain shelter with seating arrangements, surrounding beautification, landscaping complete as per approved design, drawing, Specification and direction of EIC.								
1	surface dressing								
	shleter	1	1	1	16	13		208.000	
								208.000	sqm
2	Earh work Excavation for post holes								
	shleter	1	1	8	0.8	0.8	0.9	4.608	
	walls	1	1	1	33.8	0.4	0.6	8.11	
								12.720	Cum
3	PCC 1:4:8 using 40mm HBG metal								
	RCC footing-fl	1	8	1	0.8	0.8	0.1	0.51	
	walls	1	1	1	33.8	0.4	0.1	1.35	
								1.86	cum
	Grand Total							1.86	cum
4	RCC M25 using 20mm metal								
	RCC footing-fl	1	8	1	0.6	0.6	0.8	2.304	
	pedestal	1	8	1	0.3	0.3	0.3	0.216	
	Total							2.52	cum
5	Centering &Shuttering								
a)	RCC footing-fl	1	8	1	2.4		0.8	15.36	
	pedestal	1	8	1	1.2		0.3	2.88	
	Total							18.24	sqm
6	Back Filling								
	EW Qty-pcc qty-rcc footing qty								
	Toilet							8.55	cum
7	solid Block wall in cc 1;3;6 using 20mm metal								
	walls alround	1	1	1	26.8	0.2	0.5	2.68	
	walls alround	1	1	1	30.4	0.2	0.3	1.82	
								4.50	cum
7	Supplying &Fixing of structural steel								
	Base plate plate-200x200x12mm	1	2	10	0.2	0.2	94.2	75.36	
	125mmx65mmx5.3mm channel-2 nos	1	8	2	3.9		13.1	817.44	
	125mm channel around	1	1	1	34		13.1	445.40	
	truss base plate-200x200x12mm	1	8	1	0.2	0.2	94.2	30.14	
	truss bottom-100x100x6mm	1	1	4	7	2	9.1	509.60	

	rafter90x90x6mm	1	2	4	4.45	2	8.2	583.84	
	vertical50x50x6mm	1	1	4	1.15		4.4	20.24	
	vertical50x50x6mm	1	2	4	0.76		4.4	26.75	
	vertical50x50x6mm	1	2	4	0.38		4.4	13.38	
	strut-45x45x6mm	1	2	4	1.63	2	3.5	91.28	
	strut-45x45x6mm	1	2	4	1.21	2	3.5	67.76	
	purlins-ISMC125	1	2	4	11.5		13.1	1205.20	
	BRACING-75X75X6MM	1	1	3	2	7.75	6.8	316.20	
	Tie Runner-75x75x6mm	1	1	5	1	10	6.8	340.00	
	I cleat-90X90X6MMx6mm	1	1	16	0.1		9.1	14.56	
	45X8MM WIND TIE	1	2	4	11.5		2.12	195.04	
	GUTTER-40X6MM	2	7	1	0.5		1.57	10.99	
	gusset plate	1	4	7	0.3	0.2	78.5	131.88	
	tie runner	1	4	5	0.2	0.2	78.5	62.80	
	bracing	1	4	1	0.2	0.2	78.5	12.56	
	bracing	2	4	1	0.2	0.15	78.5	18.84	
								4989.26	Kg
8	Supplying &Fixing of Galvalume sheet .5mm thick								
	Roof longer	1	2	11.50	4.44			102.12	
								102.12	sqm
9	Supplying &Fixing of ridge sheet								
	Roof longer	1	1	11.50				11.50	
								11.50	rmt
10	Supplying &Fixing of plain metalic sheet								
	Gablke side	2	0.5	7.00	1.15			8.05	
								8.05	Sqm
11	Supplying &Fixing of Gutter sheet-500mm wide								
	Gablke side	2	1	11.50	.			23.00	
								23.00	Rmt
12	Exerior wall plaster 15mm tk in cm 1:4								
	Exterior	1	1	1	34	0.3		10.20	
								10.20	sqm
13	PCC 1;4:8,using 40mm metal								
	shelter	1	1	1	9.6	6.6	0.1	6.34	
	Toilet							6.34	cum
14	Filling in basement With Excavted Earth								
	shelter	1	1	.1	9.6	6.6	0.078	4.94	
	Toilet							4.94	cum
15	hard core								
	shelter	1	1	1	9.6	6.6	0.1	6.34	
	Toilet							6.34	cum

16	Antiskid tiles 400x400x7mm laid in cm 1:4,15mm tk								
	shleter	1	1	1	10	7		70.00	
								70.00	sqm
17	Exterior emulsion 2 coats over 1 coat of primer							10.20	sqm
18	Enamel Painting 2 coats over 1 coat primer								
	Base plate plate-200x200x12mm	1	2	10	0.2	0.2	1	0.80	
	125mmx65mmx5.3mm channel-2 nos	1	1	2	3.9		0.51	3.98	
	125mm channel around	1	1	1	34		0.51	17.34	
	truss base plate-200x200x12mm	1	8	1	0.2	0.2	1	0.32	
	truss bottom-100x100x6mm	1	1	4	7	2	0.4	22.40	
	rafter90x90x6mm	1	2	4	4.45	2	0.36	25.63	
	vertical50x50x6mm	1	1	4	1.15		0.2	0.92	
	vertical50x50x6mm	1	2	4	0.76		0.2	1.22	
	vertical50x50x6mm	1	2	4	0.38		0.2	0.61	
	strut-45x45x6mm	1	2	4	1.63	2	0.18	4.69	
	strut-45x45x6mm	1	2	4	1.21	2	0.18	3.48	
	purlins-ISMC125	1	2	4	11.5		0.51	46.92	
	BRACING-75X75X6MM	1	1	3	2	7.75	0.3	13.95	
	Tie Runner-75x75x6mm	1	1	5	1	10	0.3	15.00	
	l cleat-90X90X6MMx6mm	1	1	16	0.1		0.36	0.58	
	45X8MM WIND TIE	1	2	4	11.5		0.106	9.75	
	GUTTER-40X6MM	2	7	1	0.5		0.092	0.64	
	gusset plate	1	4	7	0.3	0.2	2	3.36	
	tie runner	1	4	5	0.2	0.2	2	1.60	
	bracing	1	4	1	0.2	0.2	2	0.32	
	bracing	2	4	1	0.2	0.15	2	0.48	
								174.00	sqm
19	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation,							27.75	sqm
20	False ceiling	1	1	10	7			70.00	Sqm
21	S/F of pvcRain water pipe 110mm dia	1	2	4	3.3			26.40	Rmt

ABSTRACT OF ANNEX-XXI

XXI	Development of 06 nos rain shelter with seating arrangements, surrounding beautification, landscaping complete as per approved design, drawing, Specification and direction of EIC.

Item No.	Particulars	Quantity	unit	Rate quoted by Contractor		Market Rate	
				Rate	Amount	Rate	Amount
1	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	208.00	sqm	50.00	10400.00	16.75	3484
2	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.All kinds of soil	12.72	cum	350.00	4452.00	349.6	4446.912
3	Providing and laying in position cement concrete of 1:4:8 (1 Cement : 4 coarsesand :8 graded stone aggregate ,40 mm nominal size) excluding the cost of centering and shuttering - All work upto plinth level etc., complete.	1.86	CUM	10000.00	18640.00	9363.75	17454.03
4	Providing and laying cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate, 20 mm nominal size) in bands, copings, and the like excluding the cost of centring, shuttering and finishing etc. complete.	2.52	cum	15000.00	37800.00	11487.2	28947.744
5	Centering and shuttering including strutting, propping etc. and removal of form work for :						
	Foundations, footings, bases for columns	18.24	Sqm	600.00	10944.00	381.8	6964.032
6	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	12.72	cum	250.00	3180.00	291.65	3709.788
7	Providing and constructing 200mm thick walls and pillars using precast cement concrete solid blocks of suitable size , in super structure (above plinth level) with precast cement concrete solid blocks confirming to IS :2185 (latest edition) of the following thickness , having a Compressive strength of not less than 50 Kgs/Sq .cm including hoisting to any required height / level and setting in cement mortar 1:6 (1 cement : 6 coarse sand) including necessary scaffolding upto floor five level etc.,, complete solid block.	4.50	cum	16500.00	74316.00	11805.100	53170.1704

8	Supplying &Fixing of structural steel like,channel,angle plate incuding cutting &welding etc complete			4989.26	Kg	172.00	858153.06	238.3	1188941.135
9	Providing and fixing not less than 0.5 mm thick Track deck 1000 mm wide Hi-Rib -100 Galvalume high tensile cold rolled steel roofing sheets of Taurus blue or any other appeoved colour and in required lengths having a yield strength of 550 Mpa as per IS 1397 having Galvalume coating class AZ 150 (minimum 150 gm .per Sq.meter total zinc -aluminium alloy coating on bothsides).The sheets shall be fixed to the purlins with suitable over laps in longitudinal and lateral directions and by providing Self fit fasteners along with EPDM washers and Polysulphide sealant as per manufactures specifications (note- Actual area of			110.17	Sqm	1400.00	154238.00	1339.45	1481.592
10	Providing ridges or hips of width 60 cm overall width plain G.S. sheet fixed with polymer coated J or L hooks, bolts and nuts 8 mm dia G.I. limpet and bitumen washers complete. 0.80 mm thick with zinc coating not less than 275 gm/m²			11.50	Rmt	1500.00	17250.00	1262	1481.592
11	Providing and fixing pre coated galvanised steel sheet roofing accessories			23.00	Rmt	1300.00	29900.00	700	16100
	Gutter (600mm overall girth).								
12	Providing 15 mm cement plaster for any height upto 10m on rough side of single or half brick wall of mix 1:4 (1 cement: 4 coarse sand) etc., complete.			10.20	Sqm	625.00	6375.00	465.3	4746.06
14	Providing and laying in position cement concrete of 1:4:8 (1 Cement : 4 coarsesand :8 graded stone aggregate ,40 mm nominal size) excluding the cost of centering and shuttering -Flooring			6.34	cum	9000.00	57024.00	9363.75	59328.72
15	Cement concrete flooring 1:2:4 finishing with a floating coat ofneatcement inclouding cement slurry								
	40mm thick with 20mm nominal size stone agg			70.00	sqm	400.00	28000.00	764.07	53484.9
16	Providing and laying Antiskid tiles of size 600x600mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sq.m including pointing the joints with white cement and matching pigments etc., complete.			70.00	sqm	2000.00	140000.00	2405.9	168413
17	Exterior emulsion 2 coats over 1 coat of primer			10.20	sqm	230.00	2346.00	175.35	1788.57

18	Synthetic Enamel Enamel Painting 2 coats over 1 coat primer			174.00	sqm	200.00	34799.04	228.05	39679.60536
19	12.5 mm thick fully Perforated Gypsum Board tile made from plasterboard having glass fibre conforming to IS: 2095 part I, of size 595x595 mm, having perforation of 9.7x9.7 mm at 19.4 mm c/c with center borders of 48 mm and the side borders of 30 mm, backed with non woven tissue on the back side, having an NRC (Noise Reduction Coefficient) of 0.79, with 50 mm resin bonded glass wool backing.			70.00	sqm	3000.00	210000.00	1746.45	122251.5
20	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 20 mm nominal size derived from natural sources) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation,			27.75	sqm	1200.00	33300.00	1075.20	29836.8
21	Providing and fixing 110 mm dia pipes unplasticised-Rigid PVC rainwater pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS:5382 for weep holes in VIFT wall etc., complete.			26.40	Rmt	625.00	16500.00	458.05	12092.52
						Total	1747617.10		1817802.67
						Coat for 6 Nos	10485702.62		10906816.02

ANNEX - XXII

Name of Work:- Chatham jetty to Rajiv Gandhi water Sports Complex . Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.

LAND SCAPING

Item No.	Description of Items	Nos.			Length	Breadth	Depth	Qty	Unit
XXII	Development of Plants with Good earth mixed with Manure complete (600 Sqm) wherever required as per design drawing, specification and direction of EIC								
a)	Development of Plants with Good earth mixed with Manure complete (600 Sqm) wherever required as per design drawing, specification and direction of EIC	1	1	1				1.000	Job

ABSTRACT OF ANNEX-XXII

Item No.	Particulars	Quantity			unit	Rate quoted by Contractor		Market Rate	
						Rate	Amount	Rate	Amount
1	Supplying and stacking and good earth inc royalty and carrage upto 10km			149.29	Cum			992.450	148164.85
2	Diggin holes in ordenary soil and refilling the same with tha excaveted earth mixed with manure or sludge								
	Holes 60cm dia and 60cm deep			220	Each			63.250	13915.00
3	Plantation of trees, shurbs and hedge at site inc watering etc								
	Tree palnt			70	Each			9.950	696.50
	Shurbs plants			150	Each			5.000	750.00
4	Provideing and fixing MS flate iron tree guard 60cm dia and 2.00mtr hight			220	Each			5923.150	1303093.00
5	Topairy cutting /shapeing of plant removing of cut material, cleaing hoeing of plants								
	Hight of topairy upto 120cm								
	Cost for month 300x125.75=18,862.5								
	For 1year coast		12	220	Each			125.750	331980.00
6	Synthetic Enamel Enamel Painting 2 coats over 1 coat primer	220	3.8	828.96	Sqm			228.05	712319.03
					Total Amount		2400000.00		2510918.37

AGREEMENT NO: 01 (PBSPL) of 2022-2023

Name of Work :	Marine Esplanade: Marine Road restructing with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping.
Sub Work :	Strengthening and Construction of Sea Wall.
Head of Account:	PBSPL
Tendered Amount: -	₹.16,39,90,000.00
Estimated Cost put to Tender:	₹.14,99,24,878.00
Name of Agency:	M/s. Surendra Infrastructure (P) Ltd.
Time of Completion:	01 (One Year)
Date of Commencement:	17.03.2023
Date of Completion:	16.03.2024

e-TENDER INDEX

Name of Work: - **Marine Esplanade: Marine Road restructing with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping.**

Sub Work: - **Strengthening and Construction of Sea Wall.**

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Certified that this AGREEMENT contains 266 pages serially from 01 to 266.

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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EXECUTIVE ENGINEER-III
(WORKS & SWM)

FORM OF CONTRACT AGREEMENT

This agreement is made at Port Blair on the .....17th.....day of .....MARCH.....2023 between **Port Blair Municipal Council (PBMC)**, represented by its Executive Engineer-III (Works) and having its office at Shadipur, Port Blair, South Andaman, A & N Islands, India-744106 (Hereinafter called "the PBMC") and **M/s. Surendra Infrastructure Private Limited,** 19/1, V.I.P. Road, Junglighat, Port lair, South Andaman, A & N Islands, India - 744103 (Hereinafter called "the Contractor" of the other part).

Whereas the PBMC is desirous that the Contractor execute **Marine Esplanade:** *Marine road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping.* **Sub Work:** *Strengthening and Construction of Sea Wall"* (Hereinafter called "the Projects") and the PBMC has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein (as well as guarantee of such works), at a contract price of **₹.16,99,90,000.00/- (*Rupees Sixteen Crore Ninety Nine Lakhs Ninety Thousand Only/-*)**

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and constructed as part of this Agreement.
2. In consideration of the payments to be made by the PBMC to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the works and remedy any defects therein conformity in all aspects with the provisions of the Contract.
3. The PBMC hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying the defects wherein the Contract price or such additions thereto or deductions therefrom as may be made under the provisions of the Contract at the times and in the manner prescribed by the Contract.
4. The following documents shall be deemed to form and be read and constructed as part of this Agreement viz:
   - i) Invitation for Bid & Instructions to Bidders (including annexures, if any)
   - (ii) Letter of Acceptance
   - iii) Contractor's Bid;
   - iv) Conditions of Contract
   - v) Scope of work and Technical Specifications;
   - vii) Addendums issued, if any and
   - vii) Any other document/item as applicable &forming part of the contract.
5. The contractor shall ensure full compliance with tax laws of India with regard to this contract and shall be solely responsible for the same.
6. The Courts at Port Blair shall have the exclusive jurisdiction to try all disputes arising out of this agreement between the parties.

EXECUTIVE ENGINEER-III
WORKS & SWM
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

IN WITNESS WHEREOF the parties hereto have caused their respective Common Seals to be hereunto affixed / (or have hereunto set their respective hands and seals) the day and year first above written.

For and on behalf of the Contractor	For and on behalf of the PBMC
Signature of the authorized official	Signature of the authorized official
Name of the official	Name of the official
Stamp/Seal of the Contractor	Stamp/Seal of the Employer

SIGNED, SEALED AND DELIVERED

By the said	By the said
_____	_____
Name _____	Name _____
on behalf of the Contractor in the presence of:	on behalf of the PBMC in the presence of:
Witness_____	Witness _____
Name_____	Name _____
Address_____	Address_____
_____	_____

Note:

* Blanks to be filled at the time of finalization of the Form of Agreement.

EXECUTIVE ENGINEER III
(WORKS & SWM)

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

NOTICE INVITING e- TENDER (National Competitive Bidding)

The undersigned, on behalf of the Port Blair Smart Project Limited (PBSPL), Port Blair invites lump sum EPC bids for the work mentioned in table below through e-Procurement from eligible bidders. The bid shall be submitted online in the website https://eprocure.andaman.gov.in. The bidder(s) should have necessary portal enrolment with their own Digital Signature Certificate.

OFFICE OF EXECUTIVE ENGINEER-III (WORKS).
PORT BLAIR MUNICIPAL COUNCIL (PBMC)
SHADIPUR, PORT BLAIR,
Port Blair-744102, Mail.id-swmpbmc@gmail.com

Notice Inviting NIT for " Marine Esplanade : Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping"

[NIT No.: 02/05-02/SE/EE-III/WKS/SWM/MC/22-23/ **Date:06/05/2022]**

1.	Name of the work	**Marine Esplanade : Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping**
2	Mode of Bid Submission	Online through eProcurement S-ystem www.eprocure.andaman.gov.in up to 30th May 2022 17:00hrs. Submission of proposal would be accepted online only. Hardcopy of Tender Purchasing Fee, EMD must be submitted in original to the Executive Engineer-III (Works), Shadipur, Port Blair Municipal Council PBMC, Port Blair– 744102.
3	Estimated Cost of work Put to Tender (Rs.)	Rs. 14,99,24,878(Rupees Fourteen Crore Ninety Nine lakhs Twenty Four Thousand Eight Hundred Seventy Eighty only)
4	Construction Period	12 Months (Twelve)
5	Tender Fee amount (Non refundable)	Rs. 15000 only (Rupees Fifteen Thousand only) inclusive of taxes
6	EMD/Bid Security amount	Rs. 24,99,250 (Rupees Twenty Four Lakhs Ninety Nine Thousand Two Hundred Fifty only)
7	Date / Time of Publication of Tender on e-Proc Website	06/05/2022, 16.00 Hrs
8	Last Date / Time for Bid Submission- Online	30/05/2022, 17.00 Hrs
10	Last Date / Time of Submission of Tender Fee & EMD	30/05/2022,16.30 Hrs (Hard copy)
11	Date of Bid Opening	31/05/2022, 11.00 Hrs
12	Bid Inviting Officer's address	Office of Executive Engineer-III (wks), Shadipur Port Blair Municipal Council (PBMC), Port Blair - 744102, Contact No.03192227247.

Executive Engineer-III (works)
Port Blair Municipal Council.

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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EXECUTIVE ENGINEER-III

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

INVITATION FOR BID (IFB)

NATIONAL COMPETITIVE BIDDING

The undersigned, on behalf of the Port Blair Municipal Council (PBMC), Port Blair invites lump sum EPC bids for the work mentioned in table below through e-Procurement from eligible bidders. The bid shall be submitted online in the website https://eprocure.andaman.gov.in. The bidder(s) should have necessary portal enrolment with their own Digital Signature Certificate.

NIT No:		02/05-02/SE/EE-III/WKS/SWM/MC/22-23.
1.	Name of the work	**Marine Esplanade: Marina road restructuring with uniform carriage way walking track street lighting street furniture service core trenching and landscaping.**
2	Mode of Bid Submission	Online through eProcurement system www.eprocure.andaman.gov.in up to 30th May 2022 17:00hrs. Submission of proposal would be accepted online only. Hardcopy of Tender Purchasing Fee, EMD must be submitted in Original to the Executive Engineer-III (Works), PBMC, Shadipur, Port Blair .Blair – 744102.
3	Estimated Cost of work Put to Tender (Rs.)	**Rs.14,99,24,878.00(Rupees Fourteen Crore Ninety Nine lakhs Twenty Four Thousand Eight Hundred Seventy Eighty only)**
4	Construction Period	**12 (Twelve) Months**
5	Tender Fee amount (Non-refundable)	**Rs.15,000.00** only (Rupees Fifteen Thousand only)
6	EMD/Bid Security Amount	**Rs.24,99,250.00** (Rupees Twenty Four Lakhs Ninety Nine Thousand Two Hundred Fifty only)
7	Date / Time of Publication of Tender on e-Proc Website	06/05/2022, 15.00 Hrs
8	Last Date / Time for Bid Submission-Online	30/05/2022, 17.00 Hrs
9	Last Date / Time of Submission of Tender Fee & EMD	30/05/2022,16.30 Hrs (Hard copy)
10	Date of Bid Opening	31/05/2022, 11.00 Hrs
11	Bid Inviting Officer's address	Office of Executive Engineer-III (Works), Shadipur, Port Blair Municipal Council (PBMC), Port Blair -744106, Contact No.03192-227247.

Eligibility of intending bidders shall be assessed by fulfilling the **"Qualifying Criteria"** as given in **Annexure-I**, **Section-3** of bid document.

1. The intending bidder must read the terms and conditions of Bid document carefully. The bidders should only submit their bid if they consider them self eligible and are in possession of all the required documents.
2. Invitation for bid posted on website shall form part of bid document.
3. Complete bid document can be seen and downloaded from website https://eprocure.andaman.gov.in
4. But the bid can only be submitted after uploading the mandatory scanned documents such as Tender Fee & Earnest Money Deposit (EMD) and other documents as mentioned para 14 below.
5. Those bidders not registered on the website mentioned above, are required to get

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

registered beforehand.

6. Bidders in order to participate in the on line bidding process have to get 'Digital Signature Certificate (DSC)' as per Information Technology Act-2000. This Certificate will be required for digitally signing the bid. Bidders can get the above mentioned digital signature certificate from any vendor approved by Controller of Certifying Authorities (CCA). Bidders, who already possess valid Digital Certificates, need not procure new Digital Certificate. Bidders should submit their bids online in electronic format with digital
   signature. Bids without Digital Signature will not be accepted
7. The Technical bid shall be opened first on due date and time as mentioned above. The time and date for opening of financial bid of bidders qualifying the technical bid shall be informed later on.
8. Bidders are required to upload all Technical Bid documents in the PDF format and the Price bid document only in the format specified in the RFP.
9. The PBMC reserves the right to accept/reject any or all bids without assigning any reason thereof.
10. The bid submitted may be invalid if the bidder doesn't upload all the documents as stipulated above (Techncial Bid and Financial/Price Bid Folders) in separate covers online.
11. **List of Documents to be scanned and uploaded within the period of bid submission:**

A) In the Technical bid folder

I. Demand draft/Online payment as **Tender fee (non-refundable)** from any Nationalized/ Scheduled Bank in favor of "**Secretary, Port Blair Municipal Council**". Original Demand draft against Tender Fee to be submitted in the office of Secretary, Port Blair Municipal Council, Indira Bhavan, Mohanpura, Port Blair-744101, India on or before the bid due date. Copy of the DD to be scanned and uploaded in eprocurement website. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the tender fee. Name, beneficiary details are below: Port Blair Municipal Council, Account no: 916010026296152 IFSC: UTIB0000157.

II. Fixed Deposit Receipt (FDR)/Bank Guarantee/Online Payment from any Nationalized/ Scheduled Bank against **Earnest Money Deposit** (EMD)/Bid security in favor of "**Secretary, Port Blair Municipal Council**". Original Bank Guarantee against EMD is to be submitted in the office of Secretary, Port Blair Municipal Council, Indira Bhavan, Mohanpura, Port Blair-744101, India on or before the bid due date. Format of Bank guarantee is provided in the RFP. Copy of the EMD to be scanned and uploaded in eprocurement website. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the EMD. Name, beneficiary details are below:

In favour of Secretary, Port Blair Municipal Council,

Name of the Bank	:	AXIS BANK
Account No	:	916010026296152
IFSC	:	UTIB0000157

III. Form F1 to F-11of Section-I RFP document along with supporting details, duly filled, signed and stamped by the authorized signatory of the firm.

IV. GST Registration Certificate of the State in which the work is to be taken up, if already obtained by the bidder. If the bidder has not obtained GST registration in the State in which the work is to be taken up, or as required by GST authorities then in such a case the bidder shall scan and upload following undertaking along with

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other bid documents. "If work is awarded to me, I/we shall obtain GST registration Certificate of the State, in which work is to be taken up, within one month from the date of receipt of award letter or before release of any payment by the Employer, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by Employer or GST department in this regard.,

Bid of the bidder, whom original Tender Fee and EMD are not received before scheduled time of submission of bid, their bid will not be opened and evaluted further.

B) In the Financial bid folder (To be submitted online Only)

Financial Proposal" (**to be submitted online in the** format provided in the eprocurement website only) shall comprise inclusive of all statutory and applicable all cess, taxes,duties,levies, royalties etc.

12. The bid submitted shall become invalid if the bidder doesn't upload all the documents as stipulated above (Techncial Bid and Financial Bid Folders) and if any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard/original copy as submitted through registered post or speed post or delivered by hand (before signing of the agreement) by the sucessful bidder in the Office of the **Executive Engineer-III (Works), Shadipur, Port Blair-744106, India.**

13. Each uploading shall be digitally signed by the bidder.

Executive Engineer-III (Works)
For & on behalf of
Port Blair Municipal Council

Section 2 - Instructions to Bidders

A. General

1. Scope of Bid

1.1 Scope of work is provided in Volume I, II & III of RFP document.

1.2 The successful bidder will have to complete the whole works within 12 (Twelve) months from the date of commencement as specified in Letter of Intent. However, bidder need to meet the intermediate milestones as defined in this RFP.

1.3 Throughout these RFP document, the terms 'bid' and 'tender' and their derivatives (bidder/tender, bidding/tendering, etc.) are synonymous.

Throughout these bidding documents, the terms 'Employer', PBMC and 'Authority' are synonymous

Throughout these bidding documents, the terms 'Engineer' and 'Authority Engineer' are synonymous

1.4 Throughout this RFP Document:

(a) the term "in writing" means communicated in written form or by paper mail, fax, facsimile or electronic mail;

(b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and

(c) "day" means calendar day.

1.5 PBMC may appoints/Nominated/designate an Engineer-in-charge who will be looking after projecting related activities.

1.6 Throughout these RFP document, the terms 'PBMC' and their derivatives are synonymous.

2. Source of Funds

2.1 The expenditure on this project will be met from fund allocated to PORT BLAIR MUNICIPAL COUNCIL (PBMC) under Smart City Mission.

3. Eligible Bidders

3.1 This invitation for Bid under National Competitive Bidding open only to eligible competent Bidders with sound technical and financial capabilities and meeting the criteria as given in the Annexure-I of Section 3, Qualification Information.

4. Qualification of the Bidder

4.1 All bidders shall provide the information required as per forms in Section 3, Qualification Information.

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The technical bid of the bidders received online shall be first evaluated to ascertain whether the bidder fulfills the requirements of evaluation criteria as indicated in bid document. The financial bids of only those bidders shall be opened who qualify through the set-out parameters of Evaluation Criteria.

4.2 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have made misleading or false representations in the forms, statements and attachments submitted in the Bid Document.

4.3. In case the financial figure and value of completed works are in foreign currency, the above enhanced factors will not be applied. Instead, actual amount in the foreign currency shall have to be converted into equivalent Indian Rupees (INR) at the State Bank of India BC selling rate as on date 28days prior to the last date of submission, clearly indicating the calculations.

5. **One bid per bidder**

5.1 Each bidder shall submit only one bid for one package. A bidder who submits or participates in more than one Bid (other than as a subcontractor) will cause all the proposals with the Bidder's participation to be disqualified

6. **Cost of Bidding**

6.1 The bidder shall bear all costs associated with the preparation and submission of his Bid, and the PBMC will in no case be responsible and liable for those costs.

7. **Site Visit**

7.1 The Bidder, at the Bidder's own responsibility and risk is advised and encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense. It will be presumed that the bidder has quoted his rates after getting himself acquainted with all the site conditions.

B. Bidding Document

8. **Content of Bidding Documents**

8.1 The set of bidding documents comprises the documents listed below, and addenda issued in accordance with Clause 10. The Request for Proposal (RFP) consists of :

Volume I

Section 1: NIT, Information to Bidder (IFB)

Section 2: Instruction to Bidders (ITB)

Section 3: Qualification Information and Forms

Section 4 : Conditions of Contract

Volume II

Scope of Work and Technical Specification

It may be noted that Drawings provided are only for Reference purpose. Employer or its representative shall not be liable for any loss/liability due to information considered by the Bidder from the drawings/reports etc.

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Online Financial Bid -Price Bid

8.2 The Bidder is expected to examine carefully all instructions, Scope of Work, Technical Specifications, Conditions of Contract, Annexure and Drawings etc. in the Bid Document. Failure to comply with the requirement of Bid Documents shall be at the bidder's own risk. Pursuant to clause 26 hereof, bids which are not substantially responsive to the requirements of the Bid Document shall be rejected.

8.3 The works under this Contract shall be carried out in accordance with the bidding document constituting the contract and shall consist of various salient items as generally described in Volume II of RFP.

9. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting

9.1 A prospective Bidder requiring any clarification of the Bidding Document may notify the PBMC in writing or by paper mail, telex, or electronic mail at the PBMC's address Executive Engineer-III (works) Port Blair Municipal Council, Shadipur, Port Blair-744101, Electronic mail address: swmpbmc@gmail.com as per NIT. PBMC will respond on the website https://eprocure.andaman.gov.in and bidders are advise to visit the web page regularly.

9.2 The Bidder and any of its personnel or agents will be granted permission by the PBMC to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the PBMC and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

9.3 The Bidder is requested, to submit any questions in writing, to reach the EXECUTIVE ENGINEER-III (works) PBMC before time as per Clause 9.1.

10. Amendment of Bidding Document

10.1 At any time prior to the deadline for online submission of bids, the PBMC may amend the Bidding Document by issuing addendum/corrigendum.

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10.2 Any addendum/corrigendum published on https://eprocure.andaman.gov.in website shall be part of the Bidding Document. The bidders have to keep a vigil on the aforesaid website for the same & they shall have no claim whatsoever for any ignorance in such case. If any addendum/Corrigendum is given,this will supersede the corelated/relevant clause of this document.

10.3 To give prospective Bidders reasonable time in which to take an addendum/Corrigendum into account in preparing their bids, the PBMC may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 20.2

C. Preparation of Bids

11. Language of Bid

11.1 The Bid, as well as all correspondence and documents relating to the bid exchanged/uploaded by the Bidder and the PBMC, shall be written in the English language. The documents including but not limited to Qualification certificates etc. shall only be in English and if in any other language shall be translated in English through a Government recognized translator and submitted with bid. The certification of the translator should also be submitted in that case.

12. Documents Comprising the Bid

As mentioned in Para-14 of Invitation for Bid (IFB).

13. Bid Prices

13.1 The contract shall be for the whole works as described in Sub-Clause 1.1 as per the price bid.

13.2 The bidder shall fill in rates both in figure and words. In case of any difference, the rate quoted in words will be taken as the quoted rate.

13.3 All royalties, duties, taxes and other levies shall be included in rates/prices to be deemed included in total Bid Price submitted by the Bidder. The selected Bidder shall furnish their actual liability towards Tax (GST) as applicable during the period of execution of various items as per the approved Govt. notification for consideration during payment. However, in no case, the total cost of payment shall exceed the Lump Sum Contract Value for which the agreement is signed except change in scope, compensation, change of law etc. as mentioned in the conditions of contract. Any change in law shall be paid accordingly as per Conditions of Contract.

13.4 Unless otherwise provided in the RFP, the prices quoted by the Bidder shall be fixed. The rates and prices quoted by the bidder shall be fixed for the entire duration of the Contract and shall not be subject to adjustment on any account and to be completed in a time bound manner.

14. Currencies of Bid and Payment

14.1 The currency(ies) of the bid and payment shall be in Indian Rupees Only.

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15. **Period of Validity of Bids**

15.1 Bids shall remain valid for the period of **180 days** after the bid submission **deadline (last/bid due) date** prescribed by the PBMC. A bid valid for a shorter period shall be rejected by the PBMC as non-responsive.

15.2 In exceptional circumstances, prior to the expiration of the bid validity period, the PBMC may request that the bidder may extend the period of validity for a specified additional period. The request and the bidder' responses shall be made in writing. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with ITB 16 in all respects.

16. Tender Fee & Bid Security

16.1. All the bidder shall submit tender fee in the form of Online payment/ Demand Draft from any Nationalized/ Scheduled Bank against Tender fee for an amount of Rs.25,000/-(Rupees Twenty Five Thousand only) in favour of "Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101". Original Demand draft against Tender Fee to be submitted in the office of Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101, India on or before the bid due (deadline) date and time of submission of bid and upload a scanned copy of the same in e-procurement website. Copy of the DD to be scanned and uploaded in e-procurement website. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the tender fee. Name, beneficiary details are below: PORT BLAIR MUNICIPAL COUNCIL, Account No: - 916010026296152 IFSC: UTIB0000157.

16.2. All bids must be supported by a Bid Security. Bid Security in the form of BG/FDR/Demand Draft for an amount as specified in the NIT from any Nationalized/Scheduled Bank having a branch in Port Blair shall be submitted along with the bid. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the Bid Security. Name, beneficiary details are below: PORT BLAIR MUNICIPAL COUNCIL, Account no: - 916010026296152 IFSC:UTIB0000157.

16.3. Any Bid not accompanied by a responsive Bid Security shall be rejected by the Employer as non-responsive

16.5 The Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing of the Contract and furnishing of the Performance Security as per conditions of Contract

16.6 The Bid Security may be forfeited:

(a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid, or any extension thereto provided by the Bidder; or

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(b) if the successful Bidder fails to:

(i) sign the Contract in accordance with conditions of contract; or

(ii) furnish a Performance Security in accordance with conditions of contract.

(c) If there are arithmetic error in the financial bid, and the contractor doesn't agree to correct the same.

(d) Unable to clarify/support the price and or any clarification requested by Employer in the bid submission.

The Contractor shall be blacklisted in case the Contractor withdraws the bid during the evaluation of bid before award and/ or despite being lowest bidder, fails to sign the contract within the prescribed period, for any reason whatsoever in addition to forfeited of bid security

16.76 The Bid Security of a JV/Consortium shall be in the name of the JV /Consortium that submits the Bid. If the JV/ Consortium has not been legally constituted into a legally enforceable JV/ Consortium at the time of bidding, the Bid Security shall be in the names of all future members as named in the letter of intent

However, the Bid security of a JV/Consortium can also be submitted by the Lead Member of the Joint Venture in his name

17. Format and Signing of Bid

17.1 The Bidder shall submit the requisite documents online as described in Para-14 of Invitation for Bid (IFB).

17.2 Instruction to Bidders to be followed. Bids submitted online should be digitally signed by the bidder.

D. Submission of Bids

18. Submission of Bids

18.1 The Bidder shall submit the Technical Bid and Financial bid online as per the Invitation for Bid (IFB) and Instructions to Bidders (ITB).

19.2 –Deleted--

19. Deadline for Submission of Bids

19.1 Bids will be received by the PBMC through e-procurement website not later than the time and date as mentioned in the RFP and will be opened on the date and time as mentioned in the RFP.

19.2 PBMC may extend the deadline for submission of bids by issuing an amendment in accordance with ITB 10, in which case all rights and obligations of the PBMC and the bidders previously subject to the original deadline will then be subject to the new deadline.

20. Deleted

20.1 ----deleted----

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21. Modification and Withdrawal of Bids

21.1 Bidders may modify/resubmit or withdraw their bids before the deadline prescribed in ITB 20.

21.2 –Deleted---

21.3 –Deleted-.

21.4 Bidders may resubmit & modify his bid any number of times before the deadline of submission of bid.

E. Bid Opening and Evaluation

22. Bid Opening

22.1 Bid opening shall be carried out in two stages. Firstly, 'Technical Bid' of all the bids received online, shall be opened on the date and time, mentioned in the NIT/RFP. 'Financial Bid' of only those bidders whose 'Technical Bid' has been determined to be substantially responsive shall be opened, at later date.

22.2 Opening of Technical Bids

23.2.1 The PBMC will open the "Technical Bid", of all the bidders received pursuant to ITB 22, online. The response of receipt of bid can be seen on the above-mentioned website. In the event of specified date of bid opening being declared as a holiday for the PBMC, the bids will be opened at the appointed time and location on the next working day.

23.2.2 -Deleted--

22.3 Opening of Financial Bids

23.3.1 The PBMC will open the 'Financial bid' of those bidders whose Technical Bid has been determined to be substantially responsive in accordance with Clause 26 hereof, on the date which will be intimated to such bidders. In the event of specified date of bid opening being declared a holiday for PBMC, the 'Financial Bids' shall be opened at the appointed time on the next working day.

23.3.2 -Deleted---

23. Process to be Confidential

23.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced.

23.2 Any attempt by a Bidder to influence the PBMC in the evaluation of the bids or Contract award decisions may result in the rejection of its Bid.

24. Clarification of Bids

24.1 To assist in the scrutiny, evaluation and comparison of bids, PBMC may, at its discretion, ask some or all Bidders for clarifications with regards to their Bid. The request for such clarifications and the response will necessarily be in writing (by speed post/courier / email). Failure of a Bidder to submit additional information or clarification as sought by

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PBMC within the prescribed period will be considered as non-compliance and the Proposal may get evaluated based on the limited information furnished along with the bids.

24.2 Subject to sub-clause 25.1, no Bidder shall contact the PBMC on any matter relating to its bid from the time of the bid opening to the time the contract is awarded.

24.3 Any effort by the Bidder to influence the PBMC in the bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid. Provided that nothing in this section will prevent the PBMC from exploring possibility of arriving at reasonable rates in a manner considered suitable.

25. Deviations, Reservations, and Omissions

25.1 After opening of 'Technical Bid' in accordance with Clause 23.2 above, the PBMC will determine whether each bid (a) has been digitally signed; (b) is complete (c) meets the eligibility and qualification criteria defined in Clauses 3 and 4; (d) is accompanied securities in accordance with Clause 16; and (e) is substantially responsive to the requirements of the 'Bidding Document'. Scoring of technical bids (of responsive bids) will be done in manner stated in clause 29.1

25.2 The technical bid of the bidders shall be first evaluated to ascertain whether the bidder fulfills the requirements of evaluation criteria as indicated in Section 3, Qualification Information of bid document. The financial bids of only those bidders shall be opened who qualify through the set out parameters of Evaluation Criteria.

25.3 After opening of 'Financial Bid' in accordance with Clause 23.3, the PBMC will determine whether each bid (a) has been digitally signed; and (b) is substantially responsive to the requirements of 'Bidding Documents'.

25.4 A substantially responsive Technical or Financial Bid is one which confirms to all the terms, conditions and specifications of the Bidding Document, without material deviation or reservation. A material deviation or reservation is (a) which affects in any substantial way the scope, quality or performance or Works; (b) which limits in any substantial way, inconsistent with the Bidding document, the PBMC's rights or the Bidder's obligations under the contract; and (c) whose rectification would affect unfairly the competitive position of the Bidders presenting substantially responsive Bids.

25.5 If a 'Technical Bid' or 'Financial Bid' is not substantially responsive, the bid will be rejected by the PBMC/Engineer and may not subsequently be made responsive by correction or withdrawal of non-conforming deviation or reservation.

25.6 The 'Financial Bid' of those bidders whose 'Technical Bid' has been determined to be **non-responsive** shall not be opened.

26. Correction of Errors

26.1 'Financial Bids' determined to be substantially responsive will be checked by the PBMC for any arithmetical errors. Errors will be corrected by the PBMC as follows :

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(a) where there is a discrepancy between the rates in figures and in word, the rate in words will govern; and

(b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern

26.2 The amount stated in the Bid will be adjusted by the PBMC in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected, and the Bid security may be forfeited in accordance with Sub – Clause 16.

27. Evaluation and Comparison of Bids

27.1 The PBMC will evaluate and compare only the Bids determined to be substantially **responsive** in accordance with Clause 26.

27.2 The PBMC reserves the right to accept or reject any variation, deviation or alternative offer. Variations, deviations, and alternative offers and other factors which are in excess of the requirements of the bidding document or otherwise result in unsolicited benefits for the Contractor shall not be taken into account in Bid evaluation.

27.3 If the bid of a successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the PBMC may request the bidder to produce detailed price analyses for any or all items of the Bill of Quantities/considered in arriving the price bid, to demonstrate the internal consistency of those prices (taking into account prevailing market rates) with the construction methods and schedule proposed. After evaluation of the price analyses, the PBMC determines that the bidder has substantially failed to demonstrate its capability to deliver the contract at the offered price, PBMC may reject the bid/ proposal.

27.4 If the bid of the lowest Bidder contains some/any of the major BOQ items/Head which are unrealistically priced low/high and which cannot be substantiated satisfactorily by the bidder, PBMC reserves the right to ask for clarifications, additional data, negotiate with the lowest bidder to correct the unrealistic priced BOQ/Item in BOQ/head without changing the overall quoted bid price. If the Bidder does not accept the realistic price of such BOQ/Head, the Bid will be rejected, and the Bid security may be forfeited in accordance with Sub – Clause 16. PBMC decision in this regard will be final and binding on the bidder.

27.5 However, if the bid price quoted by the bidder is lower than 10% the estimated contract value, the Bidder shall provide Performance security for the difference of amount greater than 10% difference from the estimated contract value with the quoted price for the entire duration of the contract including the O&M period, provided the bidder satisfies the client with all clarification as asked by the client as per above clauses.

27.6 The Bidder shall be blacklisted in case the Bidder withdraws the bid during the evaluation of bid before award and/ or despite being lowest

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bidder, fails to sign the contract within the prescribed period, for any reason whatsoever

F. Award of Contract

28. Award Criteria

28.1 Financial Bids of Technically qualified bidders shall be opened who meet the qualification as called in clause 3 and 4 of ITB. PBMC will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the Bidding document and who has offered the lowest evaluated and acceptable Bid Price, provided that such Bidder has been determined to be (a) eligible in accordance with the provisions of Clause 3, and (b) qualified in accordance with the provisions of Clause 4

29. PBMC's Right to Accept/Reject any or all Bids

29.1 Notwithstanding Clause 29, the PBMC reserves the right to accept or reject any Bid/all Bids, and to cancel the Bidding process at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the PBMC's action.

30. Notification of Award and Signing of Agreement

30.1 The Bidder whose Bid has been accepted will be notified of the award by the PBMC prior to expiration of the Bid validity period by registered letter or telex facsimile or electronic mail. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance/award") will state the sum that the PBMC will pay the contractor in consideration of the execution, completion, and maintenance of the Works by the contractor as prescribed by the contract (hereinafter and in the Contract called the "Contract Price/Contract Value").

30.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 32.

30.3 The successful bidder within 10 days of issue of Letter of Acceptance shall submit power of Attorney(s) and Board Resolution. In case of any change than submitted along with Bid submittals for signing of Contract Agreement.

30.4 After receipt of documents as per 31.3 and confirmation of issuance of performance security by the issuing bank, the PBMC will direct the successful bidder to attend PBMC's office on a date determined by PBMC for signing the Contract Agreement. Stamp duty amount for execution of Contract to be paid by the successful bidder.

30.5 Deleted.

30.6 The contractor shall appoint a proof check consultant (the "proof consultant ") to approve the design/drawing/reports prepared by the contractor before carrying out any construction activities. Proof consultant would be any Government engineering college/NIT/IIT. For the avoidance of doubt, the Parties agree that no firm or person having any conflict of interest shall be engaged hereunder. Contractor needs to bear the expenses for the proof checking and same need to be incorporated in its price bid. Contractor also responsible for coordination with the proof consultant for timely approval of design/drawing /reports required for the execution of work.

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31. **Performance Guarantee**

31.1 Within 21 days of issue of the Letter of Acceptance, the successful Bidder shall deliver to the PBMC a Performance Guarantee (Security) in the form of a bank guarantee as per the format given in the Condition of contract or a Fixed Deposit Receipt in the name of "Secretary, PORT BLAIR MUNICIPAL COUNCIL, Port Blair" for an amount equivalent to 3% of the Contract price. Amount of Performance Security has been kept as 3 % of the Contract price in line with Government of India Office Memorandum No. F.9/4/2020-PPD dated 12th November'2020.

31.2 The performance guarantee (security) provided by the successful Bidder shall be issued by a Nationalized/Scheduled Indian Bank approved by Reserve Bank of India.

31.3 Failure of the successful Bidder to comply with the requirements of Sub-Clause 32.1 shall constitute sufficient grounds for Blacklisting of the bidder.

32. **Advance Payment and Security**

32.1 As per conditions of contract clauses 6& 7 respectively.

33. **Corrupt or Fraudulent Practices**

33.1 The PBMC will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with PBMC

33.2 If, at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contractor, or in execution.

i) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and

ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive PBMC of the benefits of free and open competition.

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Annexure -1- Section-3

QUALIFYING CRITERIA

The evaluation of Technical Bid will be based on Bidders meeting all the following minimum pass/fail criteria regarding their particular experience, financial position, personnel and equipment capabilities and other relevant information.

1 Qualifying Criteria/ Experience

1.1 General

(i) This Bid is a National competitive bid and open to bidders who are registered according to the provisions of the Companies' Act 1956 or the Limited Liability Partnership Act 2008 or the Partnership Act 1932 or any other appropriate law engaged applicable for construction work or any amendments thereof. **However, it may be noted that any "bidder from a country which shares a land boundary with India" will be eligible to bid in this RFP only if the bidder is registered with the "competent authority".**

Definition of "Bidder from a country which shares a land boundary with India" and "Competent authority" would be in accordance with the Office Memorandum number F.No. 6/18/2019-PPD dated 23rd July 2020 issued by Ministry of Finance, Department of Expenditure, Public Procurement division, Government of India. A copy of Office Memorandum is attached for bidder's reference.

(ii) The bidder should possess required valid license for executing the sanitary engineering works. This may be demonstrated through valid registration (any class) with Government/Semi Government departments etc.

1.2 Particular Construction Experience

The Bidder shall provide documentary evidence that it has successfully/satisfactorily completed works during the last 7 years ending previous day of last date of submission of tenders:

At least **one work of similar nature** costing at least **80% of the estimated cost by sole bidder.**

OR

Two works of similar nature costing at least **60% of** the estimated cost of work put to tender **by sole bidder/ One by the Sole bidder.**

OR

Three works of similar nature costing at least **40% of** the Estimated Cost of work put to tender **by sole bidder/ One by the sole bidder.**

'cost of work' shall mean gross value of the completed work including the cost of materials supplied by the Employer /Client but excluding those supplied free of cost. Works should have been carried out for Central/State Governments, Public Sector Enterprises, and any other Government undertaking only.

Similar work means: Design, Construction of Marine drives. The works shall include components such as sea wall of minimum length of 400 meters, walkways, beautification, landscape, street scape.

Note:

1. Partially completed project irrespective of their percentage of completion will not be accepted. However projects which involve Construction/development phase is completed and project under operation, then such project shall be considered subjected fulfilment of other conditions as mentioned.

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2. The Bidder should submit completion certificate Issued by the Client duly signed by Authorized Signatory not below the rank of Executive Engineer or equivalent clearly indicating the nature / scope of work done, actual completion cost and actual date of completion. It may be noted that, Experience of work carrying with Government Organisation/Multilateral Funding agencies shall only be considered.

In case the similar work, as described above, is only a part of a composite/bigger project, the certificate from Employer should also indicate the cost of similar work out of the total project cost of composite/bigger project.

In case the financial figure and value of completed works are in foreign currency, the above enhanced factors will not be applied. Instead, actual amount in the foreign currency shall have to be converted into equivalent Indian Rupees (INR) at the State Bank of India BC selling rate as on the date two weeks prior to the last date of submission, clearly indicating the calculations.

1.3 Turnover

The bidder must have achieved a minimum average annual financial turnover equal to 50% of estimated cost put to tender during last five completed financial years (from 2016-17 to 2020-21).

The turnover of previous FY shall be updated/indexed to FY 2020-21 by enhancing the same at a simple rate of 7% per annum.

1.4 Financial capability

1.4.1 Availability of Cash Credit Facility

The bidder shall demonstrate by submitting along with its bid Evidence of access to line (s) of credit and availability of other financial resources facilities in terms of cash credit of minimum value of INR 6.25 cr certified by the approved Bankers (not more than 12 months old).

1.4.1 Solvency Certificate

The bidder shall demonstrate by submitting along with its bid a Solvency Certificate minimum value of INR 3.75 cr certified by the approved Bankers (not more than 12 months old).

1.4.2 Net Worth

The bidder should have positive net worth and should not have incurred any loss (Profit after Tax) in more than three years during available last seven consecutive balance sheets i.e. (FY 2014-15 to 2020-21 duly certified and audited by the Chartered Accountant.

1.4.3 Bidding Capacity

The Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity is more than the available bid capacity. The bid capacity shall be computed according to the formula provided below and as per following and it shall need
to be more than amount put to tender:

Assessed available bid capacity = A * N * 3 - B,

Whereas, A = Maximum value of civil engineering works in respect of Projects executed in any one year during the last seven years (2014-15 to 2020-21)

N = Stipulated Execution period of the Contract as per the tender notice

B = Value of existing commitments and ongoing works to be completed during the next
2.0 years

Note: The statements showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be countersigned by the Engineer in charge, not below the rank of an Executive Engineer or equivalent or by the bidders Charted Accountant or Statutory Auditor.

1.5 Personnel capabilities

The Bidder shall supply general information on the management structure of the firm and

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(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

shall make provision for suitably qualified personnel to fill the key positions/support staff/office staff as required during contract period for timely implementation of works.
The bidder needs to submit the site organization along with the Technical bid.

1.6 Equipment capabilities

The Bidder is required to own or have assured access through hire or lease to the key items of equipment required during contract period for timely implementation of works.
The bidder needs to submit the list of equipment's as envisaged by him along with the Technical bid.

1.7 Disqualification

Even though the Bidder meets the above criteria, he is subject to be disqualified if Bidder has:
- made misleading or false representation in the forms, statements and attachments submitted; or
- any criminal proceedings are pending/ ongoing in any court of law regarding any project executed by the Bidder.
- has been debarred/blacklisted by any Government/Semi Government Organization/funding agencies/PSU at any time till last date for submission of bid, ,except in cases where such blacklisting/ banning has been withdrawn by Competent Authority or reasons other than non-performance, such as rescinding of joint venture due to most experienced partner of joint venture pulling out or debarment/blacklisting has ceased on the deadline for submission of the bids, for which satisfactory evidence is to be produced.
- The bidder or any of its constituents has suffered bankruptcy/insolvency or it is in the process of winding-up or there is a case of insolvency pending before any Court on the deadline of submission of bids or thereafter till finalization of bids.
- records of poor performance such as abandoning the work, rescinding of contract for which the reasons are attributable to the non-performance of the Bidder, inordinate delays in completion, consistent history of litigation / arbitration awarded against the Bidder or any of its constituents or financial failure due to bankruptcy, etc.
- any near relative posted in PBMC in any capacity (any breach of this condition by the bidder would render him liable to be debarred for taking up works in PBMC).
The near relatives include wife, husband, partners, grand-parents, children, grandchildren, brothers, sisters, uncles, aunts, cousins, and their corresponding in-laws.
- Bidder is associated, directly or indirectly, with the Consultant or any other entity that has prepared the tender design, specifications and other documents for the Project or being proposed as Project Manager/Engineer for the Contract/Work
- Is under a declaration of ineligibility for corrupt or fraudulent practice.

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PORT BLAIR

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Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

Surendra Infrastructure (P) Ltd.
19/1, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, Ph : 233517, FAX: 03192 – 231781
Email – sursale@yahoo.com

009/PB/2099

30th May' 2022

Executive Engineer-III (wks)
Shadipur,
Port Blair

SUB : TECHNICAL BID

REF : 02/05-02/SE/EE-III/WKS/SWM/ : "Marina road restructuring with uniform carriage way walking track street lighting street furniture service core trenching and landscaping"

Tender ID No. 2022_PMBC_5883_1

Bid Submission End Date : 30th May' 2022

Dear Sir,

We hereby submit the following documents as required to meet the eligible criteria for participate of above Tender.

1. Tender fees in form of D.D. No. 010289 dtd 23rd May' 2022 for Rs. 15,000/- (Rupees fifteen Thousand only) issued by Canara Bank, Port Blair Branch, favouring Secretary PBMC, payable at Office of Executive Engineer-III (WKS) Shadipur

2. EMD in form of FDR No. 140048157781/1 (KK0831294) dtd 27th May' 2022 for Rs 24,99,250/- (Twenty Four Lakhs Ninety Nine Thousand Two Hundred Fifty only)) issued by Canara Bank, Port Blair Branch, favouring Secretary PBMC, payable at Office of Executive Engineer-III (WKS) Shadipur

3.

Form F1	:	Bid Covering Letter
Form F2	:	Undertaking from Bidder regarding GoI Office Memorandum dated 23rd July'2020
Form F3	:	No Deviation Certificate
Form F4	:	Total Responsibility Certificate
Form F5	:	Anti-Collusion Certificate
Form F6	:	Power of Attorney
Form F9	:	Annual Financial Data
Form F10	:	Litigation/Arbitration History
Form F11	:	Information Regarding Current Litigation, Debarring / Expelling of Bidder or Abandonment of Work

Contd.....2/-

9, EZRA STREET, CALCUTTA 700001, INDIA. Ph: 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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19/1, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, ☎ : 233517, FAX: 03192 – 231781
Email – sursale@yahoo.com

Other Documents :

1. Annual Turnover Certificate issued by Chartered Accountant
2. Solvency Certificate issued by Canara Bank, Port Blair limit upto INR 3.75 cr
3. Working Capital Certificate issued by Canara Bank, Port Blair limit upto INR 6.25 cr
4. Net worth certificate from certified chartered accountant
5. Residual Capacity
6. Personnel capabilities
7. Equipment capabilities
8. MSME Certificate
9. Similar Work Completed

Acceptance Letter No.:
FNo. 05-03/SE/EE-III/Wks/SWM/MC/2020-21/03 dtd 03.07.2020 issued by EE-III(Wks) PBSPL
Performance Certificate:
F No. 05-03/SE/EE-III/W/SWM/MC/2020-21/10 dtd 06.05.2022

We trust the above will meet with your requirements. Should you require any other clarification, please let us know for our compliance.

Yours Faithfully,

SURENDRA INFRASTRUCTURE PVT LTD.

Surendra Infrastructure Pvt. Ltd

Director/ Authorised Signatory

Encl : As above (55 Sheets)

9, EZRA STREET, CALCUTTA 700001, INDIA. ☎: 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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Surendra Infrastructure (P) Ltd.
19/1, VIP ROAD, JUNGLIGHAT, PORT BLAIR-744103 (A&N) Ph: 9[illegible] FAX: 9[illegible]
Email : sursales@yahoo.com

FORM F-1

Bid Covering Letter

Date: 27th May'2022

Dear Sir,

With reference to your Request for Proposal of "*Marina road restructuring with uniform carriage way walking track street lighting street furniture service core trenching and landscaping*" ,we **Surendra Infrastructure Pvt Ltd., 19/1, VIP Road Junglighat, South Andaman Port Blair – 744103 A& N Islands** hereby submit our Bid for the same We hereby declare that:

a) We hereby acknowledge and unconditionally accept that the PBSPL can at its absolute discretion apply whatever criteria it deems appropriate, not just limiting to those criteria set out in the RFP and related documents, in short listing of Agency for providing services.

b) We have submitted Bid Security in the form of FDR

c) We hereby declare that all information and details furnished by us in the Bid are true and correct, and all documents accompanying such application are true copies of their respective originals.

d) We agree to abide by our offer for a period of 180 days from the date bid due date or any further extension of date mutually acceptable and that we shall remain bound by a communication of acceptance within that time.

e) We have carefully read and understood the terms and conditions of the RFP and the conditions of the contract applicable to the RFP. We do hereby undertake to provision as per these terms and conditions.

f) In the event of acceptance of our bid, we do hereby undertake:

i. To supply the material and commence services as stipulated in the RFP document

ii. To undertake the project services for entire contract period as mentioned in the RFP document.

iii We affirm that the prices quoted are inclusive of all plant, labour, supervision, materials, equipment, transport, all temporary works, erection, maintenance, taxes and duties, Cess, Royalties, contractor's profit and establishment/overheads, together with preparation of design and drawings, third party proofchecking, all general risks, insurance liabilities, compliance of labour laws and obligations set out or implied in the contract.

Contd...2/-

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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19/1, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, Ph : 233517, FAX: 01192 - 231781
Email – surasle@yahoo.com

a) We do hereby undertake, that, until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and notification of award of contract, shall constitute a bindingcontract between us.

b) We understand that the PBSPL may cancel the bidding process at any time and that PBSPL is not bound to accept any bid that it may receive without incurring any liability towards the bidder.

c) We fully understand and agree to comply that on verification, if any of the information provided in our bid is found to be misleading the selection process, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so

In case of any clarifications please contact email at sursales8@gmail.com & sursalepb@gmail.com

Thanking you, Yours

sincerely,

Surendra Kumar Prahladka

Director
Surendra Infrastructure Pvt. Ltd

Director/ Authorised Signatory

Date : 27th May'2022

Place: Port Blair

Business Address:

Surendra Infrastructure Pvt ltd.
19/1, VIP Road, Junglighat Post
South Andaman Port Blair – 744103
A&N Islands

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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Surendra Infrastructure (P) Ltd.
19/1, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103. ☎ : 233517, FAX: 03192 – 231781
Email – sursale@yahoo.com

FORM F-2

Undertaking from Bidder regarding GoI Office Memorandum dated 23rd July'2020

We hereby confirm that, we have read the Office Memorandum number F.No. 6/18/2019-PPDdated 23rd July 2020 issued by Ministry of Finance, Department of Expenditure, Public Procurement division, Government of India and the clause regarding restrictions on procurement from a bidder of a country which shares a land boundary with India, we hereby certify that this bidder is not from such country or, if from such a country, has been registered with competent authority .We hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered.

Surendra Kumar Prahladka

Director

Date : 27th May'2022

Place: Port Blair

Business Address:

Surendra Infrastructure Pvt ltd.

19/1, VIP Road, Junglighat Post

South Andaman Port Blair – 744103

A&N Islands

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

9, EZRA STREET, CALCUTTA 700001, INDIA. ☎: 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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Surendra Infrastructure (P) Ltd.
19/1, V.I.P. ROAD, JUNGLIGHAT, PORTBLAIR-744 103. ☎ :233517, FAX: 03192 – 231781
Email – sursale@yahoo.com

F-3: No Deviation Certificate

This is to certify that our offer is exactly in line with your tender enquiry/RFP (including amendments) no. 02/05-02/SE/EE-III/WKS/SWM/MC/22-23 dated 06th May' 2022. This is to expressly certify that our offer contains no deviation either Technical (including but not limited to Scope of Work, Work Requirements, Specifications, Functional Requirements) or Commercial in either direct or indirect form.

Surendra Kumar Prahladka
Director

Date : 27th May'2022

Place: Port Blair

Business Address:
Surendra Infrastructure Pvt ltd.
19/1, VIP Road, Junglighat Post
South Andaman Port Blair – 744103
A&N Islands

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Surendra Infrastructure Pvt. Ltd. PORT BLAIR

Surendra Infrastructure (P) Ltd.
19/1, V I P ROAD, JUNGLIGHAT, PORTBLAIR-744 103, ☎ : 233517, FAX: 03192 – 231781
Email – sursale@yahoo.com

FORM F-4

Total Responsibility Certificate

This is to certify that we undertake the total responsibility for the defect of the work as per the requirement of the RFP for the duration mentioned in the RFP.

Surendra Kumar Prahladka
Director

Date : 27th May'2022

Place: Port Blair

Business Address:
Surendra Infrastructure Pvt ltd.
19/1, VIP Road, Junglighat Post
South Andaman Port Blair – 744103
A&N Islands

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Surendra Infrastructure Pvt. Ltd. PORT BLAIR

Surendra Infrastructure (P) Ltd.
19/1, V.I.P. ROAD, JUNGLIGHAT, PORTBLAIR-744 103. ☎ 233517, FAX: 03192 - 231781
Email – sursale@yahoo.com

FORM F-5

Anti-Collusion Certificate

We hereby certify and confirm that in the preparation and submission of our Bid for Request for Proposal for "***Marina road restructuring with uniform carriage way walking track street lighting street furniture service core trenching and landscaping***" for Port Blair Smart Projects Ltd. We have not acted in concert or in collusion with any other Bidder or other person(s)and also not done any act, deed or thing, which is or could be regarded as anti-competitive. We further confirm that we have not offered nor will offer any illegal gratification in cash or kind to anyperson or organization in connection with the instant bid.

Signature

Surendra Kumar Prahladka

Director

Date : 27th May'2022

Place: Port Blair

Business Address:

Surendra Infrastructure Pvt ltd.

19/1, VIP Road, Junglighat Post

South Andaman Port Blair – 744103

A&N Islands

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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LZRA STREET, CALCUTTA 700001, INDIA. ☎ 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com



अंडमान और निकोबार (केंद्रशासित प्रदेश)
ANDAMAN & NICOBAR(U.T.)

137213

POWER OF ATTTORNEY

KNOW ALL MEN BY THESE PRESENTS,

We **Surendra Infrastructure Pvt Ltd. 19/1 VIP Road Junglighat, South Andaman Port Blair – 744103 A&N Islands** do hereby irrevocably constitute, nominate, appoint and authorize **Mr Kunal Prahladka** son **Shri Surendra Kumar Prahladka** and presently residing at **19/1 VIP Road Junglighat, South Andaman Port Blair – 744103 A&N Islands** , who is presently employed with us and holding the position of **Director** , as our true and lawful attorney *(hereinafter referred to as the "Attorney")* to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our application for qualification and submission of our bid for the work namely, **"Marina road restructuring with uniform carriage way walking track street lighting street furniture service core trenching and landscaping"** Proposed by the Port Blair Smart Projects Ltd (PBSPL) (the "Employer") including but not limited to signing and submission of all applications, bids and other documents and writings, participate in pre-bid meeting and other conferences and providing information/ responses to the employer, representing us in all matters before the employer, signing and execution of all contracts including the Agreement and undertakings consequent to acceptance of our bid, and generally dealing with the employer in all matters in connection with or relating to or arising out of our bid for the said Project and/ or upon award thereof to us and/or till the entering into of the Agreement with the employer.

Notary Serial No. 229
Date 24/05/22



EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Contd.....2/-



:02:

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done byour said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, **SURENDRA INFRASTRUCTURE PVT LTD.,** THE ABOVE-NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF 27th May 2022.

Surendra Kumar Prahladka
Managing Director
Surendra Infrastructure Pvt Ltd.
19/1 VIP Road, Junglighat PO
South Andaman, Port Blair- 744103

Witnesses:

1. SHRAWAN MEHRA
   LAMBA LINE, PORT BLAIR
2. SWEETY JOSEPH
   SHADIPUR

Execution has admitted the execution of contents of the document after the contents were read over and explained in Hindi /English according to authenticate the document and affix the seal of my Office on this 28 May.

Advocate
NOTARY PUBLIC
A&N Administration, Port Blair

NOTARY PUBLIC
SIVA BALAN ADVOCATE
Date 28/5/22

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

DWIVEDI GUPTA & CO.
Chartered Accountants

Kolkata Office: 637 Dakshindari Road,
Brijdham Housing Complex,
Kolkata -700048,
Ph: +91 9903818998
Email:akanshapoddar@ymail.com

FORM - 9

TO WHOM IT MAY CONCERN

According to the Books of Accounts produced before us and the explanations given to us and based on our checking, certify that the Gross Annual Turnover on Construction works for the following period of M/S Surendra Infrastructure Pvt. Ltd. of 9 Ezra Street, 2nd Floor, Kolkata-700001 are in agreement therewith.

Financial Year	Annual Turnover
2015-2016	44,39,84,358.44
2016-2017	57,33,24,900.24
2017-2018	67,46,19,959.06
2018-2019	70,70,27,350.91
2019-2020	73,95,71,195.00
2020-2021	54,28,52,143.00

Place : KOLKATA

Date: 30/11/2021

DWIVEDI GUPTA & CO.
(CHARTERED ACCOUNTANTS)
Akansha Poddar
CA AKANSHA PODDAR
PARTNER
M. NO- 312349
[illegible] No.-[illegible]

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

DWIVEDI GUPTA & CO.
Chartered Accountants

Kolkata Office: 637 Dakshindari Road,
Brijdham Housing Complex,
Kolkata -700048,
Ph: +91 9903818998
Email:akanshapoddar@ymail.com

CERTIFICATE

This is to confirm that M/s Surendra Infrastructure Pvt Ltd., Head office at 9, Ezra Street, 2nd Floor Kolkata – 700 001 did not suffer any losses for the F.Y. 2016-17, 2017-18, 2018-19, 2019-20 & 2020-21

DWIVEDI GUPTA & CO.
(CHARTERED ACCOUNTANTS)
Akansha Poddar
CA AKANSHA PODDAR
PARTNER
M. NO- 312349
Firm Reg. No. 001258[illegible]

Place : Kolkata

Dated : 30/11/2021

UDIN : 22312349AAAAAJ2444

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

DWIVEDI GUPTA & CO.
Chartered Accountants

Kolkata Office: 637 Dakshindari Road,
Brijdham Housing Complex,
Kolkata -700048,
Ph: +91 9903818998
Email:akanshapoddar@ymail.com

TO WHOM IT MAY CONCERN

This is to certify that M/s Surendra Infrastructure Pvt Ltd having its registered office at 9, Ezra Street, 2nd Floor Kolkata – 700 001 has a net worth of Rs 22,88,46,097.00 (Twenty Two Crore Eighty Eight Lakh Forty Six Thousand Ninety Seven Only) as on 31.03.2021 on the basis of the following calculation.

Paid – up Equity Capital	10,66,47,000.00
Add – Reserves & Surplus	12,21,99,097.00
Less : Accumulated Losses / P& L Dr. balance	-
Less : Miscellaneous Expenditure	
Total Net worth	22,88,46,097.00

It is further to certify that the computation of net worth is based on our scrutiny of the books of accounts, records and documents, is true and correct to the best of our knowledge and as per information provided to our satisfaction.

Place : Kolkata

Dated : 30/11/2021

DWIVEDI GUPTA & CO.
(CHARTERED ACCOUNTANTS)
Akansha Poddar
CA AKANSHA PODDAR
PARTNER
M. NO- 312349
Firm Reg. No.-0012584C

UDIN : 22312349AAAAAJ1585

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Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

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Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

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(WORKS & SWM)
Municipal Council

Surendra Infrastructure (P) Ltd.

19/1, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103. ☽ : 233517, FAX: 03192 – 231781

Email – sursale@yahoo.com

FORM F-10

LIGITATION/ARBITRATION HISTORY

Name of Bidder : M/s. Surendra Infrastructure Pvt Ltd.

Year	Award for or against Bidder	Name of Project	Name of client, causeof litigation/ Arbitration and matterin dispute	Disputed Amount (current value	Actual Awarded Amount
12th April'2019	M/s. Surendra Infrastructure Pvt Ltd	C/o. 42 Nos. Type-II Qtr (T/S) at Junglighat including Development of Site and Scooter Parking **Agt.No.36/2008-09/EE/PBND**	Andaman PWD, Port Blair		Rs 1,18,00,000/-
15th Oct'2018	M/s. Surendra Infrastructure Pvt Ltd	C/o. Transit Accommodation of for 22 families near Chinmaya Mission, VIP Road, Port Blair. **Agmt.No.300/A/EE/PBSD/2006-07**	Andaman PWD, Port Blair		Rs 1,02,00,000/-
24th Jan'2019	M/s. Surendra Infrastructure Pvt Ltd	C/o. Proposed new Building for GDMS (Sec & Sr.Sec) at TGCE Campus at Middle Point, Port Blair **Agmt.No.90/EE/PBND/2006-07**	Andaman PWD, Port Blair		Rs 1,02,00,000/-
08th May'2017	M/s. Surendra Infrastructure Pvt Ltd	C/o. Passenger hall behind Berth No.2 Haddo Wharf in Port Blair. **Agmt.No.EE(DD)/AGT-07/2019-20**	EE(Dry Dock) ALHW, Port Blair		Rs 78,00,000/-
16th Aug'2018	M/s. Surendra Infrastructure Pvt Ltd	Execution of Civil, Electrical & Development work for Development of Station at Diglipur (A&N Islands) **LOI No.ECIL/CND/LT/7618 dtd 08th April'2008 Work Order No.5/8501**	Electronic Corpn of India Ltd, Hyderabad		Rs. 2,64,00,000/-

9, EZRA STREET, CALCUTTA 700001, INDIA ☽ 225 3385/3382, FAX: 91-033-225 3152

Email: sursales8@gmail.com

Surendra Infrastructure (P) Ltd.
19 T. V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103.) 233517, FAX: 03192 – 231781
Email – sursale@yahoo.com

FORM F-11

INFORMATION REGARDING CURRENT LITIGATION, DEBARRING / EXPELLING OF BIDDER OR ABANDONMENT OF WORK BYBIDDER

1 (a) Does the Bidder has consistent history of litigation/ arbitration awarded against him. — Yes

(b) If yes, give details (Copy Enclosed)

2 (a) Has the Bidder been debarred/blacklisted by any Govt. Department/Public Sector Undertaking in India as on the date of application, except on account of reasons other than non-performance, such as rescinding of joint venture due to most experienced partner of joint venture pulling out, court directions leading to breaking up of a joint venture before start of work. — No

(b) If yes, give details

3 (a) Has the Bidder abandoned any contract work in India — No

(a) If yes, give details

4 (a) Has the Bidder has suffered bankruptcy/insolvency or in the process of winding-up or there is a case of in solvency pending before any Court

(b) If yes, give details, including present status — No

5. (a) Has the Bidder been debarred by Government/Semi Government Organization as on the date of application for bidding — No

(b) If yes, give details

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

9, EZRA STREET, CALCUTTA 700001, INDIA) 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

Canara Bank
(A Government of India Undertaking)
Head Office: Bengaluru

Ref : CB:1185:SIPL-FS/2021-22

Date: 03.08.2021

TO WHOMSOEVER IT MAY CONCERN

Regarding Financial Soundness of our Client M/s Surendra Infrastructure Private Limited, we have intimate as follows:

Sanctioned Limit	**₹ in Lacs**
BG Limit	2200.00
OCC	50.00
Term Loan	500.00
Working Capital as per ABS FY 2019-20	2000.00

Beside the above, the p urties Financial Operational performance is highly satisfactory.

This certificate is issued without any Guarantee or responsibility on the Bank or any of the officers.

Yours Faithfully
Canara Bank

Manager

CANARA BANK
01 AUG 2021

Port Blair Branch, Krishna House, Near Clock Tower, Aberdeen Bazaar, Port Blair
Andaman and Nicobar Islands; PIN: 744101,
Phone No. 03192-233188, 245824, 232953, E-mail: cb1185@canarabank.com

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

केनरा बैंक Canara Bank

(A Government of India Undertaking)
(Head Office: Bangalore 560 002)

Ref:CB:1185:Sol-Cert:02-2022-23 Date: 22:04:2022

SOLVENCY CERTIFICATE

This is to certify that to the best of our knowledge and information that M/s. Surendra Infrastructure Pvt. Ltd. Having marginally noted address at 9, Ezra Street, 2nd Floor, Kolkata 700 001 and Branch Office at 19/1 VIP Road, Junglighat, Port Blair - 744 103 A&N Islands, a Customer of our bank is respectable and can be treated as good for any engagement upto a limit of Rs. 9,17,00,000/- (Rupees Nine Crore Seventeen Lakh only).

This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

Chief Manager

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

पोर्टब्लेयर शाखा, कृष्णा हाउस, क्लॉक टॉवर के पास, एबरदीन बाज़ार, पोर्टब्लेयर
Port Blair Branch, Krishna House, Near Clock Tower, Aberdeen Bazaar, Port Blair,
अंडमान व निकोबार द्वीप समूह / Andaman and Nicobar Islands; पिन/PIN: 744101,
दूरभाष सं/Phone No. 03192-233188, 245824, 232953, ईमेल/E-mail: cb1185@canarabank.com

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

Surendra Infrastructure Private Ltd.
H.O.:9,Ezra Street,Kolkata 700 001, INDIA.✆: 2225 3382 / 85, FAX : 033-2225 3152, E-mail : sursales8@gmail.com

Residual Bid Capacity

$$R = 3 \times A \times N - B$$

$$= 3 \times 73.95 \times 1 - 46.46$$

$$= 221.85 - 45.78$$

$$= 176.07$$

Residual Bid Capacity = 176.07 Crores

R = Residual Bid Capacity
A=Maximum Turnover achieved in any one financial year during last 7 years
N=Period of Completion
B=Value of Balance works in hand

Surendra Infrastructure Pvt. Ltd. Port Blair

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Private Ltd

HQ : 9, Ezra Street, 2nd Floor, Kolkata - 700 001

Kolkata - Port Blair - Pune - Siliguri - Vizag

Existing Commitments and Ongoing Works

Sl. No.	Name of work/CA/Agreement No.	Name of Party	Agreement Amt	Dt. Of Comm.	Date of Completion	Executing Authority	Balance Work (Cr.)
1	Up-gradation of Rural Road for Package No. AN0101 comprising of 05 Nos. rural roads of Road Code No. AN01PB01, AN01PB02, AN01FE02, AN01FE04, AN01FE07 for PMGSY-II at Port Blair and Ferrargunj Block under South Andaman Devision-I **CA: 2-47(1)/EE/PRI/SAD-1/PMGSY-II/2021-22/185**	Executive Engineer Panchayati Raj Institution South Andaman Division I Port Blair	51875677.00	14.03.2022	13.12.2022	Executive Engineer Panchayati Raj Institution South Andaman Division I Port Blair	4.92
2	Supply & laying of (a) 33 KV uG electrical cable & (b) 400 mm dia DI water Pileline from 14+200 to Km 16+700 on NH-223 (New NH-4), affected due to widening / upgradation of NH-223 (New NH-04) from Km 12.00 to Km 45.00 (Package I) in the Union Territory of Andaman and Nicobar Islands. **NHIDCL/RO/A&N/12.00 TO 45.00/N-20/2020/652** **DT: 05.02.2022**	National Highways & Infrastructure Development Port Blair	34977257.00	15.02.2022	14.07.2022	National Highways & Infrastructure Development Port Blair	2.30
3	45 MLD Water supply project of KINFRA at KEPIP Kakkanad, Ernakulam, SH: Supplying and laying of DI pumping main from intake well at Thottumugham to Thorappu Jn. - Package - II KIN/V/45MLD/WS PII/480/2021-22/3588 dt: 30.12.2021	Kerala Induatrial Infrastructure Development Corporation Trivandrum	191766535.00	07.01.2022	06.01.2024	Kerala Induatrial Infrastructure Development Corporation Trivandrum	13.42
4	45 MLD Water supply project of KINFRA at KEPIP Kakkanad, Ernakulam, SH: Supplying and laying of DI pumping main from Thorappu Jn. To KEPIP, Kakkanad - Package - III KIN/V/45MLD/WS PII/480/2021-22/3589 dt: 30.12.2021	Kerala Induatrial Infrastructure Development Corporation Trivandrum	231672860.00	07.01.2022	06.01.2024	Kerala Induatrial Infrastructure Development Corporation Trivandrum	16.21
5	Enhancement of captive power supply at AF Car Nicobar CA No: CE A&N Z/PB/01 of 2020-2021	Chief Engineer , A&N Zone Brichgunj Port Blair	104852425.00	01.05.2020	12.07.2022	Garrison Engineer (I) 866 Engr. Wks Sec C/o 99 APO	7.33
6	IMPROVEMENT AND EXTENSION OF ROAD- (A) STARTING FROM SHRI UB SINGH HOUSE TO SHRI DILIP HOUSE AT DOCTOR'S COLONY, GARACHARMA, WARD NO.24. (B) STARTING FROM RANGER OFFICE JUNCTION BATHU BASTHI TO GEETA GENERAL STORE, WARD NO. 24. IMPROVEMENT AND RESURFACING OF ROAD, (C) STARTING FROM SHIV TEMPLE TO RAJU HOUSE AT GARACHARMA WARD NO. 24. (D) STARTING FROM MAIN ROAD TO SARHU DEVNATH HOUSE IN ROOP NARAYAN COLONY, GARACHARMA WARD NO. 24 AGGT No. 18(R) OF 2019-2020	Port Blair Municipal Corporation	10315541.00	11.03.2019	31.03.2022	Executive Engineer -III (wks) Municipal Council Port Blair	0.25

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Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Sl. No.	Name of work/CA/Agreement No.	Name of Party	Agreement Amt	Dt. Of Comm.	Date of Completion	Executing Authority	Balance Work (Cr.)
7	Improvement / Construction of new road and side drain a) Ambersan house to Pandy house at Garacharma Ward No.18, b) b) starting from Smti. Manga laxmi House to Smti B.Siva Laxmi house near water tank attam Oahad Ward No. 18, c) Starting from Shri Raju House to Sunder House at Garacharma Ward no. 18, d) Starting from Main Road to Taramani Kerketta at Birsa Nagar, Attom Pahad Ward No. 18, e) Starting from Main Road to the end of the Christan Gravey yard at Garacharma Ward No. 18, f) Starting from Shivmandir to Panchavarn House at Garacharma Ward No. 18, g) NStarting from Chinna Shop to SeemaHouse at Garacharma Ward No. 18 AGGT No. 19(R) OF 2018-2019	Port Blair Municipal Corporation	22802804.20	11.03.2019	31.03.2022	Executive Engineer -III (wks) Municipal Council Port Blair	0.50
8	Improvement and Resurfacing or construction of Road, Drain, Culvert a) Starting from main road to Loknath Colony via Shri. Mohd. Ayub via Satish house to Andaman Blessing Chruch Ward No. 17, b) New Road along with side drain and Culvert from main road to karan trading at Dollygunj Ward No. 17, c) Starting from Shiv Colony junction to mansarovar colony, Dlooygunj Ward No. 17, d) Starting from Shiv temple to old basthi to Satrogan house, Dollygunj Ward No. 17, e) Starting from Raja Gopal House to Swaroop Kishan House at Dollygunj Ward No. 17, f) Starting from satrugan House to Rao House at Shiv Colony, Ward No. 17 AGGT No. 2(R) OF 2018-19	Port Blair Municipal Corporation	21774913.50	11.03.2019	31.03.2022	Executive Engineer -III (wks) Municipal Council Port Blair	0.50
9	RE-SURFACING OF ROAD AND RENOVATION OF DRAIN WITH COVERING SLAB FROM MAIN ROAD CO-OPERATIVE BANK TO SREYA BHAVAN AND PBMC STEEL WATER TANK TO HADDO JUNCTION IN LILLYPUR WARD NO-01, RESURFACING OF ROAD FROM HF SHIPPING TO KOLAPURI TEMPLE AND INDUS GLOBAL ACADEMY TO RAM CO-SHIP REPAIRING IN HADDO WARD NO-01 AGREEMENT NO: 11(R) OF 2019-20	Port Blair Municipal Corporation	14743042.00	24.06.2019	31.03.2022	Executive Engineer -III (wks) Municipal Council Port Blair	0.35
						TOTAL	45.78

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER (WORKS & SWM) Municipal Council

Surendra Infrastructure Pvt. Ltd. Port Blair

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

Surendra Infrastructure (P) Ltd.
19/1, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, Ph : 233517, FAX: 03192 – 231781
Email – sursale@yahoo.com

Details of Technical & Administrative Personnel

Sl	Name	Qualification	Experience	Designation
1	Mr. Kunal Prahladka	B.E. (Civil)	17 yrs	Director
2	Mr. Dayamay Mukherjee	B.E. (Civil)	25 yrs	Engineer
3	Mr. Subhanil Saha	B.E. (Civil)	07 yrs	Engineer
4	Mr. R Dharmalingam	B.E. (Civil)	09 yrs	Engineer
5	Mr. Rahul Kumar	B.E. (Civil)	07 yrs	Engineer
6	Mr. Nitai Mondal	DE (Civil)	18 yrs	Engineer
7	Mr. Sujit Das	DE (Civil)	11 yrs	Engineer
8	Mr. Arijit Biswas	DE (Civil)	15 yrs	Engineer
9	Mr. Anandkar Banda Bansi	DE (Civil)	13 yrs	Engineer
10	Mr. Pijush Kanti Naskar	BE (Electrical)	07 yrs	Engineer

Surendra Infrastructure Pvt. Ltd.

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

9, EZRA STREET, CALCUTTA 700001, INDIA. Ph: 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

Scanned with Oken Scanner

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ

VISVESWARAIAH TECHNOLOGICAL UNIVERSITY, BELGAUM
KARNATAKA, INDIA

Certifies that

KUNAL PRAHLADKA

ಬ್ಯಾಚಲರ್ ಆಫ್ ಇಂಜಿನಿಯರಿಂಗ್

ಪದವಿಗೆ ಅಗತ್ಯವಾದ ಅರ್ಹತೆಗಳನ್ನು ಳ್ಳವನೆಂದು ಪರಿಗಣಿತವಾಗಿರುವ ಕಾರಣ
ಮೇಲೆ ಕಾಣಿಸಿದ ಪದವಿಗೆ ಅವರನ್ನು ಅಂಗೀಕರಿಸಲಾಗಿದೆ.

has been duly admitted to the Degree of

Bachelor of Engineering

in recognition of the fulfilment of requirements

for the said degree

ಪರೀಕ್ಷಾ ಕ್ರಮ ಸಂಖ್ಯೆ
University Seat Number : *1RV00CV011*

ವಿಷಯ
Subject : *Civil Engineering*

ಶ್ರೇಣಿ
Class : *First Class*

D 029074
04

ವಿಶ್ವವಿದ್ಯಾಲಯದ ಮುದ್ರೆಯೊಂದಿಗೆ ಕೊಡಲ್ಪಟ್ಟಿದೆ
Given under the seal of the University

ATTESTED BY ME

DILIP KUMAR BASU
Notary, Govt. of West Bengal
E.M M.'s Court, Regd. No.-13, 1994
3 & 3, Bankshall Street, Calcutta-1

24 MAY 2005

ಬೆಳಗಾವಿ
Belgaum

ದಿನಾಂಕ
Date : FEB 17, 2005

ಕುಲಪತಿ
VICE CHANCELLOR

Shrendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Regional Engineering College

DURGAPUR

(W. BENGAL)

This is to certify that Sri/~~Smt~~ Dayamay Mukherjee

(Roll No 92/58) son/daughter of ~~Sri~~ Late Banshi Bhadan Mukherjee

Passed the ~~BACHELOR~~ OF ENGINEERING DEGREE EXAMINATION in the Discipline of

Civil Engineering of the University of Burdwan in June 1996

securing First Class.

To the best of my knowledge he/she bears a good moral character.

Dated, Durgapur

the 20 AUG 1996 199

OFFICE OF THE PRINCIPAL * REGIONAL ENGINEERING COLLEGE * DURGAPUR-713209

PRINCIPAL
Regional Engineering College
Durgapur

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

-51-

27001310053

140126906

WEST BENGAL UNIVERSITY OF TECHNOLOGY

Certified that

SUBHANIL SAHA

bearing Regn.No. : 102700110224 of 2010-2011

having fulfilled all the requirements has been admitted to the Degree of

Bachelor of Technology

IN

Civil Engineering

of this University and that the degree was conferred on him/she with all the Rights and Privileges thereto. In witness whereof the Signatures of the Vice-Chancellor and Controller of Examination of West Bengal University of Technology are hereunto affixed.

DGPA: 7.71
(Degree Grade Point Average)

Year: 2014

Indranil Mukherjee
Controller of Examinations (Actg.)

Ranjan Bhattacharya
Vice-Chancellor

Dated: 20th February 2015

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

(15)

Anna University



Reg No. 912081013902RG

The Syndicate of the Anna University hereby makes known that DHARMALINGAM R has been admitted to the DEGREE OF BACHELOR OF ENGINEERING in CIVIL ENGINEERING under the Faculty of Civil Engineering, having completed the prescribed programme of study and having been certified by the duly appointed examiners to be qualified to receive the same, and has been placed in FIRST CLASS at the Examination held in APRIL 2012.

Given under the Seal of the University

ATTESTED BY A...

...TASMEEN ...
...
NOTARY ...

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

CABLE "MOYDANAB" CAL-19 ESTD 1930 (ST/RG. No 0503/2003)

Calcutta Engineering College

Calcutta

(KALIKATA SHILPA BIDYAPITH)
GOVERNED BY
DAKSHIN KOLKATA ENGINEERING EDUCATION SOCIETY
GOVT. OF WEST BENGAL
ACT, 1961

PROVISIONAL CERTIFICATE

No. CEC/P-16/0503/2003

DATE 22ND NOV. 2003

This is to certify that Sri / Smt NITAI MANDAL

son / daughter of LATE PANCHKARI MANDAL

has passed the Three / Two year Diploma Course of CIVIL ENGINEERING in JUNE 2003

in FIRST Division

His / Her conduct during the period of his / her training here was GOOD and to the best of my knowledge he / she bears GOOD MORAL character.

N.B. - The Diploma will be awarded within three months.

OBEDIENT AND HARD WORKING.

SIGNATURE OF THE STUDENT

Nitai Mandal

PRINCIPAL
Principal
Calcutta Engineering College
Kolkata

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Serial No. [illegible]

West Bengal State Council of Technical Education

Diploma

This is to certify that SUJIT DAS

of HOOGHLY INSTITUTE OF TECHNOLOGY passed the

Diploma Examination in CIVIL ENGINEERING

held by the West Bengal State Council of Technical Education in the year

November 2010 and was placed in the 1st Class

Vice-Chairman
West Bengal State Council of Technical Education

Secretary
West Bengal State Council of Technical Education

Dated, Kolkata the [illegible]

Surendra Infrastructure Pvt. Ltd.

-56-

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Serial No. 1-14620605

West Bengal State Council of Technical Education

Diploma

This is to certify that ARIJIT BISWAS

of HOOGHLY INSTITUTE OF TECHNOLOGY passed the

Diploma Examination in CIVIL ENGINEERING

held by the West Bengal State Council of Technical Education in the year

January, 2006 and was placed in the 1st Class

Vice-Chairman
West Bengal State Council of Technical Education

Secretary
West Bengal State Council of Technical Education

Dated Kolkata the 17th July, 2006

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

-57-

0166888

Maharashtra State Board of Technical Education

Anandkar Banda Bansi

the withinsigned having successfully completed the prescribed course of studies and having passed the final examination with First class, has been awarded the

Diploma In Civil Engineering

on behalf of the Government of Maharashtra on the 11th day of the month of July in the year 2008. In testimony whereof is set the seal and signature of the Director, Maharashtra State Board of Technical Education.

DIRECTOR

633 /CE 3 A.S 0408/ 782940 /05343348/010818125

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

1701610071

140119092

WEST BENGAL UNIVERSITY OF TECHNOLOGY

Certified that

PIJUSH KANTI NASKAR

bearing Regn.No. : 101710110197 of 2010-2011

having fulfilled all the requirements has been admitted to the Degree of

Bachelor of Technology

IN

Electrical Engineering

of this University and that the degree was conferred on him/her with all the Rights and Privileges thereto. In witness whereof the Signatures of the Vice-Chancellor and Controller of Examinations of West Bengal University of Technology are hereunto affixed.

DGPA: 7.82
(Degree Grade Point Average)

Year: 2014

Indranil Mukherjee
Controller of Examinations (Actg.)

Ranjan Bhattacharya
Vice-Chancellor

Dated: 20th February 2015

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Suranjana Infrastructure Pvt. Ltd.
PORT BLAIR

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

सत्यमेव जयते

INDIA NON JUDICIAL

Andaman and Nicobar Administration

e-Stamp

Certificate No.	:	IN-AN01296456358380U
Certificate Issued Date	:	23-Apr-2022 02:49 PM
Account Reference	:	SELFPRINT (PU)/ an-self/ PORT BLAIR/ AN-SOA
Unique Doc. Reference	:	SUBIN-ANAN-SELF01314058444296U
Purchased by	:	surendra infrastructure pvt ltd
Description of Document	:	Article Others
Property Description	:	AFFIDAVIT
Consideration Price (Rs.)	:	20 (Twenty only)
First Party	:	SURENDRA INFRASTRUCTURE PVT LTD
Second Party	:	AFFIDAVIT
Stamp Duty Paid By	:	SURENDRA INFRASTRUCTURE PVT LTD
Stamp Duty Amount(Rs.)	:	20 (Twenty only)

Notary Serial No. 383
Date 23/04/2022

NOTARY PUBLIC NOTARIAL NOTARIAL Date 23/4/22 D. SIVABALAN, ADVOCATE

SELF PRINTED CERTIFICATE
TO BE VERIFIED BY THE RECIPIENT

.....Please write or type below this line.....

PLANT & MACHINERY

Surendra Infrastruture Pvt. Ltd.

Director / Authorised Signatory

Contd.....2/P

Statutory Alert

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

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PLANT & MACHINERY

Sl No.	Name of the Equipment	Name of Manufacturer	Model	Qty.	Present Condition	Location
1	**Earth Moving Equipments**					
	Excavator	Hitachi	EX 120	1 No.	Working	
		Hyundai	R 215		Working	
		L&T	PC 71	1No	Working	
		Hitachi	EX 90	1 No.	Working	
		Hitachi	EX 140		Working	
		Hitachi	EX 70	1 No.	Working	
		Tata Hitachi	EX 100	1 No.	Working	
	Loader Backhoe	JCB Escorts	3D	1 No.	Working	
		JCB	3DX	1 No.	Working	
		ACE	ACE 130	2 Nos.	Working	
		Telcon	JD 315	1 No.	Working	
		Telcon	JDU with Rammer	1 No.	Working	
	Dozers	Komatsu	D 50	2 Nos.	Working	
	Rock Breakers	Wyno		2 Nos.	Working	
		Telcon		1 No.	Working	
		Hyundai		1 No.	Working	
2	**Compaction Equipments**					
	Vibratory Earth Rammers	Usha / Primax	4 Tons	9 Nos.	Working	
	Plate Compactors	Primax	8 Tons	1 No.	Working	
3	**Concreting Equipments**					
	Batching Plant	Universal	RM 1400	1 No.	Working	
		Universal	RM 1050	2 Nos.	Working	
		Schwing Stetter	CP 30	1 No.	Working	
	Transit Mixer	Greaves	6 Cum	1 No.	Working	
		Schwing Stetter	6 Cum	1 No.	Working	
	Concrete Mixers	Usha / Jaypee / Primax	10/7 Cum	15 Nos.	Working	
	Weigh Batcher	Usha/ Ashoka Engg.		2 Nos.	Working	
	Concrete Pump	Greaves – BP350D	46 M³/hr	2 Nos.	Working	
		Sany –	48	1 Nos.	Working	

Contd...3/P

Surendra Infrastruture Pvt. Ltd.

Director / Authorised Signatory

NOTARY PUBLIC * D. SIVABALAN, ADVOCATE * Date 23/4/24

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

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		40C1410D	M³/hr			
	Hydraulic Hollow Block Machine	Commercial		2 No.	Working	
	Needle type Vibrators Petrol/ Diesel/ Electric	Usha / Villiers / Primax		41 Nos.	Working	
	Beam Vibrator	Usha / Primax		4 Nos.	Working	
	Hydrolic Cube Testing Machine	Usha / Primax		4 Nos.	Working	
	Form work – Material	Dynamic/ Others			Working	
	Scaffolding pipe			15000 Sqmt	Working	
	Steel Props			20000 Sqmt	Working	
	Cuplock	Scaffolding		2500 Sqmt	Working	
	Slab Vibrator	Usha / Primax		4 Nos.	Working	
	Shutter Vibrator	Usha / Primax		7 Nos.	Working	
	Base plate			1500 Nos.	Working	
	Clips			3500 Nos.	Working	
	Coupler			25000 Nos.	Working	
	Span			12500 Nos.	Working	
	Soldiers			800 Nos.	Working	
	Wall Forms			1200 Nos.	Working	
	Floor Forms			600 Nos.	Working	
	Short Creting Machine	Ashok		1 No.	Working	
4	**Crushing & Screening Equipments**					
	Stone Crusher	Surja Engg.		1 No	Working	
	Crushers – Automix Store Crusher	Surja Engg.		2 Nos.	Working	
	Vibrating Screens	Surja Engg.		2 Nos.	Working	
	Rotary Screens	Surja Engg.		2 Nos.	Working	
	Feeders to Crushers	Surja Engg.		3 Nos.	Working	
	Conveyor Belt System for crushed Aggregates Belt Conveyor Assembly	Surja Engg.		3 Nos.	Working	
5	**Road Equipments**					
	Hot Mix Plant	Primax		1 No	Working	
	Road Rollers	Britania		4 Nos.	Working	
6	**Hauling Equipments**					
	Trucks	Tata	10 Tons	3 Nos.	Working	

Contd...2/-

Surendra Infrastruture Pvt. Ltd.

Director / Authorised Signatory

NOTARY PUBLIC * SOUTH ANDAMAN * Date 23/4/22

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

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	Hyva Tipper	Tata	25 Tons	1 No.	Working	
		Leyland	25 Tons	1 No.	Working	
	Tippers	Tata	8 Cum	9 Nos.	Working	
	Mini Dumper	Universal		1 No.	Working	
	Builders Hoist / Tower Crane	Primax / Universal		4 Nos.	Working	
	Tata Ace	Tata		1 no.	Working	
7	**Welding Equipments**					
	Welding Transformers			3 Nos.	Working	
	Welding Generators			1 No.	Working	
	Gas Cutting Set			2 Nos.	Working	
	Welding Machine			5 Nos.	Working	
8	**Cutting and Bending Machine**					
	Bending Machine	Jaypee		1 No.	Working	
	Cutting Machine	Dewalt/Hitachi / Macmet		15 Nos.	Working	
	Grinders			4 Nos.	Working	
	Stone Cutting Machines			2 Nos.	Working	
	Automatic Drill Machine			2 Nos.	Working	
	Jack Hammer			1 No.	Working	
	Aluminum Cutting Machine			1 No.	Working	
	Aluminum Bending Machine			1 No.	Working	
	Rotary Hammer			1 No.	Working	
	Demolition Hammar	Bosch		2 Nos. 3 Nos.	Working Working	
	Diamond Curve cutting Machine	Bosch		1 No.	Working	
	Allumium Ladder			6 Nos.	Working	
	Rod Cutting Machine	Makita Bosch		6 Nos. 8 Nos.	Working Working	
9	**Power Generating Equipments**					
	Diesel Generator Set	Ashok Leyland	62.5 KVA	1 No.	Working	
	Diesel Generator Set	Greaves	180 KVA	1 No.	Working	
	Diesel Generator Set	Honda	EBK 2000	2 Nos.	Working	
	Diesel Generator Set	Greaves	40 KVA	3 Nos.	Working	
	Diesel Generator Set	Cummins	125 KVA	1 No.	Working	
10	**Pumping Machine**					
	Dewatering Machine	Kirloskar Kirloskar		5 Nos. 2 Nos.	Working Working	
	Monoblock pump set Electric operated	Kirloskar		8 Nos.	Working	
	Diesel pump sets			5 Nos.	Working	

Contd... 5/P

Surendra Infrastruture Pvt. Ltd.

Director / Authorised Signatory

EXECUTIVE ENGINEER-III
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Municipal Council

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	Electric pump with Motor	Kirloskar		4 Nos.	Working	
	Water Pump			3 Nos.	Working	
11	**Survey Instruments**					
	Total Station	Trimble		3 Nos.	Working	
	Theodolite	Lawrence & Mayo		1 No.	Working	
	Instruments	Sokkia		5 Nos. 2 Nos.	Working Working	
12	**Light Motor Vehicles**					
	Cars	Maruti/Hyundai /Verna/ Innova /Mahindra/Bolero Tata Manza/Mahindra Scorpio		10 Nos. 2 Nos.	Working Working	
	Two wheelers Motor Cycle	Bajaj / Yamaha		10 Nos.	Working	
	Scooter	Bajaj		4 Nos.	Working	
13	**Misc. Tools & Tackles**					
	Bar Bending Machine	Jaymac		2 Nos.	Working	
	Chase cutting Machine	Black Dekar / Hitachi		3 Nos.	Working	
	Torque Wrench for Nut/Bolts / Screw	Black Deckar		2 Nos.	Working	
	Primary / Secondary Injection Equipments	NTPL		2 Nos.	Working	
	Die electric strength Testing Equipment	Guru		2 Nos.	Working	
	Magnetic Dial Indicator for Alignment	AIIM		2 Nos.	Working	
	Conduit die set	Venus		2 Nos.	Working	
	Pipe Vice	Taparia		2 Nos.	Working	
	Bench Vice	Taparia		2 Nos.	Working	
	LT Meggar 500 volts	WACO		3 Nos.	Working	
	HT Meggar 5000 volts	WACO		5 Nos.	Working	
	Tong Tester	WACO		3 Nos.	Working	
	Crimping Tool (Hydraulic)	DOWELLS		3 Nos.	Working	
	Alu. Section Crimping	HIND		2 Nos.	Working	
	Insulator Testing HT)	WACO		2 Nos.	Working	
	Insulator Testing (LT)	WACO		2 Nos.	Working	
	Earth Rammer	USHA		2 Nos.	Working	
	Alu. Section cutting / edding M/c.	HIND		1 Nos.	Working	
	Drill Machine with Stand	Bajaj / Black Deckar		6 Nos.	Working	

Contd... 6/p

NOTARY PUBLIC * Date 23/4/22 * VIJAYA BALAN, ADVOCATE

Surendra Infrastructure Pvt. Ltd.

Director / Authorised Signatory

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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	Air Blower	WOLF		3 Nos.	Working	
	Jack Hammer	BOSCH		5 Nos.	Working	
	Workshop Tools & Appliances	Taparia		3 Nos.	Working	
	Portable Electric Hand Saw	Black Deckar / Makita		14 Nos	Working	
	Portable Electric Plainer	Black Deckar		2 Nos.	Working	
	Overhead conduit puller	Maxpull		2 Nos.	Working	
	Test bench for light fittings	WACO		3 No.	Working	
	Cable fault location Megger	WACO		5 Nos.	Working	
	Oil Testing Set	Nirmal		2 Nos.	Working	
	Multi Meter	WACO		3 Nos.	Working	
	Multi Metering Fitting Workshop			1 Nos.	Working	
	Cutter / Moduler M/c	Black Decker / Makita		2 Nos	Working	
	Compressor for spray painting	Usha		2 Nos.	Working	
	Bending Machine	HIND		2 Nos.	Working	
	Electric Ductile Iron Pipe Cutter	Black Decker		1 Nos.	Working	
	Containerized Site Office			2 Nos.	Working	
14	**PILING**					
	Piling M/c with its equipments	Ruston		5 Nos.	Working	

NOTARY PUBLIC Dt. 23/4/22

Surendra Infrastruture Pvt. Ltd.

Director / Authorised Signatory

Affirmed before me after the contents were read over and explained in simple Hindi / English language, on this 23rd day of April 2022

D SIVA BALAN
ADVOCATE & NOTARY PUBLIC
A & N Administration
Port Blair, A & N Islands
Enrl. No. WB/1212A/2000

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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NEW

भारत सरकार
Govt. of India
सूक्ष्म, लघु और मध्यम उद्यम मंत्रालय
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES

उद्योग आधार Udyog Aadhaar

E

Type of Enterprise	Micro	Small	Medium
Manufacturing	A	B	C
Services	D	E	F
UAM No.	WB10E0023924		

Udyog Aadhaar Registration Certificate

Udyog Aadhaar Number: WB10E0023924

Name of Enterprise: SURENDRA INFRASTRUCTURE PVT. LTD.

Location of Plant Details

SN	Flat/Door/Block No.	Name of Premises/Building Village	Road/Street/ Lane	Area/Locality	City	Pin	State	District
1	9	NA	EZRA STREET	DALHOUSIE	KOLKATA	700001	WEST BENGAL	KOLKOTA

Official Address of Enterprise: 9, EZRA STREET 2ND FLOOR KOLKATA - 700001

District: KOLKOTA State: WEST BENGAL PIN: 700001

Mobile No: 9561950003 Email: sursales3@gmail.com

Date of commencement: 21/11/2005

Major Activity: SERVICES

Enterprise Type: Small

Previous Registration details-if any: -

National Industry Classification Code

SN	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit Code	Activity Type
1	41 - Construction of building	4100 - Construction of buildings	41001 - Construction of buildings carried out on own-account basis or on a fee or contract basis	Manufacturing
2	41 - Construction of building	4100 - Construction of buildings	41002 - Activities relating to alteration, addition, repair, maintenance carried out on own-account basis or on a fee or contract basis	Manufacturing
3	41 - Construction of building	4100 - Construction of buildings	41003 - Assembly and erection of prefabricated constructions on the site	Manufacturing
4	42 - Civil Engineering	4210 - Construction roads and railways	42101 - Construction and maintenance of motorways, streets, roads, other vehicular and pedestrian ways, highways, bridges, tunnels and subways	Manufacturing
5	42 - Civil Engineering	4220 - Construction of utility projects	42201 - Construction and maintenance of power plants	Manufacturing
6	42 - Civil Engineering	4220 - Construction of utility projects	42202 - Construction/erection and maintenance of power, telecommunication and transmission lines	Manufacturing
7	42 - Civil Engineering	4220 - Construction of utility projects	42203 - Construction of long distance pipelines or urban pipelines	Manufacturing
8	42 - Civil Engineering	4220 - Construction of utility projects	42204 - Construction and maintenance of water main and line connection, water reservoirs including irrigation system (canal)	Manufacturing
9	42 - Civil Engineering	4220 - Construction of utility projects	42205 - Construction and repair of sewer systems including sewage disposal plants and pumping stations	Manufacturing
10	68 - Real estate activities	6820 - Real estate activities on a fee or contract basis	68200 - Real estate activities on a fee or contract basis	Services

Acknowledgement: Date of Filing 30/09/2019 Date of Printing 12/08/2020

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Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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Municipal Council

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TYPE OF ENTERPRISE	MEDIUM MANUFACTURING
UDYAM REGISTRATION NUMBER	UDYAM-WB-10-0003587
NAME OF ENTERPRISE	M/S SURENDRA INFRASTRUCTURE PRIVATE LIMITED
SOCIAL CATEGORY OF ENTREPRENEUR	General

NAME OF UNITS

SNo.	Udyog Aadhaar Memorandum	Units Name
1	WB10E0023924	Surendra Infrastructure Pvt. Ltd.

OFFICAL ADDRESS OF ENTERPRISE

Flat/Door/Block No.	9	Name of Premises/ Building	Nil
Village/Town	-	Block	-
Road/Street/Lane	Ezra street 2nd floor	City	Kolkata
State	WEST BENGAL	District	KOLKOTA , Pin 700001
Mobile	9433003385	Email:	surealest@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE	21/11/2005
DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS	21/11/2005

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

SNo.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	41 - Construction of building	4100 - Construction of buildings	41001 - Construction of buildings carried out on own-account basis or on a fee or contract basis	Manufacturing
2	41 - Construction of building	4100 - Construction of buildings	41002 - Activities relating to alteration, addition, repair, maintenance carried out on own-account basis or on a fee or contract basis	Manufacturing
3	41 - Construction of building	4100 - Construction of buildings	41003 - Assembly and erection of prefabricated constructions on the site	Manufacturing
4	42 - Civil Engineering	4210 - Construction roads and railways	42101 - Construction and maintenance of motorways, streets, roads, other vehicular and pedestrian ways, highways, bridges, tunnels and subways	Manufacturing
5	42 - Civil Engineering	4220 - Construction of utility projects	42201 - Construction and maintenance of power plants	Manufacturing
6	42 - Civil Engineering	4220 - Construction of utility projects	42202 - Construction/erection and maintenance of power, telecommunication and transmission lines	Manufacturing
7	42 - Civil Engineering	4220 - Construction of utility projects	42203 - Construction of long distance pipelines or urban pipelines	Manufacturing
8	42 - Civil Engineering	4220 - Construction of utility projects	42204 - Construction and maintenance of water main and line connection, water reservoirs including irrigation system (canal)	Manufacturing
9	42 - Civil Engineering	4220 - Construction of utility projects	42205 - Construction and repair of sewer systems including sewage disposal plants and pumping stations	Manufacturing
10	68 - Real estate activities	6820 - Real estate activities on a fee or contract basis	68200 - Real estate activities on a fee or contract basis	Services

DATE OF UDYAM REGISTRATION 15/09/2020

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Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

CONFIDENTIAL

OFFICE OF THE MUNICIPAL COUNCIL
PORT BLAIR

F.No:- 05-03/SE/EE-III/Wks/SWM/MC/2020-21/03 Dated: - 03/07/2020

To,

M/s Surendra Infrastructure (P) Ltd.
19/1 V.I.P Road
Junglighat
Port Blair-744103

Sub: - Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping.

Sir,

Your tender for the work mentioned above has been accepted on behalf of the CEO, PBSPL at your tender amount of Rs. 9,97,51,266/- ((Rupees Nine Crore Ninty Seven lakhs Fifty One thousand Two hundred Sixty Six only). Which is 4.68% above Estimated cost of Rs. 9,44,99,231 (Rupees Nine Crore Forty Four Lakhs Ninty Nine Thousand Two Hundred Thirty One only).

Your are requested to Submit the Performance Guarantee of Rs. 4987563 (Rupees Forty Nine Lakhs Eighty Seven thousand Five Hundred Sixty Three only). Within 15 days from issue of this letter. The Performance Guarantee shall be in the prescribed form as provided in Clause 1 of General Conditions of Contract for CPWD works, and shall be valid up to 03rd January 2021.

Contractor should submit EPFO certificate and GST registration copy along with Performance Guarantee.

On receipt of the prescribed Performance Guarantee, necessary letter to commence the work shall be issued, and the Site of work will be handed over to you thereafter.

Please note that the time allowed for carrying out the work as entered in the tender will be reckoned from the date of issue of award letter.

Yours faithfully

Executive Engineer-III (works)
PBSPL

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

OFFICE OF THE MUNICIPAL COUNCIL
PORT BLAIR

No 05-03/SE/EE-III/AV/SWM/MC/2020-21/10 Date: 04/05/2022

M/s Surendra Infrastructure Pvt. Ltd
VIP Road,
Junglighat, Port Blair

Sub:- Performance Certificate

Ref:- Agreement No. 01(PBSPL) of 2020-2021
Marine Esplanade: Marine road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping

Sir,

The following are intimated as requested vide your Letter No 243/PB/045 dtd 02nd May'2022.

(a)	Name of the Contractor	:	M/s Surendra Infrastructure Pvt. Ltd.
(b)	Project location	:	Marine Esplanade, Port Blair, Andaman
(c)	Agreement Amount	:	Rs. 9,97,51,266/-
(d)	Upto Last Running Bill	:	Rs 9,47,48,301/-upto 23rd RA Bill Final Bill under process.
(e)	Date of commencement	:	07th Dec'2020
(f)	Date of Completion	:	06th June'2021
(g)	Extended date of Completion	:	06th June'2022
(h)	Actual date of Completion	:	18th April'2022

The following works have been executed with amount

i)	**CIVIL WORKS** Design and execution of Sea wall - 452.60 Rmt - RCC Mix Design M-40 - 2009 Cum - Steel Reinforcement -124318 Kg - Centering and shuttering - 5128 Sqm Earthwork - 6456 Cum Paver tiles 80mm - 4907.31 Sqm RCC Mix Design M-25 - 770 Cum FRP Pultruded hand rail - 1000 Mtr Victoria benches - 80 Nos Area Development and Beautification	:	Rs. 9,97,51,266/-
ii)	**Electricals Works** 8 Mtr. Height Decorative pole - 65 Nos Decorative Luminaires lighting fittings - 130 Nos 50mm DWC Pipes - 2400 Rmt Aluminum Armoured cable - 3000 Rmt Street light Timer Panel box - 2 Nos Pipe Earthing - 42 Nos		

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Executive Engineer-III (Works)
Municipal Council
Port Blair

REGIONAL OFFICE - PORT BLAIR -71-
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
(Minstry of Road Transport & Highways Government of India)
Regional Office: Ward No. 23, Near Air Force Station, Prothrapur, Garacharma (P.O),
Port Blair - 744 105, Ph: 03192 - 296755
Email: edp.portblair@nhidcl.com



CIN : U45400DL2014GOI269062

A GOVT. OF INDIA UNDERTAKING

No. NHIDCL/RO/A&N/12.00 to 45.00/ N-20/2020 /652 *Date 05.02.2022*

To

M/s Surendra Infrastructure (P) Ltd.
19/1, VIP Road, Jungli Ghat,
Port Blair - 744103
Email: sursale@yahoo.com

(Kind Attention: Mr. Kunal Parhladka, the Authorised Signatory)

Subject: "Supply & Laying of (a) 33kV UG electrical cable & (b) 400mm dia DI Water Pipeline, from Km 14+200 to Km 16+700 on NH-223 (New NH-4), affected due to widening/ upgradation of NH-223 (New NH-04) from Km 12.00 to Km 45.00 (Package-I) in the Union Territory of Andaman and Nicobar Islands, on Item Rate Basis in the FY 2021-22- 2nd Call" / **Letter of Acceptance (LOA) - Reg.**

Ref: Your bid (2493924) for the subject work 29.01.2021

Sir,

This is to notify that your Bid dated 29.01.2021 for execution of the work of *"Supply & Laying of (a) 33kV UG electrical cable & (b) 400mm dia DI Water Pipeline, from Km 14+200 to Km 16+700 on NH-223 (New NH-4), affected due to widening/ upgradation of NH-223 (New NH-04) from Km 12.00 to Km 45.00 (Package-I) in the Union Territory of Andaman and Nicobar Islands, on Item Rate Basis in the FY 2021-22- 2nd Call"*, at your quoted bid price amounting to **Rs. 3,49,77,257.00/- (Rupees Three Crore Forty Nine Lakh Seventy Seven Thousand Two Hundred and Fifty Seven Only) (including GST)** has been determined to be the lowest evaluated bid and is substantially responsive and has been accepted.

2. You are requested to return a duplicate of the LOA as an acknowledgement and sign the Contract Agreement within the period 10 (ten) days clause-33 of the RFP.

3. You are requested to furnish Performance Security for an Amount of Rs. 17,48,863.00/- (Rupees Seventeen Lakh Forty Eight Thousand Eight Hundred and Sixty Three only) as per clause 33 of the RFP within 10 (ten) days of receipt of this Letter of Acceptance (LOA).

4. You have option to provide 50% of the Performance Security within 10 (ten) days of receipt of Letter of Acceptance and sign the Contract Agreement. The remaining Performance Security can be submitted within 30 (thirty) days of signing of the agreement. For the remaining Performance Security, you may seek extension of time for a further period upto 60 days by paying the Damages upfront along with the request letter seeking the extension.

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure (P) Ltd. PORT BLAIR

No. 2-1/EE/PRI/SAD-I/PB/2021-22/ 348

कार्यपालक अभियंता का कार्यालय
OFFICE OF THE EXECUTIVE ENGINEER
पंचायती राज संस्थान
PANCHAYATI RAJ INSTITUTION
दक्षिण अण्डमान मण्डल.I
SOUTH ANDAMAN DIVISION-I
पोर्ट ब्लेयर, दक्षिण अण्डमान
PORT BLAIR, SOUTH ANDAMAN
eeprisa@gmail.com

Port Blair, dated 22nd February, 2022

To,

M/s Surendra Infrastructure Pvt Ltd.,
Ezra Street, 2nd floor, Kolkata.
Ph- 033 22253382, Mobile - 9433003385
e-mail - sursales8@gmail.com

Sub: - Letter of Acceptance –Reg

Sir/Madam,

1. This is to notify you that the Employer, namely, **Superintending Engineer (PRIs), A & N Islands** has accepted your Bid (Tender ID - 2021_DRD_112862_1 dated 24-08-2021) for execution of the ***"Up-gradation of Rural Road for Package No. AN0101 comprising of 05 Nos. rural roads of Road Code No. AN01PB01, AN01PB02, AN01FE02, AN01FE04, AN01FE07 for PMGSY-II at Port Blair and Ferrargunj Block under South Andaman Division-I"*** and Routine Maintenance of the works for five years for the Contract Price of **₹. 5,18,75,677/- (Rupees Five Crore Eighteen Lakh Seventy Five Thousand Six Hundred and Seventy Seven only)** is hereby accepted by our Agency.

2. You are hereby requested to furnish Performance Security **₹.7,78,135/- (Rupees Seven Lakh Seventy Eight Thousand One Hundred and Thirty Five only)** in the form detailed in Cl. 26.4 & Cl. 30 of ITB within 10 days of the receipt of this Letter of Acceptance, performance security valid up to 45 days from the date of expiry of Defects Liability Period i.e. up to **January 2028** and sign the Contract. If the Performance Security is in the form of a Bank Guarantee/fixed deposit receipt, the period of validity of Bank Guarantee/fixed deposit could be one year initially, however, the Contractor would get this Bank Guarantee extended in such a way that an amount equal to the requisite Performance Security is always available with the Employer until 45 days after the lapse of Defects Liability Period failing which action as stated in Cl. 30.3 of ITB will be taken.

3. You are also requested to indicate your nominee as required under Clause 53.2 of the GCC.

Yours faithfully

EXECUTIVE ENGINEER(PRI)
PIU-I/PMGSY-II
South Andaman Division-I,
Port Blair, South Andaman
(on behalf of President of India)

Copy To:-

1. The Secretary(RD/Panch.), A & N Administration for kind information please.
2. The Director (RD/Panch.), Directorate of RD,PRIs & ULBs for kind information please.
3. The Superintending Engineer(PRI), A & N Islands for kind information please.
4. The Assistant Engineer(PRI), Sub Division, Prothrapur for kind information and necessary action.
5. The Assistant Engineer(PRI), Sub Division-II, Chouldari for kind information and necessary action.
6. The Pradhan/Special Officer, Gram Panchayat, Beodnabad, Calicut, Guptapara and Wandoor for kind information please.
7. File No. 2-47/(1)/EE/PRI/SAD-I/PMGSY-II/2021-22

EXECUTIVE ENGINEER

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Section II
Instructions to Bidders (ITB)

F. Award of Contract

31 Award Criteria

31.1 Subject to Clause 32, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid Price.

31.2 Employer's Right to Accept any Bid and to Reject any or all Bids

Notwithstanding Clause 30, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.

32 Notification of Award and Signing of Agreement.

32.1 The bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Part I *General Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay to the Contractor in consideration of the execution, completion and maintenance of the Works, by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

32.2 The notification of award (LOA) will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause 33.

32.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and the successful Bidder after the performance security is furnished.

32.4 Upon furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

33 Performance Security

33.1 Within 10 (ten) days after receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security of 5 (five) percent of the Contract Price, valid for the period of 28 days after the expiry of defect liability period of 12 (twelve) months plus additional security for unbalanced Bids in accordance with Clause 28.3 of ITB and sign the contract. The validity shall account for additional 3 months time to account for BG verification, signing of contract and start date.

33.2 The performance security shall be in the form of a Bank Guarantee in the name of the Employer, from a Bank as applicable in case of bid security defined in Appendix to ITB.

33.3 Failure of the successful bidder to comply with the requirement of sub-clause 33.1 shall constitute sufficient ground for cancellation of the award and forfeiture of the bid security and debarment for a period as specified in clause 16.7.

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

5. In case of failure of submission of Performance Security as brought out above, the award shall be deemed to be cancelled and/or you will be debarred from participating in the future projects of NHIDCL, for a period of one year.

6. It may also be noted that, in case of failure to submit atleast 50% of the Performance Security, within 10(ten) days of Letter of Acceptance, LOA shall be withdrawn and action shall be taken as per RFP.

Your faithfully,

Col Hemant Bhardwaj (Retd)
Executive Director (P)
RO-Port Blair

Copy to: -

(i) DGM(P), PMU-Mayabunder : For information.

Accepted by

Name of the Authorised Person:
(For and on behalf of M/s Surendra Infrastructure (P) Ltd.)

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

- **Performance Security Deposit:** It is the retention amount deducted from the running bill of the contractors in addition to the Performance Guarantee. This will be @2.5% of the gross amount of each running bill so that the amount so retained shall be 2.5% of the value of the work done till then. This can be released against Bank Guarantee on its accumulation to a minimum amount of Rs. 5 lakhs subject to the condition that the amount of Bank Guarantee except last one shall not be less than 5 Lakhs. This amount will be released after passing of final bills as in the case of refund of deposit(**Refer Clause-1A of GCC for details)**..

- **Milestone:** The milestones to be achieved during the execution of the work shall be as follows.

Sl No	Milestones		Amount to be withheld in case of non-achievement of milestone
	Financial Progress	Time Allowed (From date of start)	
1	$^1/_8$ th of the whole work	¼th of the whole work	In the event of not achieving the necessary progress as assessed from the running payments, 1% of the tendered value of work will be withheld for failure of each milestone.
2	$^3/_8$ th of the whole work	½th of the whole work	
3	¾th of the whole work	¾th of the whole work	
4	Full	Full	

(Refer Clause 2 of GCC for more details).

- **CAR Policy:** The contractor shall, at his cost, take out Contractor's All Risk (CAR) insurance policy, jointly in the name of the "KINFRA" and the contractor, and the original policy shall be deposited with the "KINFRA" within one month from the date of Letter of Acceptance. The value of the CAR policy will be equivalent to the contract value and the validity of the policy will be date of completion/ extended time of completion of work. The policy should cover third party liability also. **(Refer Clause 45 of GCC)**

- **Laws:** All laws mentioned in the GCC of KINFRA such as labour laws, minimum wages law etc. shall be compiled by the contractor. Also, any other applicable laws in the construction work shall also be followed by the contractor.

- **Compensation for delay:** @ 1.5% per month of delay to be computed on per day basis.**(Refer Clause 2 of GCC for details)**

- **Time and Extension for delay:** The contractor shall submit request for time extension, if required, before the expiry of period of completion. The requests for extension received after the period of completion will be summarily rejected. **(Refer Clause 5 of GCC for details)**

- **Computerized Measurement Book:** All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book having pages of A-4 size as per the format of

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

KERALA INDUSTRIAL
INFRASTRUCTURE DEVELOPMENT CORPORATION
(A Statutory Body of Government of Kerala)

KIN/V/45MLD/WS PII/480/2021-22/ 3588 30/12/2021

M/s Surendra Infrastructure Pvt Ltd
H.O:9, Ezra Street,
Kolkata-700001

Sir,

Sub: **45 MLD Water supply project of KINFRA at KEPIP Kakkanad, Ernakulam ,SH: Supplying and laying of DI pumping main from Intake well at Thottumugham to Thorappu Jn.- Package II - Work Order issuing of**

Ref: 1. Tender No. : KINFRA/KEPIP/06/2021-22

2. Your negotiated offer letter 010/21-22/0442 dtd 18th November 2021

With reference to the above, M/s Surendra Infrastructure Pvt Ltd, is hereby informed that the **"45 MLD Water supply project of KINFRA at KEPIP Kakkanad,Ernakulam , SH: Supplying and laying of DI pumping main from Intake well at Thottumugham to Thorappu Jn.- Package II** is awarded to you, as per the details furnished below,

Sl No	Particulars		Remarks
1	Contract Value	:	Rs.19,17,66,535/- (Rupees Nineteen Crores Seventeen Lakhs Sixty Six Thousand Five Hundred And Thirty Five Only) which is 7.66% above PAC.
2	GST	:	Contract value is excluding GST. Applicable GST will be paid extra
3	Period of Completion	:	24 Calendar Months
4	Date of Commencement	:	10th day from the date of Work Order or 7th day from the date of receipt of this Work Order whichever is earlier.
5	Defects Liability Period	:	60 Months from the date of completion of work

You are directed to attend this office with Kerala stamp paper worth Rs.200/- and execute an agreement with KINFRA, along with the following,

6	Performance Guarantee	:	3% of the contract value amounting to Rs.57,52,996/-(Rupees Fifty Seven lakhs Fifty Two Thousand Nine Hundred and Ninety Six only), as per G.O (P) No.7/2021/Fin dated 07/01/2021. At least 50% of this shall be in the form of Treasury Fixed Deposit and the rest in the form of Bank Guarantee from a Scheduled/Nationalized bank). The validity of the Bank Guarantee shall be up to the expiry of defect liability period plus three months.
7	Additional Performance Guarantee	:	As per G.O (P) No.7/2021/Fin dated 07/01/2021 the Contractor has to submit undertaking for all rates quoted below 10% of the estimate amount.

* The performance guarantee and additional performance guarantee shall be submitted within 4 weeks from the date of work order.

The Contractor is liable to follow the following major tender conditions,

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Kinfra House, 31/2312, Sasthamangalam, Trivandrum-695 010, India. www.kinfra.org
Tel: ++91-471-2726585, Fax: ++91-471-2724773, e-mail: mail@kinfra.org

- **Hindrance in work:** Any hindrances occurred in the site shall be intimated by the contractor in writing to Engineer-in-charge with a copy to the agreement by authority within 1 week.

- **Mobilization Advance:** Mobilization advance not exceeding 10% of the tendered value may be given, if requested by the contractor in writing within one month of the order to commence the work. Such advance shall be in two or more instalments to be determined by KINFRA at his sole discretion. The first instalment of such advance shall be released by KINFRA to the contractor on a request made by the contractor to KINFRA in this behalf. The second and subsequent instalments shall be released by KINFRA only after the contractor furnishes a proof of the satisfactory utilization of the earlier instalment to the entire satisfaction of KINFRA. Before any instalment of advance is released, the contractor shall execute a Bank Guarantee Bond from Scheduled Bank for the amount equal to 120% of the amount of advance and valid for the contract period. This (Bank Guarantee from Scheduled Bank for the amount equal to 120% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery. The mobilization advance above bear an ***interest rate of 11.5% per annum*** and shall be calculated from the date of payment to the date of recovery, both days inclusive, on the outstanding amount of advance. **(Refer Clause 10B-ii of GCC for details)**

All other terms and conditions also, including GCC as per the tender and MOM of pre bid meeting, shall be binding on you. The rates quoted by you shall remain firm till the completion of the work.

Please return a copy of this letter duly signed by you as a token of your acceptance of this work order.

Thanking you,

Yours faithfully,

Managing Director

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

Signature Not Verified

Digitally signed by MATHEW ARIKUPURATHU GEORGE
Date: 2022.01.03 15:44:08 IST
Location: Kerala-KL

KINFRA. All such measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the KINFRA/PMC or his authorized representative as per interval or program fixed in consultation with KINFRA/PMC or his authorized representative. After the necessary corrections made by KINFRA/PMC, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to KINFRA/PMC for the dated signatures by the KINFRA/PMC and the contractor or their representatives in token of their acceptance.**(Refer Clause 6A of GCC for details).**

- **Secured Advance on Non-perishable Materials:** The contractor, on signing an indenture in the form to be specified by KINFRA, shall be entitled to be paid during the progress of the execution of the work up to 90% of the assessed value of any materials which are in the opinion of KINFRA non-perishable, non-fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work, the amount of such advance shall be recovered/ deducted from the next payment made under any of the clause or clauses of this contract. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.**(Refer Clause 10B-i of GCC for details)**

- **Deviations/Extra items, Variations Extent and Pricing:** KINFRA shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by KINFRA and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.

  Different Deviation Limit for Various Works

  i) For Original works
     a) Super structure 30%
     b) Foundation 100%

  ii) For Original works of time bound, urgent and emergency nature
     a) Super structure 50%
     b) Foundation 100%

  iii) All maintenance/Repair works 50%
  (Refer GCC Clause 12 and sub clauses for details)

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

* The performance guarantee and additional performance guarantee shall be submitted within 4 weeks from the date of work order.

The Contractor is liable to follow the following major tender conditions,

- **Performance Security Deposit:** It is the retention amount deducted from the running bill of the contractors in addition to the Performance Guarantee. This will be @2.5% of the gross amount of each running bill so that the amount so retained shall be 2.5% of the value of the work done till then. This can be released against Bank Guarantee on its accumulation to a minimum amount of Rs. 5 lakhs subject to the condition that the amount of Bank Guarantee except last one shall not be less than 5 Lakhs. This amount will be released after passing of final bills as in the case of refund of deposit **(Refer Clause-1A of GCC for details).**

- **Milestone:** The milestones to be achieved during the execution of the work shall be as follows.

Sl No	Milestones		Amount to be withheld in case of non-achievement of milestone
	Financial Progress	Time Allowed (From date of start)	
1	$^1/_8{}^{th}$ of the whole work	¼th of the whole work	In the event of not achieving the necessary progress as assessed from the running payments, 1% of the tendered value of work will be withheld for failure of each milestone.
2	$^3/_8{}^{th}$ of the whole work	½th of the whole work	
3	¾th of the whole work	¾th of the whole work	
4	Full	Full	

(Refer Clause 2 of GCC for more details)..

- **CAR Policy:** The contractor shall, at his cost, take out Contractor's All Risk (CAR) insurance policy, jointly in the name of the "KINFRA" and the contractor, and the original policy shall be deposited with the "KINFRA" within one month from the date of Letter Of Acceptance. The value of the CAR policy will be equivalent to the contract value and the validity of the policy will be date of completion/ extended time of completion of work. The policy should cover third party liability also **(Refer Clause 45 of GCC)**

- **Laws:** All laws mentioned in the GCC of KINFRA such as labour laws, minimum wages law etc. shall be compiled by the contractor. Also, any other applicable laws in the construction work shall also be followed by the contractor.

- **Compensation for delay:** @ 1.5% per month of delay to be computed on per day basis.**(Refer Clause 2 of GCC for details)**

- **Time and Extension for delay:** The contractor shall submit request for time extension, if required, before the expiry of period of completion. The requests for extension received after the period of completion will be summarily rejected. **(Refer Clause 5 of GCC for details)**

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

KERALA INDUSTRIAL
INFRASTRUCTURE DEVELOPMENT CORPORATION
(A Statutory Body of Government of Kerala)

KIN/V/45MLD/WS PIII/481/2021-22/3589 .

30/12/2021

M/s Surendra Infrastructure Pvt Ltd
H.O:9, Ezra Street,
Kolkata-700001

Sir,

Sub: 45 MLD Water supply project of KINFRA at KEPIP Kakkanad, Ernakulam ,SH: Supplying and laying of DI pumping main from Thorappu Jn to KEPIP, Kakkanad.- Package III - Work Order issuing of

Ref: 1. Tender No. : KINFRA/KEPIP/07/2021-22

2. Your negotiated offer letter 010/21-22/0443 dtd 18th November 2021

With reference to the above, M/s Surendra Infrastructure Pvt Ltd, is hereby informed that the "45 MLD Water supply project of KINFRA at KEPIP Kakkanad,Ernakulam , SH: Supplying and laying of DI pumping main from Thorappu Jn to KEPIP,Kakkanad.- Package III is awarded to you, as per the details furnished below,

Sl No	Particulars		Remarks
1	Contract Value	:	Rs.23,16,72,860/- (Rupees Twenty Three Crores Sixteen Lakhs Seventy Two Thousand Eight Hundred And Sixty Only) which is 6.59% above PAC.
2	GST	:	Contract value is excluding GST. Applicable GST will be paid extra
3	Period of Completion	:	24 Calendar Months
4	Date of Commencement	:	10th day from the date of Work Order or 7th day from the date of receipt of this Work Order whichever is earlier.
5	Defects Liability Period	:	60 Months from the date of completion of work

You are directed to attend this office with Kerala stamp paper worth Rs.200/- and execute an agreement with KINFRA, along with the following,

6	Performance Guarantee	:	3% of the contract value amounting to Rs.69,50,186/-(Rupees Sixty Nine lakhs Fifty Thousand One Hundred and Eighty Six only), as per G.O (P) No.7/2021/Fin dated 07/01/2021. At least 50% of this shall be in the form of Treasury Fixed Deposit and the rest in the form of Bank Guarantee from a Scheduled/Nationalized bank). The validity of the Bank Guarantee shall be up to the expiry of defect liability period plus three months.
7	Additional Performance Guarantee	:	As per G.O (P) No.7/2021/Fin dated 07/01/2021 the Contractor has to submit undertaking for all rates quoted below 10% of the estimate amount.

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

Kinfra House, 31/2312, Sasthamangalam, Trivandrum-695 010, India. www.kinfra.org
Tel: ++91-471-2726585, Fax: ++91-471-2724773, e-mail: mail@kinfra.org

ii) For Original works of time bound, urgent and emergency nature
   a) Super structure 50%
   b) Foundation 100%

iii) All maintenance/Repair works 50%
(Refer GCC Clause 12 and sub clauses for details)

- **Hindrance in work:** Any hindrances occurred in the site shall be intimated by the contractor in writing to Engineer-in-charge with a copy to the agreement by authority within 1 week.

- **Mobilization Advance:** Mobilization advance not exceeding 10% of the tendered value may be given, if requested by the contractor in writing within one month of the order to commence the work. Such advance shall be in two or more instalments to be determined by KINFRA at his sole discretion. The first instalment of such advance shall be released by KINFRA to the contractor on a request made by the contractor to KINFRA in this behalf. The second and subsequent instalments shall be released by KINFRA only after the contractor furnishes a proof of the satisfactory utilization of the earlier instalment to the entire satisfaction of KINFRA. Before any instalment of advance is released, the contractor shall execute a Bank Guarantee Bond from Scheduled Bank for the amount equal to 120% of the amount of advance and valid for the contract period. This (Bank Guarantee from Scheduled Bank for the amount equal to 120% of the balance amount of advance) shall be kept renewed from time to time to cover the balance amount and likely period of complete recovery.The mobilization advance above bear an ***interest rate of 11.5% per annum*** and shall be calculated from the date of payment to the date of recovery, both days inclusive, on the outstanding amount of advance.**(Refer Clause 10B-ii of GCC for details)**

All other terms and conditions also, including GCC as per the tender and MOM of pre bid meeting, shall be binding on you. The rates quoted by you shall remain firm till the completion of the work.

Please return a copy of this letter duly signed by you as a token of your acceptance of this work order.

Thanking you,

Yours faithfully,

Managing Director

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

Signature Not Verified

Digitally signed by MATHEW ARIKUPURATHU GEORGE
Date: 2022.01.03

- **Computerized Measurement Book:** All measurements of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book having pages of A-4 size as per the format of KINFRA. All such measurements and levels recorded by the contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the contractor from the KINFRA/PMC or his authorized representative as per interval or program fixed in consultation with KINFRA/PMC or his authorized representative. After the necessary corrections made by KINFRA/PMC, the measurement sheets shall be returned to the contractor for incorporating the corrections and for resubmission to KINFRA/PMC for the dated signatures by the KINFRA/PMC and the contractor or their representatives in token of their acceptance.**(Refer Clause 6A of GCC for details)**

- **Secured Advance on Non-perishable Materials**: The contractor, on signing an indenture in the form to be specified by KINFRA, shall be entitled to be paid during the progress of the execution of the work up to 90% of the assessed value of any materials which are in the opinion of KINFRA non-perishable, non-fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work, the amount of such advance shall be recovered/ deducted from the next payment made under any of the clause or clauses of this contract. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.**(Refer Clause 10B-i of GCC for details)**

- **Deviations/Extra items, Variations Extent and Pricing:** KINFRA shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by KINFRA and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided

  Different Deviation Limit for Various Works

  i) For Original works
     a) Super structure 30%
     b) Foundation 100%

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Suranjan Infrastructure Pvt. Ltd. PORT BLAIR

CA No: CE A&N Z/PB/01 OF 2020-2021 SERIAL PAGE No.

Appendix 'A' to CE A&N Zone, Port Blair letter No. 801084/ 83 /E8 dated 01 May 2020

DETAILS OF AMENDED LUMPSUM

1.	Total amount quoted by the tenderer in BOQ	**Rs. 10,48,91,675.00**
2.	**Deduct** : Reduction offered by the lowest bidder vide their letter No 242/PB/001 dated 27 Apr 2020 in response to this office letter No 801084/74/E8 dated 23 Mar 2020 against freak high items.	(-) Rs. **39,250.00**
3.	Net Amended Lumpsum	**Rs. 10,48,52,425.00**

(Rupees Ten crore forty eight lakh fifty two thousand four hundred twenty five only)

(E Srinivasa Rao)
AAD (Contracts)
for Accepting Officer

Signature of Contractor
Dated

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

Signature Not Verified
Digitally signed by NITIN KUMAR
Date: 2020.05.05 09:41:34 IST
Location: Ministry of Defence-MES

CA NO : CE A&N Z/PB/01 OF 2020-2021 SERIAL PAGE NO _____

Tele :03192- 286121
Fax :03192- 286168
E-mail :e8ceanz@nic.in

-84-

SPEED POST
Headquarters
Chief Engineer A & N Zone
Brichgunj, Junglighat (Post)
Port Blair – 744 103

801084/ 83 /E8

07 May 2020

M/s Surendra Infrastructure (P) Ltd **(Index No. SS-140/E-in-C's Branch)**
19/I, V.I.P. Road, Junglighat,
Port Blair – 744 103
E-mail: sursale8@yahoo.com & sursalepb@gmail.com

ENCHANCEMENT OF CAPTIVE POWER SUPPLY AT AF STATION CARNICOBAR ISSUED VIDE THIS OFFICE LETTER NO 801084/22/E8 DATED 10 JAN 2020 AND SUBSEQUENTLY CORRIGENDUM ISSUED VIDE LETTER NOS 801084/42/E8 DATED, 07 FEB 2020, 801149/75/E8 DATED 07 FEB 2020, 801084/45/E8 DATED 07 FEB 2020, 801084/50/E8 DATED 11 FEB 2020, 801149/52/E8 DATED 13 FEB 2020 AND 801084/54/E8 DATED 24 FEB 2020, (TENDER ID: 2019_MES_308832_1)

Dear Sir (s),

1. References:-

   (a) Your tender for the subject work submitted online vide Bid ID No-1445808 with bid submission end dt 07 Mar 2020 and financial Bid (Cover-2) opened on 21 Mar 2020.

   (b) This office letter No. 801084/74/E8 dated 23 Mar 2020.

   (c) Your letter No. 242/PB/001 dated 27 Apr 2020.

2. On behalf of the President of India, I hereby accept your tender as amended subsequently vide letters under reference for the work mentioned above for a amended lump sum of **₹ 10,48,52,425.00 (Rupees Ten crore forty eight lakh fifty two thousand four hundred twenty five only).** The details of the amended lumpsum are given in Appendix 'A' to this letter.

3. This contract is allotted the number **'CE A&N Z/PB/01 OF 2020-2021'** which will be quoted by you in all future correspondence in connection with this contract. The contract agreement number wherever mentioned otherwise in the tender documents shall be amended to read as **'CE A&N Z/PB/01 OF 2020-2021'.**

4. The tender enquiry, your tender, the letters referred to above and this letter shall be the sole repository of the contract.

Yours faithfully,

(Sandeep Soni)
Brig
Chief Engineer
Accepting Officer
For and on behalf of the President of India

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Encls: (Appx 'A')

Copy to:-

1. HQ E-in-C's Branch New Delhi
   (M/s Surendra Infrastructure (P) Ltd (Index No. SS-140/E-in-Cs Branch)
2. HQ CESC, Pune-411 001
3. AAO (ANC), Buniyadabad, Port Blair-744 102
4. STE, Chennai- 600 009
5. GE (I) 866 EWS, PIN- 913 866, C/o 99 APO
6. AO, GE (I) 866 EWS, PIN- 913 866, C/o 99 APO
7. Regional Labour Commissioner-Central, 2nd Bldg, 5th floor, Nizam Palace 234/4, NSC Bose Road, Kolkata-700 020.
8. Asst Labour Commissioner (Central), Near FCI Godown, Dollygunj, Port Blair-744 103.
9. Commissioner of Customs, Central Excise and Service Tax (A&N Div), Kamraj Marg, VIP Road, Port Blair-744103
10. **Internal Distribution**:- E2 (Plg), E2 (Wks), E2 (Des), E3, E4, E5 & E6 Sections.

Surendra Infrastructure (P) Ltd. PORT BLAIR

S237

OFFICE OF THE MUNICIPAL COUNCIL
PORT BLAIR

No.15-29/EE-III/RW/MC/2018-19/781 Dated: 07/03/2019

To,

M/s. Surendra Infrastructure (P) Ltd.
Govt. Contractor
Junglighat,
Port Blair
Ph.No: 03192-231781.

Sub: - Tender NIT No-24/EE-III/RW/MC/2018-19, dated 01.03.2019 & Tender I.D:- PBMC/477 of Port Blair Municipal Council.

Your Tender for the Tender ID No mentioned above has been accepted on behalf of the Secretary, Municipal Council at your Tendered Amount of ₹.2,17,74,914.00 **(Rupees Two Crore Seventeen Lakhs Seventy Four Thousand Nine Hundred Fourteen Only)**, which is **-33.22 %** below the Estimated cost of ₹.3,26,08,935.00 **(Rupees Three crore Twenty Six Lakhs Eight Thousand Nine Hundred Thirty Five Only)**.

You are requested to submit the PERFORMANCE SECURITY/ GUARANTEE of ₹.10,88,746.00 **(Rupees Ten Lakhs Eighty Eight Thousand Seven Hundred Forty Six Only)** within **15 days** from issue of this letter. This Performance Guarantee shall be in the prescribed form as provided in clause 1 of the General Conditions of Contract for CPWD works, and shall be valid up to **30 June 2020.**

Contractor should submit EPFO certificate and GST registration copy along with performance guarantee.

On receipt of the prescribed performance guarantee, necessary letter to commence the work shall be issued, and the said of work handed over to you thereafter.

Please note that the time allowed for carrying out the work as entered in the tender will be reckoned from the date of issue of award letter.

Executive Engineer-III (Works)
Municipal Council

Copy to:

1. The Secretary, Municipal Council
2. The Superintending Engineer, Municipal Council for information.
3. The Executive Engineer (RCD), APWD, Wimberlygunj (Nodal Officer) for information
4. The Assistant Engineer-III (R/Works), Municipal Council
5. The Junior Engineer-III (Road Works).

Executive Engineer-III (Works)
Municipal Council

Surendra Infrastructure (P) Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

OFFICE OF THE MUNICIPAL COUNCIL
PORT BLAIR

No.15-35/EE-III/RW/MC/2018-19/ 783 Dated: 07/03/2019

To,

M/s. Surendra Infrastructure (P) Ltd.
Govt. Contractor
Junglighat,
Port Blair
Ph.No: 03192-231781.

Sub: - Tender NIT No-23/EE-III/RW/MC/2018-19, dated 01.03.2019 & Tender I.D:- PBMC/476 of Port Blair Municipal Council.

Your Tender for the Tender ID No mentioned above has been accepted on behalf of the Secretary, Municipal Council at your Negotiation Tendered Amount of ₹.1,03,15,541.00 (Rupees One Crore Three Lakhs Fifteen Thousand Five Hundred Forty One Only), which is -3.23 % below the Estimated cost of ₹.1,06,60,083.00 (Rupees One crore Six Lakhs Sixty Thousand Eighty Three Only).

You are requested to submit the PERFORMANCE SECURITY/ GUARANTEE of ₹.5,15,777.00 (Rupees Five Lakhs Fifteen Thousand Seven Hundred Seventy Seven Only) within 15 days from issue of this letter. This Performance Guarantee shall be in the prescribed form as provided in clause 1 of the General Conditions of Contract for CPWD works, and shall be valid up to 31 Jan 2020.

Contractor should submit EPFO certificate and GST registration copy along with performance guarantee

On receipt of the prescribed performance guarantee, necessary letter to commence the work shall be issued, and the said of work handed over to you thereafter

Please note that the time allowed for carrying out the work as entered in the tender will be reckoned from the date of issue of award letter.

Executive Engineer-III (Works)
Municipal Council

Copy to:

1. 1 The Secretary, Municipal Council
2. The Superintending Engineer, Municipal Council for information
3. The Executive Engineer (RCD), APWD, Wimberlyganj (Nodal Officer) for information
4. The Assistant Engineer-III (R/Works), Municipal Council
5. The Junior Engineer-III (Road Works)

Executive Engineer-III (Works)
Municipal Council

EXECUTIVE ENGINEER-III
(WORKS & SVvM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

S. 234

OFFICE OF THE MUNICIPAL COUNCIL
PORT BLAIR

No.15-32/EE-III/RW/MC/2018-19/ 782 Dated: 07/03/2019

To,

M/s. Surendra Infrastructure (P) Ltd.
Govt. Contractor
Junglighat,
Port Blair
Ph.No: 03192-231781.

Sub: - Tender NIT No-22/EE-III/RW/MC/2018-19, dated 01.03.2019 & Tender I.D:- PBMC/478 of Port Blair Municipal Council.

Your Tender for the Tender ID No mentioned above has been accepted on behalf of the Secretary, Municipal Council at your Tendered Amount of ₹.2,28,02,804.00 *(Rupees Two Crore Twenty Eight Lakhs Two Thousand Eight Hundred Four Only)*. which is -3.35 % below the Estimated cost of ₹.2,35,94,648.00 **(Rupees Two crore Thirty Five Lakhs Ninety four Thousand Six Hundred Forty Eight Only).**

You are requested to submit the PERFORMANCE SECURITY/ GUARANTEE of ₹. 11,40,140.00 **(Rupees Eleven Lakhs Forty Thousand One Hundred Forty Only)** within **15 days** from issue of this letter. This Performance Guarantee shall be in the prescribed form as provided in clause 1 of the General Conditions of Contract for CPWD works, and shall be valid up to **30 July 2020**

Contractor should submit EPFO certificate and GST registration copy along with performance guarantee.

On receipt of the prescribed performance guarantee, necessary letter to commence the work shall be issued, and the said of work handed over to you thereafter.

Please note that the time allowed for carrying out the work as entered in the tender will be reckoned from the date of issue of award letter.

Executive Engineer-III (Works)
Municipal Council

Copy to:

1. The Secretary, Municipal Council
2. The Superintending Engineer, Municipal Council for information.
3. The Executive Engineer (RCD), APWD, Wimberlygunj (Nodal Officer) for information
4. The Assistant Engineer-III (R/Works), Municipal Council
5. The Junior Engineer-III (Road Works).

Executive Engineer-III (Works)
Municipal Council

Surendra Infrastructure (P) Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

5.239

OFFICE OF THE MUNICIPAL COUNCIL
PORT BLAIR

No:- PBMC/2/2/2019/EE-I(Wks)/ 31 Dated: - 29/4/2019

To,

M/s.Surendra Infrastructure Pvt. Ltd.
19/1, V.I.P Road, Junglighat
Port Blair.
Pin: 744103
Phone No.
233517, 231781,
233197

Sub:- Resurfacing of road and renovation of drain with covering Slab from Main road Co-Operative Bank to Sreya Bhavan and PBMC Steel Water Tank to Hadco Junction in Lillypur Ward No. 01, Resurfacing of road from H.F. Shipping to Kolapuri Tempie and Indus Global Academy to Ram Co-Ship repairing in Haddo ward No. 01

Sir

Your Tender for the work mentioned above has been accepted on behalf of the Chairperson, Municipal Council at your Negotiated Tendered Amount of **₹.1,47,43,042.00 (Rupees One Crore Forty Seven Lakhs Forty Three Thousand Forty Two Only)**, which is **3.13%** above from the Estimated Cost of **₹.1,42,95,515.00 (Rupees SOne Crore Forty Two Lakhs Ninety Five Thousand Five Hundred Fifteen Only).**

You are requested to submit the **PERFORMANCE SECURITY/ GUARANTEE** of **₹7,37,152.00 (Rupees Seven Lakhs Thirty Seven Thousand One Hundred Fifty Two Only)** within 15 days from issue of this letter. This Performance Guarantee shall be in the prescribed form as provided in clause 1 of the General Conditions of Contract for CPWD works, and shall be valid up to **31st Jan 2019.**

On receipt of the prescribed performance guarantee, necessary letter to commence the work shall be issued, and the said of work handed over to you thereafter.

Please note that the time allowed for carrying out the work as entered in the tender will be reckoned from the date of issue of award letter.

Yours Faithfully

Executive Engineer-I (Works)
Municipal Council

Copy to: -
1 The Accountant, Municipal Council.
2 The Assistant Engineer-I (Works), Municipal Council

Executive Engineer-I (Works)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

1. CIVIL SPECIFICATIONS- GENERAL ITEMS

a. Design of all reinforced concrete structures shall be as per IS:456, of pre-stressed concrete structures as per IS:1343. The structural safety of all foundations on soil shall, in general be based on IS: 1904. The structures shall be designed for Seismic Zone..V

b. For calculation purpose "Limit state Design" methods with crack width not exceeding 0.2 mm according to IS:456-2000 shall generally be adopted, except for water retaining structures where IS:3370 (Part I-IV) shall be referred and other special cases requiring design by working stress method.

c. All grouting below machine/equipment bases, and pockets shall be non-shrinking grout of adequate thickness and minimum grade of M30 with 6mm down aggregates. Grouting below structural column bases shall be minimum grade of M30 with 6mm and down aggregates.

d. PCC grade M20 – Plinth protection, screed concrete, foundation below masonry walls, encasing of underground pipes & conduits, ground floor at plinth level, toilet, rest room, etc. The thickness shall not be less than 100 mm. All Manholes, Drains , Buildings, Water Retaining Structures, Pump House, Pump Sump etc. shall be of minimum M30 Concrete Grade. All foundations and concrete structures shall be designed to resist full operating dead and live loads, with appropriate combination of wind and seismic forces and with due allowance for impact, inertia loading, vibration, unbalanced dynamic loads, etc. as secondary effect of live loads, erection loads, temperature variation etc. While designing structures and foundations either the effect of seismic forces or wind loads, whichever produces the worst effect, shall be considered along with usual load conditions. Apart from the installation and operating loads indicated by the equipment manufacturers, the design of buildings and structures shall be based on dead and imposed loads calculated according to IS:875. All structures shall be designed for seismic load as per IS1893 2016/latest in the category one above the stated in the specified code.

f. Concentrated and uniformly distributed live load on floors and platforms shall be considered depending upon the usage and in accordance with maximum expected process requirements, to be indicated by the equipment manufactures. When the loads are movable, they shall be so placed as to get worst effect in moment & shear, axial load etc. for which the elements shall be designed. The effect of concentrated load shall not be reduced. Due allowance shall be made, wherever necessary, for installation and operation of any equipment as per equipment manufacturer's data and recommendations. The design shall be based on the maximum loading due

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to uniform live load and/or equipment loading including impact, vibration, unbalanced operating forces, etc.

g. Foundation for structures and equipment shall be proportioned to resist the worst combination of loading and shall generally be designed as per the provision of IS:1904 for open foundations on soil and IS: 2911 for foundations on piles.

1.1. SETTING OUT

Before start of excavation works Contractor shall carry out preliminary setting out of key items pertaining to the construction and excavation works. Contractor will be fully responsible for establishing and locating at site all grid lines, base lines, levels and limits for project. A Qualified surveyor should be engaged to prepare the above works.

All setting out information established by Contractor on site should conform accurately with information in the Drawings. Client's Representative shall approve all setting out and locations prior to any excavation works.

Prior to start of further works, Contractor should do a Quality check and any errors/non-compliance with Drawings should be highlighted to the Client's Representative. If the setting out will be a cause of errors in further execution of works, Contractor should seek clarification from the Client's Representative. Any works done which cause obstruction to future works, without approval from the Client's Representative, shall be demolished and reconstructed at the expense of the Contractor.

Contractor shall maintain enough pillars/pegs / markings for checking/monitoring of the works for the entire duration of the project

1.2. PRESERVATION OF EXISTING TOP SOIL

1.2.1. Stripping top soil

i) Before beginning general excavation or filling, Contractor shall strip topsoil from areas where there will be regrading, paving/roads and other areas shown on drawings.
ii) Topsoil shall be removed to an average depth of 150mm, if the depth of topsoil is difficult to determine Contractor shall give notice to the Employers Engineer and the decision of Employer's Engineer shall be final on depth of top soil.
iii) Stripped topsoil to be reused immediately after stripping or removed from site;

1.2.2. Location of stockpile:

Topsoil shall be stored in an area of the site where it should not interfere with other site operations so that it can be left undisturbed during the construction process. The

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area that is to be used for storing the topsoil shall be cleared of vegetation and any waste arising from the development e.g. building rubble and fill materials.

1.2.3. **Protection:**

Contractor to make sure the following treatment has been applied to remove topsoil:

i) Topsoil not to be mixed with subsoil, stone, hardcore, rubbish or material from demolition, other soil or materials containing aggressive weeds or non-soil forming materials, oil, fuel cement or other substances harmful to plant growth;

ii) Do not place any other material on top of storage heaps.
iii) Do not allow construction plant to pass over storage heaps.
iv) Prevent compaction and contamination, by fencing and covering as appropriate.

2. Excavation

1) Definitions- Excavation in All Types of Soils Excluding Rock.

The works under this head shall comprise of the following and shall have the meanings hereby assigned to them:

a) "Excavation" means excavation in open cut (excluding trench excavation outside buildings / structures) down to levels required as per approved drawings or otherwise as being the general levels after completion of excavation.

b) "Trench excavation" means excavation (outside buildings / structures) of trenches into which pipes (of all types and sizes) and cables are to be laid to levels and limits as required as per approved drawings or otherwise. This shall also include miscellaneous isolated lengths of trenches beneath or adjacent to other structures.

The term "excavation" is deemed to include for disposing excavated material in any of the following ways:

Back-filling to excavations and completed structures within the site using suitable excavated material and including placing in temporary spoil tips and any double handling required all as specified hereafter.

Or transporting and placing approved excavated material in permanent spoil tips, including the shaping and drainage of such tips all as specified hereafter.

Or transporting selected excavated material to locations within the site where embankments are to be constructed or where filling around structures is specified to be constructed as embankment including tipping ready for spreading and compacting.

The ground shall be excavated by such methods and to such dimensions and depths as shall use on excavation. Slopes required for stable formation of sides shall be provided. Allow for the proper construction of the works and safety of personnel and

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equipment. The excavation shall include excavation in earth and murrum etc shall be carried out to the correct levels required and specified and no clearance, plus or minus (ie. no overcuts), shall be permitted. However, if any overcuts / depressions are formed due to fault of contractor, they shall be made good by filling with M-15 concrete up to the bottom layer of the footing/raft without any extra cost implication. When excavation has reached within 300 mm of the required formation level, further excavation shall be carried out carefully to avoid any overcuts / depressions.

2) Excess Excavation

In case of excess excavation by the Contractor (beyond that specified in drawings), the contractor shall , at his own expense, remove from the pits all material resulting from excess excavation and shall make good the same with such kind of fill material or in such class of concrete as may be reasonably required by Employer's Engineer having regard to the circumstances.

The Contractor shall backfill such excess excavation with concrete, rubble, stone or rock fill as directed by the Employer's Engineer / PMC. Filling other than concrete shall be placed in layers not exceeding 150 mm in thickness, shall be thoroughly compacted and have adequate fines content to fill the voids.

3) SUPPORTING EXCAVATIONS

The Contractor shall well and effectually support the sides and ends of all excavations to prevent fall or run from any portion of the ground outside the excavation and to prevent settlement or damage to structures adjacent to the excavation. Any excavation necessary to provide space for such support or other working space shall be carried out. If, for any reason, any portion of the bottoms, sides or ends of any excavations shall give way, the Contractor shall at his own expense take all necessary remedial measures including the excavation and removal of all the ground thereby distributed. Where the Contractor elects and is permitted by the Employer's Engineer / PMC to perform excavations with sloping faces (other than sloping excavations shown on the drawings or required as permanent features of the works) and without shoring, the excavated faces shall be to stable slopes and heights. No extra cost shall be paid for any additional excavation and backfilling.

4) TIMBER SHORING

Close timbering shall be done by completely covering the sides of the trenches and pits generally with short, upright members called 'rolling boards'. The boards shall generally be placed in position vertically side by side without any gap on each side of the excavation and shall be secured by horizontal wailings of strong wood at maximum 1.2 metres spacing and suitably strutted. If the soil is very soft and loose, the boards shall be placed horizontally against each side of the excavation and supported by vertical wailings, which in turn shall be suitably strutted. The lowest

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boards supporting the sides shall be taken into the ground and no portion of the vertical side of the trench or pit shall remain exposed, so as to render the earth liable to slip out.

The shoring material shall not be of sizes less than those specified below unless steel sheet piling is used or unless otherwise approved by the Employer's Engineer in writing:

a) Planks - 5 cm x 25 cm

b) Waling pieces - 10 cm x 20 cm

c) Struts - 15 cm x 20 cm

Timber shoring shall be 'dose' or 'open' type, depending on the nature of soil and the depth of pit or trench. The type of timbering shall be as approved by Employer's Engineer. It shall be the responsibility of the Contractor to take all necessary steps to prevent the sides of excavations, trenches, pits, etc., from collapsing.

Timber shoring may be required to keep the sides of excavations vertical to ensure safety of adjoining structures or to limit the slope of excavations, or due to space restrictions or for other reasons. Such shoring shall be carried out, except in an emergency, only under instructions from the Employer's Engineer / PMC.

The withdrawal of the timber shall be done very carefully to prevent the collapse of the pit or trench. It shall be started at one end and proceed systematically to the other end. Concrete or masonry shall not be damaged during the removal of the timber. No claim shall be entertained for any timber which cannot be retrieved, and no extra cost shall be payable.

In case of open timbering, the entire surface of the side of trench or pit is not required to be covered. The vertical boards of minimum 25 cm x 4 cm sections shall be spaced sufficiently apart to leave unsupported strips of maximum 50 cm average width. The detailed arrangement, sizes of the timber and the spacing shall be subject to the approval of the Employer's Engineer. In all other respect, the specification for close timbering shall apply to open timbering.

In case of large pits and open excavations, where shoring is required for securing safety of adjoining structures or for any other reasons and where the planking across sides of excavation/ pits cannot be strutted against, suitable inclined struts supported on the excavated bed shall be provided. Load from such struts shall be suitably distributed on the bed to ensure no yielding of the strut.

5) TRIMMING EXCAVATIONS

When excavating to specified or required levels for the foundation of any structure or to specified or required limits for the face of any structure required to abut

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undisturbed ground, the Contractor shall not excavate the last 150 mm until immediately before commencing the constructional work, except where the Employer's Engineer shall permit otherwise. Should the Contractor have excavated to within 150mm above these specified levels or to within 150 mm of these specified limits before he is ready or able to commence the constructional work he shall, where required by the Employer's Engineer, excavate further so as to remove not less than 150mm of material immediately before commencing the constructional work. Before commencement of any constructional work all shattered and loose material shall be removed from the excavations by hand so as to ensure that the work rest on a solid and perfectly clean foundation or abuts against solid ground.

6) PIPE TRENCHES

Trench excavation (as previously defined) means excavation of trenches into which pipes and cables are to be laid and the term pipes shall mean pipes of all kinds and for whatever purpose.

The line and level of trenches shall be as shown on the drawings or as may be directed by the Employer's Engineer/ PMC. Before commencing trench excavation, the route of the trench shall be pegged out accurately and the natural ground levels shall be agreed with the Employer's Engineer / PMC. Strong sight rails shall then be fixed and maintained at each change of gradient and at as many intermediate points as may be necessary. On these rails shall be marked the centre line and the level to which the excavation is to be carried out, such rails being not more than thirty meters apart.

7) TRENCH EXCAVATION GENERALLY

Trench excavation shall be carried out by such methods and to such lines, dimensions and depths as shall allow for the proper construction of the works, provided always that, unless the Employer's Engineer permits otherwise, no trench excavation shall be less than 500mm in width.

Any hard rock in trench excavation shall be so excavated that the clearance between the pipe when laid and the hard rock side and bottom of the trench is kept to the minimum limits necessary to provide for working space and tile specified thickness of bedding haunching and surround to the pipe.

The sides of trench excavation shall be vertical unless the Employer's Engineer permits otherwise. Any widening or deepening of trench excavations necessary to accommodate curves, joints or bends in the pipe as required or when ordered by the Employer's Engineer / PMC shall be provided.

No length of trench excavation shall be started until the pipes to be laid in that length are available on the site.

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8) TRENCH EXCAVATION IN ROADS AND FOOTPATHS

All trench excavation and other work carried out within the limits of any road shall be completed as rapidly as possible and not more than half of the width of the carriage way shall be obstructed at one time. Road drains and grips shall be kept free from obstruction. In any event the Contractor's shall take special precautions, which shall include the continuous support of the sides of the excavation is begun until the refilling of the trench is placed to ensure that there is no disturbance of the adjacent road or road foundation.

Where excavated material has temporarily been deposited on a grass margin or road pavement, the margin or road pavement shall on completion of refilling be entirely to its original condition and left free from loose stones.

The Contractor shall Barricade both sides of Trench and follow all safety procedures.

9) TRENCH EXCAVATION IN FIELDS, ETC.

The term "fields" includes fields, moor lands, grass verges and the like and all private lands, and no length of trench excavation located in fields shall be commenced until suitable temporary barricading/ fencing has been erected around that length unless the Employer's Engineer permits otherwise. Temporary fencing shall not be removed without the Employer's Engineer permission, which will not normally be given until the trench excavation had been refilled and reinstated to the original ground condition or as directed by the Employer's Engineer.

10) SUPPORTING TRENCH EXCAVATIONS

The Contractor shall well and effectually support the sides of trench excavations to prevent any fall or run from any portion of the ground outside the excavation and to prevent settlement of or damage to structures adjacent to the excavation. The Contractor shall be deemed to have made his own allowance for any extra excavation necessary to provide space for such support and for any other working space. If for any reason any portion of trench excavation shall give way, the Contractor shall at his own expense take all necessary remedial measures including the excavation and removal of all the ground thereby disturbed and making good the same.

Where the Contractor elects and is permitted by the Employer's Engineer to execute trench excavations with battered sides instead of providing support as a foresaid, they shall be excavated to stable slopes and heights.

11) TRIMMING TRENCH EXCAVATIONS

When excavating to required levels for trench excavations or to required limits from the face of any structure therein required to abut undisturbed ground, the Contractor

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shall not excavate the last 300 mm until immediately before commencing constructional work except where the Employer's Engineer permits otherwise. Should the Contractor have excavated to within 300 mm above these required levels or to within 300 mm of these required limits before he is ready or able to commence the constructional work he shall, where required by the Employer's Engineer, excavate further so as to remove not less than 300 mm of material immediately before commencing the constructional work.

Where no bedding material is required to be laid beneath the pipe, the bottom of trench excavations shall be carefully boned in and trimmed true to grade with the aid of a straight edge at least six metres long so as to ensure a continuous support for the pipes.

The trench bottom shall then be pricked over with a fork and any stones or flints either likely to cause the pipe to bed unevenly or to damage the pipe and its coating or greater than 20mm in size shall be picked out the pipe bed and any holes so formed shall be filled in with soft material and trimmed to the correct level.

Where no bedding material is required, all shattered and loose material shall be removed from the bottom of the trench excavation so that the bedding material rest on a solid and clean foundation.

12) TRENCHES NOT TO BE LEFT OPEN

Trench excavation shall be carried out expeditiously and, subject to any specific requirements of the Contract, the refilling and surface reinstatement of trench excavations shall be commenced and completed as soon as reasonably practicable after the pipes have been laid and jointed.

Pipe laying shall follow closely upon the progress of trench excavation, and the Contractor shall not permit unreasonably excessive lengths of trench excavation to remain open while awaiting testing of the pipeline. The Contractor shall take precautions to prevent flotation of pipes in locations where open trench excavations may become flooded, and these precautions may include the partial refilling of the trench leaving pipe joints exposed while awaiting tests of the joints.

If the Employer's Engineer / PMC considers that the Contractor is not complying with any of the foregoing requirements he may prohibit further trench excavation until he is satisfied with the progress of laying and testing of pipes and refilling of trench excavation.

13) REFILLING OF TRENCH EXCAVATIONS

Trench excavations shall be refilled using suitable materials selected from excavations carried out at site or borrow areas/Imported Earth as directed by the Employer's Engineer / PMC.

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Soft material (free from stones greater than 50 mm in size for pipes without bitumen sheathing and 20 mm in size for pipes with bitumen sheathing) shall be deposited in 150 mm layers and thoroughly rammed under and around the pipe with suitably shaped rammers working alternately on either side of the pipe (particular care being taken to avoid damage to the pipe and any sheathing) until the trench has been refilled upto the swell of the pipe, thereafter until the soft filling has been carried up at least 300mmabove the top of the pipe.

The remainder of the refilling may consist of coarse material (including broken rock from excavation in hard rock) free from boulders and clods of earth larger than 150 mm in size provided that the compacted backfill is, in the opinion of the Employer's Engineer sufficiently dense to prevent material from the superimposed layers being washed into the voids in such backfill. This coarse material shall be spread in layers of not greater depth than 225 mm and be thoroughly rammed by an approved mechanical rammer. The coarse filling is to be carried up to the level at which (in roads and footpaths) surface reinstatement is to commence or (elsewhere) to such level as with the surface reinstatement of the whole of the topsoil will leave the finished work sufficiently "proud" to allow for future settlement to the original ground level.

Hard material such as broken rock and original road metalling shall normally be used only for the surface reinstatement of roads as specified but where it is suitable and available in sufficient quantity it may be used in place of or as well as the aforesaid coarse material.

Where necessary the Contractor shall adjust the moisture content of the refill material either by drying out or by adding water to assist the compaction of the material.

Should the material being placed as refilling, while acceptable at the time when approved, become unacceptable to the Employer's Engineer due to exposure to weather conditions or due to flooding or have become puddle, soft or segregated during the progress of the works, the Contractor shall at his own expense remove such damaged, softened or segregated material and replace it with fresh approved material. Where directed by the Employer's Engineer / PMC trench excavations shall be refilled with concrete.

14) SURFACE REINSTATEMENT IN FIELDS. ETC.

After he has refilled trench excavation in fields and grass verges in the manner and to the level specified, the Contractor shall replace all top soil previously removed and it shall be evenly distributed and levelled over the full extent of the stripped area. Such of the working areas occupied by the Contractor as were originally down to grass shall be sown with grass seed of equivalent quality and maintained until the new grass is properly established.

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Other areas not originally down to grass shall be dressed with suitable fertilizers harrowed in so as to restore the original level of fertility.

15) SURFACE REINSTATEMENT IN ROADS AND FOOTPATHS

Surface reinstatement of refilled trench excavations in roads and footpaths shall consist of approved backfill material which has been well compacted and brought up to the sub grade level of the adjacent road surface. The balance portion shall be made good with similar material as that of adjacent road, and shall be so maintained (including topping up when necessary) until the end of the Defects Liability Period or until taken over for permanent reinstatement by the appropriate authority, whichever is sooner.

16) OTHER STRUCTURES IN THE PIPELINE

The Contractor shall carry out farther excavation as may be necessary to accommodate structures such as thrust blocks and valve chambers etc. Such excavation shall include for disposal of surplus material and, where appropriate, for backfilling around the structures.

17) EXISTING SERVICE

Where trench excavation is carried out close to or across the line of sewers, pipes, cables and other services etc, the Contractor shall, where necessary, provide temporary supports or slings and where such sewer, pipe, cable or other service is temporarily disturbed it shall be replaced that is in the scope of Contractor.

Where, in the opinion of the Employer's Engineer / PMC, construction of the pipeline cannot reasonably be carried out unless the sewer, pipe, cable or other service is permanently severed or permanently diverted or permanently supported by concrete he shall order the Contractor to undertake such work. The same shall be done without any extra cost, and cost of the same shall be deemed included in the Price Bid. No variation shall be payable.

Notwithstanding any relevant information furnished by the Employer's Engineer, the Contractor shall be responsible for ascertaining from his own inspection of the site and from the respective supply authorities and other public bodies the position of all mains, pipes and cables whether underground or overhead, within or near the site.

18) HEDGES, FENCES AND WALLS

Where the trench excavation crosses barriers such as hedges, fences and walls, the Contractor, as a temporary measure during construction of the pipeline, shall provide temporary fencing for any parts of such barriers as have had to be removed.

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After trench excavation has been reinstated, the Contractor shall carry out such work as the Employer's Engineer may order for permanent restoration of such barriers. The same shall be done without any extra cost, and cost of the same shall be deemed included in the Price Bid. No variation shall be payable.

19) CROSSING WATERCOURSES ETC.

Where the pipeline crosses rivers, culverts and other water-courses, the Contractor shall be deemed to have allowed for all the additional measures necessary for the proper construction of the pipeline at these crossings including maintaining the full flow of water across the trench.

20) DEWATERING/ DRAINAGE

All excavations should be kept free of water. Grading to the excavation should be such as to exclude rain/surface water draining into excavated areas. Any water in the excavated areas should be pumped out by Contractor, this should be continued until area is clear of water and up till foundation work is completed and backfilled.

Do not disturb excavated faces or stability of adjacent ground or structures during pumping. Pumped water should be discharged without flooding adjacent property outside the site. Sumps made for dewatering shall be clear of excavations and fill on completion.

21) BREAKING OF CONCRETE, BRICKWORK, BLOCKWORK AND STONE MASONRY

The Contractor shall demolish brickwork, blockwork, stone masonry or concrete either plain or reinforced, as indicated on the drawings/ as required for execution of works and cost of same to be deemed included in the Price Bid. The waste material shall be at once removed from the location and dumped at a suitable location or transported and disposed off as directed by the Employer's Engineer. The Contractor shall observe all precaution by way of necessary propping, strutting etc., to the satisfaction of the Employer's Engineer, to ensure that the adjacent framework is not damaged. Any damage to any adjacent framework, brickwork or blockwork resulting from the negligence of the Contractor shall be made good at the Contractor's cost, to the satisfaction of the Employer's Engineer. The same shall be done without any extra cost, and cost of the same shall be deemed included in the Price Bid. No variation shall be payable.

22) DISPOSAL OF EXCAVATED MATERIAL

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All excavated/demolished material shall be the property of Contractor. The disposal of excavated/demolished material shall be as per the Employer's Engineer orders otherwise, be at the Contractor's discretion but shall be so arranged as to suit the overall requirements for the construction of the works. The Contractor shall ensure that no excavated/demolished material which is suitable for and is required for re-use in the works is transported unless so ordered by the Employer's Engineer.

Excavated/demolished materials which are not required or are unsuitable for reuse in the work shall be disposed to any tipping location designated by the Employer's Engineer, all as specified. Material so deposited shall be shaped up or spread and levelled as directed by the Employer's Engineer. Any necessary work to provide access to the Employer's Engineer tips or other preliminary work in connection there with shall be carried out by the Contractor to the Approval of the Employer's Engineer.

23) INSPECTION OF WORKS BY THE EMPLOYER'S ENGINEER / PMC

When the specified levels or limits of excavation are reached, the Employer's Engineer / PMC will inspect the ground exposed, and if he considers that any part of the ground is by its nature unsuitable, he may direct the Contractor to excavate further. Such further excavation shall be refilled to the specified levels or limits with concrete, selected excavated material or selected imported material as directed by the Employer's Engineer.

Should the material forming the bottom of any excavation, while acceptable to the Employer's Engineer at the time of his inspection, subsequently become unacceptable to him due to exposure to weather conditions or due to flooding or have become puddle, soft, or loose during the progress of the works, the Contractor shall remove such damaged, softened or loosened material and excavate further by hand. Where ever works inspection is involved either Employer's Engineer / PMC shall do the same and shall be recorded and any procedural changes required for fulfilment of the system shall be done by the contractor at no extra cost.

24) BACK FILLING, GENERAL SITE GRADING & SAND FILLING

2.24.1. Fill Material

All fill material whether such material in brought from outside borrow areas/imported earth or excavation within the site, will be subject to Employer's Engineer's approval. Notwithstanding any approval given to the fill material or borrow areas from which fill materials is proposed to be brought, the Employer's Engineer reserves the right to reject such material which in his opinion either does not meet the specification requirements or is unsuitable for the purpose for which it is intended.

It shall be the Contractor's responsibility to locate suitable borrows areas for borrowing fill material. Such areas will be inspected by Employer's Engineer and approved before Contractor makes arrangement to borrow the fill material. The top

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soil which may contain vegetation, rubbish, slush etc. shall not be used. If requested by the Employer's Engineer, the Contractor shall arrange to have trial pits of specified dimensions and numbers dug at locations specified, for the Employer's Engineer to examine and nature and type of material likely to be obtained from the borrow areas.

The borrowed soil shall be generally granular, and non-cohesive. It shall consist of sand, silty and murrum, ordinary soil, gravel and shingle. Dredged material, free from clayey deposit, may be accepted. Fill material shall also be free from sulphate, salts, organic, foreign and other harmful or objectionable materials. Any material rejected by the Employer's Engineer shall be removed from the site immediately.

Roads, of a temporary nature, required to be constructed for access and for movement of men, materials, equipment, transport vehicles, vehicles carrying fill material, etc. to or over borrow areas and/or to or over areas on which fill has to be deposited shall be constructed by the Contractor and cost of same to be deemed included in the Price Bid. Such access roads shall be maintained in good condition during all seasons to ensure completion of the work according to the time schedule.

2.24.2. Backfilling

Excavated material used as backfilling to excavations or completed structures shall be free from rubbish, vegetation, clods and lumps and shall be approved by the Employer's Engineer. The approved materials shall be placed in layers, not exceeding 150 mm in depth before compaction and shall be compacted to a dry density not less than ninety-five percent of the maximum dry density obtained by the test in Part 7 of I.S. 2720 or to such higher density as it specified hereinafter. During compaction the backfill shall have a uniform moisture content equal to or a little above the optimum moisture content recorded in the LS Compaction Test. Where necessary, the Contractor shall adjust the moisture content of the backfill either by drying out or by adding water. After such drying out or adding of water the backfill shall be thoroughly mixed until the moisture content is uniform.

Should the material being placed as backfilling, while acceptable at the time of selection, become unacceptable to the Employer's Engineer due to exposure to weather conditions or due to flooding or have become puddled, soft or segregated during the progress of the works, the Contractor shall remove such damaged, softened or segregated material and replace it with fresh approved material.

The Contractor shall when placing the backfilling make due allowance for any settlement that may occur before the end of the Defects liability period as defined in the contract. Where necessary, the Contractor shall, during the Defects liability period and at or before the end of the Defects liability period, remove any excess material or make up any deficiency by backfilling to the specified levels. As a rule material to be

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backfilled shall be stacked temporarily as otherwise directed by the Employer's Engineer.

Compaction shall be carried out to achieve at least 95% of standard Proctor Dry Density at an optimum moisture content determined in accordance with the relevant I.S. specification. It shall be ensured however that the minimum compacted dry density is not less than 16 KN/cum. As the work progress field density tests shall be conducted on each layer at the rate of one test for every 1000 square metres to check whether desired compaction has actually been achieved.

2.24.3. General Site Grading

Site grading shall be carried out as directed by the Employer's Engineer. Excavation shall be carried out as specified in the specification. Filling and compaction shall, be carried out as specified under (ii) of this Clause, unless otherwise indicated below:

The approved material shall be placed in layers not exceeding 150 mm in depth before compaction and shall be compacted to a dry density not less than 95 percent of the maximum dry density obtained by the test in Part 7 of IS 2720.

To ensure that the fill has been compacted as specified, field and laboratory tests shall be carried out by the Contractor. Field compaction test shall be carried out at different stages of filling and also after the fill to the entire height has been completed. This shall hold good for embankments as well.

The Contractor shall protect the earth fill from being washed away by rain or damaged in any other way. Should any slip occur, the Contractor shall remove the affected materials and make good the slip.

The fill shall be carried out to such dimensions and levels as directed by the Employer's Engineer, after the stipulated compaction. The fill will be considered as inoculate if the desired compaction has not been obtained.

If specifically permitted by Employer's Engineer, compaction can be obtained by allowing loaded trucks conveying fill or other material to ply over the fill area. Even if such a method is permitted, it will be for the Contractor to demonstrate that the desired/specified compaction has been achieved. In order that the fill may be reasonably uniform layers. Traffic over the fill shall then be so routed to contact the area uniformly throughout.

If so specified, the rock as obtained from the excavation may be used for filling and levelling to indicate grades without further breaking. In such event, filling shall be done in layers not exceeding 20 cm approximately. After rock filling to the approximate level indicated above has been carried out, the void in the rockfill shall be filled with finer materials such as earth, broken stone etc. and the area flooded so that the finer fill material does not get washed out. Over the layer, so filled, a 100 mm

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thick mixed layer of broken material an earth shall be laid and consolidation carried out by a 12 tonnes roller. Not less than twelve passes of the roller shall be accepted before subsequent similar operations are taken up.

2.24.4. Sand filling below Plinth and Other Places

Backfilling shall be carried out with natural/machine sand at places as directed by the Employer's Engineer. The sand used shall be clean, medium grained and free from impurities. The filled-in sand shall be kept flooded with water for 24 hours to ensure maximum consolidation. Any temporary work required to contain sand under flooded condition shall be to the Contractor's account. The surface of the consolidated sand shall be dressed to the required level or slope. Construction of floors or other structures on sand fill shall not be started until the Employer's Engineer/ PMC has inspected and approved the fill.

3. CONCRETE AND ALLIED WORKS

1) GENERAL

The quality of materials and method and control of manufacture and transportation of all concrete work irrespective of mix, whether reinforced or otherwise, shall conform to the applicable portions of this specification.

The Employer's Engineer shall have the right to inspect the source/s of material/s, the layout and operation of procurement and storage of materials, the concrete batching and mixing equipment and the quality control system. Such an inspection shall be arranged, and Employer's Engineer approval obtained, prior to starting of concrete work.

2) MATERIALS FOR STANDARD CONCRETE

The ingredients to be used in the manufacture of concrete shall consist solely of Ordinary Portland Cement (OPC), clean sand, natural coarse aggregate, clean water and admixtures, if specifically called for on drawings or specifications, or to the approval of the Employer's Engineer/ PMC if conditions at site warrant its use.

3.2.1. Cement

Unless otherwise specified in the Specification or called for by the Employer's Engineer, cement shall be ordinary Portland cement (OPC-43 grade) Bags conforming to IS: 269 unless specifically defined. The use of bulk cement will be permitted only with the approval of the Employer's Engineer. Changing of brands or type of cement within the same structure should be avoided as far as possible.

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However cement for all works submerged under water shall be sulphur resistant cement as per IS 12330 latest version unless specifically defined. The use of bulk cement will be permitted only with the approval of the Employer's Engineer. Changing of brands or type of cement within the same structure should be avoided as far as possible.

Sample shall be tested at approved Laboratory at Contractor's cost from each lot of cement delivered at site.

The Contractor will have to make his own arrangements for the supply and storage of an adequate quantity of cement. Employer will not supply cement. It will be the responsibility of the Contractor to ensure adequate and proper storage and complete protection from dampness, contamination and minimize caking and false set. Cement bags shall be stored in a dry enclosed shed (storage under tarpaulins will not be permitted), well away from the outer walls, and insulated from the floor to avoid contact with moisture from the ground and so arranged as to provide ready access. Damaged or reclaimed or partly set cement will not be permitted to be used and shall be removed from the site. The storage arrangement shall be such there is no dead storage. Not more than 12 bags shall be stacked in any tier. The Employer's Engineer shall approve the storage arrangement. Consignments cement shall be stored as received and shall be consumed in the order of their delivery.

Cement held in storage for a period of ninety (90) days or longer shall be tested. Should at any time the Employer's Engineer have reasons to consider that any cement is defective, then irrespective of it origin, date of manufacture and/or manufacture's test certificate, such cement shall be tested immediately at the Contractor's cost at the approved laboratory and until the results of such tests are found satisfactory, it shall not be used in any work. The Contractor shall not be entitled to any claim of any nature on this account.

3.2.2.1. Aggregates

'Aggregate" in general designates both fine and coarse inert materials are used in the manufacture of concrete.
"Fine Aggregate" is aggregate most of which passes through 4.75 mm IS sieve.
"Coarse Aggregate" is aggregate most of which is retained on 4.75 mm IS sieve.

All fine and coarse aggregates proposed for use in the Works shall be subject to the Employer's Engineer approval and after specific materials have been accepted, the source of supply of such materials shall not be changed without prior approval of the Employer's Engineer.

Aggregates shall, except as noted above, consist of natural sands, crushed stone, machine sand, stone dust and gravel etc. from a source known to produce satisfactory aggregate for concrete and shall be chemically inert, strong, hard, durable against weathering, of limited porosity and free from deleterious materials that may cause corrosion of the reinforcement or may impair the strength shall such as to produce a

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dense concrete of specified strength and consistency that will work readily into position without segregation and shall be based on the "mix design" and preliminary tests on concrete specified later.

3.2.2.2. Sampling and Testing

Samples of the aggregates for mix design and determination of suitability shall be taken under the supervision of Employer's Engineer and delivered to the laboratory, well in advance of the scheduled placing of concrete. Records of tests which have been made on proposed aggregates and on concrete made from this source of aggregates shall be furnished to Employer's Engineer in advance of the work for use in determining aggregate suitability. The costs of all such tests, sampling, etc., shall be borne me by Contractor.

3.2.2.3. Storage of Aggregate

All coarse and fine aggregates shall be stacked separately in stock piles in the material yard near the work site in bins properly constructed to avoid inter mixing of different aggregates. Contamination with foreign material and earth during storage and while heaping the materials shall be avoided. The aggregate must be of specified quality not only at the time of receiving at site but more so at the time of loading into mixer. Rakers shall be used for lifting the coarse aggregates from bins or stockpiles. Coarse aggregate shall be piled in layers not exceeding 1.20 meters in height to prevent coning or segregation. Each layers shall cover the entire area of the stock pile before succeeding layers are started. Aggregates that have become segregated shall be rejected. Rejected material after remixing may be accepted, if subsequent tests demonstrate conformance with required gradation.

3.2.2.4. Specific Gravity

Aggregates having a specific gravity below 2.6 (saturated surface dry basis) shall not be used without special permission of the Employer's Engineer.

3.2.2.5. FINE AGGREGATE

Fine aggregate shall consist of natural or crushed sand conforming to I.S. 383. The sand shall be clean, sharp, hard strong and durable and shall be free from dust, vegetable substances, adherent coating, clay, alkali, organic matter, mica, salt, or other deleterious substances, which can be injurious to the setting qualities/ strength/durability of concrete.

a) **Machine-made Sand**
Machine-made sand will be acceptable, provided the constituent rock gravel composition shall be sound, hard, dense, non-organic, uncoated and durable against weathering.

b) **Screening and Washing**

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Sand shall be prepared for use by such screening or washing, or both, as necessary, to remove all objectionable foreign matter while separating the sand grains to the required size tractions.

c) Foreign Material Limitations

The percentage of deleterious substance in sand delivered to, the mixer shall not exceed the following:

Table 3.2.1 :

		Percent by weight	
		Uncrushed	Crushed
i)	Material finer than 75 micron I.S sieve	3.00	15.00
ii)	Shale	1.00	---
iii)	Coal and lignite	1.00	1.00
iv)	Clay lumps	1.00	1.00
v)	Total of all above substances including items (i) to (iv) for uncrushed sand and items (iii) and (iv) for Crushed sand	5.00	2.00

d) Gradation

Unless otherwise directed or approved by the Employer's Engineer, the grading of sand shall be within the limits indicated hereunder.

Table 3.1.2 :

	Percentage Passing for			
I.S. Sieve Designation	Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
10 mm	100	100	100	100
4.75 mm	90-100	90-100	90-100	95-100
2.36 mm	60-95	75-100	85-100	95-100
1.18 mm	30-70	55-90	75-100	90-100
600 micron	15-34	35-59	60-79	80-100
300 micron	5-20	8-30	12-40	15-50
150 micron	0-10	0-10	0-10	0-15

Where the grading falls outside the limits of any particular grading zone of sieves, other than 600 micron I.S. sieve, by total amount not exceeding 5 percent, it shall be regarded as falling within that grading zone. This tolerance shall not be applied to percentage passing the 600 micron IS. sieve or to percentage passing any other sieve size on the coarser limit of Grading Zone I or the finer limit of Grading Zone IV. Fine aggregates conforming to Grading Zone IV shall be used unless mix designs and preliminary tests shall show its suitability for producing concrete of specified strength and workability.

e) Fineness Modulus

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The sand shall have a fineness modulus of not less than 2.2 or more than 3.2. The fineness modulus is determined by adding the cumulative percentages retained on the following I.S. sieve sizes (4.75mm, 2.36mm, 1.18mm, 600micron, 300micron and 150micron) and dividing the sum by 100.

3.2.2.6. COARSE AGGREGATE

Coarse aggregate for concrete, except as noted above, shall conform to IS: 383. This shall consist of natural or crushed stone and gravel, and shall be clean, and free from elongated, flaky or laminated pieces, adhering coatings, clay lumps, coal residue, clinkers, slag, alkali, mica, organic matter or other deleterious matter.

a) **Screening and Washing**

Natural gravel and crushed rock shall be screened and/or washed for the removal of dirt or dust coating, if so directed by the Employer's Engineer.

b) **Grading**

Coarse aggregate shall be either in single size or graded, in both cases the grading shall be within the following limits :

Table 3.2.3 :

I.S Sieve Desig-nation	Percentage passing for single sized aggregate of nominal size					Percentage passing for Graded aggregate of nominal size			
	40 mm	20mm	16mm	12.5mm	10mm	40mm	20mm	16mm	12.5mm
63 mm	100	--	--	--	--	100	--	--	--
40 mm	85-100	100	--	--	--	95-100	100	--	--
20 mm	0-20	85-100	100	--	--	30-70	95-100	100	--
16 mm	--	--	85-100	100	--	--	--	90-100	--
12.5 mm	--	--	--	85-100	100	--	--	--	90-100
10 mm	0-5	0-20	0-30	0-45	85-100	10-35	25-55	30-70	40-85
4.75 mm	--	0-5	0-5	0-10	0-20	0-5	0-10	0-10	0-10
2.36 mm	--	--	--	--	0-5	--	--	--	--

The pieces shall be angular in shape and shall have granular or crystalline surfaces. Friable, flaky and laminated pieces, mica and shale, if present, shall be only in such quantities that will not, in the opinion of the Employer's Engineer, affect adversely the strength and/or durability of concrete. The maximum size of coarse shall be the maximum size specified above, but in no case greater than 1/4 the minimum thickness of the member, provided that the concrete can be placed without difficulty so as to surround all reinforcement thoroughly and fill the corners of the form. Plums above 160 mm and upto any reasonable size can be used in plain mass concrete work of large dimensions upto a maximum limit of 20% by volume of concrete when

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specifically approved by Employer's Engineer. For heavily reinforced concrete members, the nominal maximum size of the aggregate shall be 5 mm less than the minimum clear distance between the reinforcing main bars or 5 mm less than the minimum cover to the reinforcement whichever is smaller. The amount of fine particles occurring in the free state or as loose adherent shall not exceed 1% when determined by laboratory sedimentation tests as per I.S, 2386. After 24 hours immersion in water, a previously dried sample shall not have gained more than 10% of its oven dry weight in air, as determined by I.S. 2386.

c) Foreign Material Limitations

The percentage of deleterious substances in the aggregate delivered to the mixer shall not exceed the following:

Table 3.2.2 :

S.No.	Foreign Material	Percent by weight	
		Uncrushed	Crushed
i)	Material finer than 75 micron I.S Sieve	3.00	3.00
ii)	Coal and lignite	1.00	1.00
iii)	Clay lumps	1.00	1.00
iv)	Soft fragments	3.00	----
v)	Total of all the above substances	5.00	5.00

3) WATER

Water used for both mixing and curing, shall be free from injurious amounts of deleterious materials. Potable water is generally satisfactory for mixing and curing concrete.

In case of doubt, the suitability of water for making concrete shall be ascertained by the compressive strength and initial setting time test specified in I.S. 456. The sample of water for testing shall be typical of the water proposed to be used for concreting, due account being paid to seasonal variation. The sample shall not receive any treatment before testing other than that envisaged in the regular supply of water proposed for use in concrete. The sample shall be stored in a clean container previously rinsed out with similar water.

Average 28 day compressive strength of at least three 15 cm concrete cubes prepared with water proposed to be used shall not less than 90% of the average strength of three similar concrete cubes prepared with distilled water. The cubes shall be prepared, cured and tested in accordance with the requirements of I.S. 516.

The initial setting time of test block made with the appropriate test cement and the water proposed to be used shall not be less than 30 minutes and shall not differ by more than ±30 minutes from the initial setting time of control test block prepared with the appropriate test cement and distilled water. The test blocks shall be prepared and tested in accordance with the requirements of I.S. 4031.

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Where water can be shown to contain an excess of acid, alkali, sugar or salt, Employer's Engineer/ PMC may refuse to permit its use. As a guide, the following concentrations represent the maximum permissible values:

(a) To neutralize 200 ml, sample of water, using Phenolphthalein as indicator, it should not require more than 2 ml. of 0.1 Normal NaOH. The details of test shall be as given in I.S: 3025.

(b) To neutralize 200-ml. sample of water, using methyl orange, as an indicator should not require more than 10 ml. of 0.1 Normal HCL. The details of test shall be as given in I.S: 3025.

(c) Percentage of solids, when tested in accordance with the method indicated below, shall not exceed the following:

Table 3.3 :

Solids	Percent	Method of Test (Ref. to Cause No. In IS :3025)
Organic	0.02	10 and 11 (organic solids = total solids minus ignited residue)
Inorganic	0.30	11 (ignited residue)
Sulphates (as SO4)	0.05	20
Alkali Chloride (As Cl)	0.20	24
Suspended matter	0.20	12

4) CONTROLLED CONCRETE

All concrete in the works shall be "controlled concrete" as defined in IS 456, except for M7.5 and M10 for which nominal mix concrete shall be used. Whether reinforced or otherwise, all concrete works to be carried out under this specification shall be divide into the following classification:

Table 3.4 : MINIMUM COMPRESSIVE STRENGTH OF 15 CM. CUBES AT 7 AND 28 DAYS AFTER MIXING CONDUCTED IN ACCORDANCE WITH IS : 516

Class	Preliminary test N/mm2		Works test N/mm2		Maximum size of aggregate	Locations for use
	At 7 days	At 28 days	At 7 days	At 28 days		
M40	33.5	50.0	27.0	40.0	20	As indicated in the specifications or as required.
M35	30.0	44.0	23.5	35.0	20	-do-
M30	25.0	38.0	20.0	30.0	20	-do-
M25	22.0	32.0	17.0	25.0	20	-do-
M20	17.5	26.0	13.5	20.0	20	-do-
M15	13.5	20.0	10.0	15.0	20	-do-

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Notes: It shall be very clearly understood that whenever the concrete such M 20, etc. is specified it shall be Contractor's responsibility to ensure that minimum crushing strength stipulated for the respective grade of concrete is obtained at works.

Minimum cement content in the concrete used for liquid/ water retaining structure shall be 360 kg/m3 for 20 mm downgraded aggregate.

5) MIX DESIGN

a) General

This is to investigate the grading of aggregates, water cement ratio, workability and the quantity of cement required to give preliminary and works cubes of the minimum strengths specified. The proportions of the mix shall be determined by weight. Adjustment of aggregate proportions due to moisture present in the aggregate shall be made.

Determination of mix proportions shall be carried out according to "Recommended Guidelines for Concrete Mix Design' conforming to IS: 10262-2015.

Whenever there is change either in required strength of concrete, or water-cement ratio or workability or the source of aggregates and/or cement, preliminary tests shall be repeated to determine the revised proportions of the mix to suit the altered conditions. While designing mix proportions, over-wet mixes shall always be avoided.

While fixing the value for water/cement ratio for preliminary mixes, assistance maybe derived from IS: 456.

b) Preliminary Tests

Test specimens shall be prepared with at least two different water/cement ratios for each class of concrete, consistent with workability required for the nature of the work.

The materials and proportions used in making preliminary tests shall be similar in all respects to those to be actually employed in the works as the object of these tests is to determine the proportions of cement, aggregates and water necessary to produce concrete of required consistency and to give the specified strength. It will be Contractor's sole responsibility to carry out these tests and he shall therefore furnish to Employer's Engineer a statement of proportions proposed to be used for the various concrete mixes. For preliminary tests, the following procedure shall be followed:

Materials shall be brought to the room temperature and all materials shall be in a dry condition. The quantities of water, cement and aggregates for each batch shall be determined by weight to an accuracy of 1 part in 1000 parts.

c) Mixing Concrete

It shall be done by hand or in a small batch mixer as per I.S. 516 in such a manner as to avoid loss of water. The cement and fine aggregate shall first be mixed dry until the mixture is uniform in colour. The coarse aggregate shall then be added, mixed and water added and the whole batch mixed thoroughly for a period of not less than two minute until the resulting concrete is uniform

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in appearance. Each batch of, concrete shall be of such a size as to leave about 10% excess concrete, after moulding the desired number of test specimens.

d) Consistency

The consistency of each batch of concrete shall be measured immediately after mixing, by the slump test in accordance with I.S.1199. If in the slump test, care is taken to ensure that no water or other material is lost, the material used for the slump test may be remixed with the remainder of the concrete for making the specimen test cubes. The period of re-mixing shall be as short as possible yet sufficient to produce a homogeneous mass.

e) Size of Test Cubes

Compression tests of concrete cubes shall be made as per I.S.516 on 15 cm. cubes. Each mould shall be provided with a metal base plate having a plain surface so as to support the mould during filling without leakage.

The base plate shall be preferably attached to the mould when assembled shall be positively and rigidly held together. Before placing concrete, the mould and base plate shall be cleaned and oiled. The dimensions and internal faces of the mould shall be accurate within the following limits:

Height and distance between the opposite faces of the mould shall be of specified size +0.2 mm. The angle between the adjacent internal faces and between internal faces and top and bottom faces of mould shall be 90 +_ 0.5°. The interior faces of the mould shall be plain surface with a permissible variation of 0.03 mm.

f) Compacting

Concrete test cubes shall be moulded by placing fresh concrete in the mould and compacted as specified in I.S. 516.

g) Curing

Curing shall be as specified in I.S.516. The cubes shall be kept in moist air of at least 90% relative humidity at a temperature of 27° ±_2° C for 24 hours ±1/2 hour from the time of adding water to the dry ingredients. Thereafter they shall be removed from the moulds and kept immersed in clean, fresh water and kept at 27° ± 2° C temperature "until required for test. Curing water shall be renewed every seven days. A record of maximum temperatures at the place of-storage of the cubes shall be maintained during the period they remain in storage.

h) Testing of Specimens

The strength shall be determined based on not less that five cube test specimens for each age and each water cement ratio. All these laboratory test results shall be tabulated and furnished to the Employer's Engineer. The test results shall be accepted by the Employer's Engineer if the average compressive strength of the specimens tested is not less than the compressive strength specified for the age at which specimens are tested subject to the

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condition that only one out of the five consecutive tests may give a value less than the specified strength for that age. The Employer's Engineer may direct the Contractor to repeat the tests if the results are not satisfactory and also make such changes as he considers necessary to meet the requirement specified. All the tests shall be conducted by the Contractor at his own cost in approved laboratory.

6) PROPORTIONING, CONSISTENCY, BATCHING AND MIXING OF CONCRETE

a) Proportioning

(i) Aggregate

The proportions which shall be decided by conducting preliminary tests shall be by weight. These proportions of cement, fine and coarse aggregates shall be maintained during subsequent concrete batching by means of weigh batchers conforming to I.S. 2722 capable of controlling the weights within one percent of the desired value. Except where it can be shown to the satisfaction of the Employer's Engineer that supply of properly graded aggregate of uniform quality can be maintained over the period of work, the grading of aggregate shall be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportions.

The different sizes shall be stocked in separate stock piles. The grading of coarse and fine aggregate shall be checked as frequently as possible, as determined by the Employer's Engineer, to ensure maintaining of grading in accordance with the samples used in preliminary mix design. The material shall be stock piles well in advance of use.

(ii) Cement

Cement shall be measured by weight.

(iii) Water

Only such quantity of water shall be added to the cement and aggregates in the concrete mix as to ensure dense concrete, specified surface finish satisfactory workability, consistent with the strength stipulated for each class of concrete. The water added to the mix shall be such as not to cause aggregation of materials or the collection of excessive free water on the surface of the concrete.

(iv) Definition of Water/ Cement Ratio

The water cement (W/C) ratio is defined as the weight of water in the mix (including the surface moisture of the aggregates) divided by the weight of cement in the mix.

(v) Water/ Cement Ratio

The actual water cement ratio to be adopted shall be determined in each instance by the Contractor and approved by the Employer's Engineer.

(vi) Proportioning by Water/ Cement Ratio

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The W/C ratio specified for use by the Employer's Engineer shall be maintained. The Contractor shall determine the water content of the aggregates as frequently as directed by the Employer's Engineer as the work progresses and as specified in I.S. 2386 (Part ID) and the amount of mixing water added at the mixer shall be adjusted as directed by the Employer's Engineer so as to maintain the specified W/C ratio. To allow for the variation in weight of aggregates due to variation in their moisture content, suitable adjustments in the weights of aggregates shall also be made,

b) Consistency and Slump

Concrete shall be of consistency and workability suitable for the conditions of the job. After the amount of water required is determined, the consistency of the mix shall be maintained throughout the progress of the corresponding parts of the work and approved tests e.g. slump tests, compacting factor tests, in accordance with I.S.1199, shall be conducted from time to time to ensure the maintenance of such consistency unless otherwise instructed by the Employer's Engineer.

c) Batching and Mixing of Concrete

The materials and proportions of concrete materials as established by the preliminary tests for the mix designs shall be rigidly followed for all concrete on the Works and shall not be changed except when specifically permitted by the Employer's Engineer.

Concrete shall be produced only by weigh batching the ingredients. The mixer and weigh batchers shall be maintained in clean, serviceable condition. The accuracy of weigh batchers shall be periodically checked. They shall be set up level on a firm base and the hopper is empty. Fine and coarse aggregates shall be weighed separately. Volume batching will not be permitted. However, the Employer's Engineer may permit volume batching by subsequent conversion of the weights of the aggregate into their equivalent volumes knowing their bulk densities, only in the case of small and less important pours involving weigh batching are not likely to be taken up. Concrete shall be of strength stipulated in the respective items. All concrete shall be mixed in mechanically operated batch mixers complying with I.S.1791 and of the approved make with suitable provision for correctly controlling the water delivered to the drum. The quantity of water entering the drum shall be checked with the reading of the gauge or valve setting, when starting a job. The test should be made while the mixer is running. The volume of the mixed material shall not exceed the manufacturer's rated mixer capacity. The batch shall be charged into the mixer so that some water will enter the drum in advance of cement and aggregates. All water shall be in the drum by the end of the first 15 seconds of the specified mixing time.

Each batch shall be mixed until the concrete is uniform in colour, for a minimum period of two minutes after all the materials and water are in the drum. The entire contents of the drum shall be discharged in one operation before the raw materials for the succeeding batches are fed into the drum. Each time the work stops, the mixer shall be cleaned out and when next

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commencing the mixing, the first batch shall have 10% additional cement to allow for sticking in the drum.

7) MIX DESIGN REINFORCED CONCRETE – M15, M20, & M30,

The works under this head covers all activities including raw materials, transportation to site, for all Reinforced Cement Concrete grades which shall be mix design as specified in General Specifications. In case WPC is required to be added (if specified), same shall conform with specifications in all respects. Admixtures, as specified in, shall be added, if directed by Employer's Engineer depending on grade of concrete and construction requirements without any extra cost implication. Minimum M 25 grade for buildings, Manholes and Drains, whereas M-30 grade for Water Retaining Structures such as tanks, reservoir, Treatment plant units, pump sump etc. shall be used, no grade below the said is permissible.

Only Natural sand is allowed, no crushed sand is permissible

Sulphur Resistant cement to be used in construction of Septic Tanks, RCC manholes, Sewage Pits etc, where there are gases such as H2S in contact with Concrete.

Contractor shall comply with all testing requirements as specified in General Specifications for raw materials and concrete (for all grades of concrete).

NOMINAL MIX CONCRETE – M10
Nominal mix concrete, used in plain concrete works, shall be of grade M10. The Nominal mix concrete shall conform to the requirements of General specifications in all respects.

8) ADMIXTURES

Admixtures may be used in concrete where required, only with the approval of the Employer's Engineer based upon evidence that, with the passage of time, neither the compressive strength not its durability reduced.

Calcium chloride shall not be used for accelerating set of the cement for concrete containing reinforcement, or embedded steel parts. When calcium chloride is permitted to be used, such as in mass concrete works, it shall be dissolved in water and added to the mixing water in an amount not to exceed 1 ½ % of the weight of the cement in each batch of concrete. When admixtures are used, the designed concrete mix shall be corrected accordingly. Admixtures shall be used as per manufacturer's instructions and in the manner and with the control specified by the Employer's Engineer.

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9) Air Entraining Agents

Neutralized vinsol resin or any other approved air entraining agent may be used to produce the specified amount of air in the concrete mix and these agents shall conform to the requirements of ASTM standard 6-20: Air entraining admixtures for concrete. The recommended total air content of the concrete is 4% ± 1%. The method of measuring air content shall be as per IS: 1199.

10) Water Reducing Admixtures

Water reducing lignosulfonate admixture may be added in quantities approved by the Employer's Engineer. The admixtures shall be added in the form of a solution.

11) Retarding Admixtures

Retarding agents may be added to the concrete mix in quantities approved by the Employer's Engineer.

12) Water-Proofing Compound

As directed by the Employer's Engineer, the Contractor shall use approved waterproofing compound duly approved by Employers Engineer. In the reinforced concrete works. The quantity to be used shall be two percent by weight of cement or shall be in accordance with the manufacturer's instructions subject however to the approval of the Employer's Engineer. The compound shall not contain calcium chloride and shall conform to IS: 2645.

13) Mixing water proofing compound with cement.

The compound should be mixed thoroughly with the cement by hand before the cement is mixed with aggregate. Thorough mixing is essential. The two materials should be heaped on a mixing board thoroughly turned over several times with a shovel and finally passed through a fine sieve. If labour is unsatisfactory the sieving should be done twice to ensure maximum dispersal of the compound throughout the cement.

14) Mixing the concrete

The mixture of water proofing compound and cement should then be added to the aggregate, the dry materials turned over twice and the correct amount of water then added through a rose spray, A further thorough mixing by spade should immediately follow. Only the minimum quantity of water necessary to give workability should be used such that it will make the concrete just sufficiently plastic for purposes of placing and thorough consolidation without affecting its strength.

15) Corrosion Inhibitors

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Corrosion Inhibitors shall be added to concreting for water retaining structures in contact with water as well for use of concrete to embed the structural steel.

16) Concrete in Alkali Soils and Alkaline Water

Where concrete is vulnerable to attack from alkali salts or alkaline water, special cements containing low amount of tri-calcium aluminate shall be used, if so specified or directed. Such concrete shall have a minimum 28 days compressive strength of 25 N/mm2 and shall contain not less than 3.7 KN of cement per cubic metre of concrete in place. If specified, additional protection shall be obtained by the use of chemically resistant stone facing or a layer of Plaster of Paris covered with suitable fabric, such as jute thoroughly impregnated with tar.

17) Preparation Prior to Concrete Placement & Final Inspection and Approval

Before the concrete is placed in position, the insides of the formwork shall be inspected to see that they have been cleaned and oiled. Temporary openings shall be provided to facilitate inspection, especially of bottoms of columns and wall forms, to permit removal of saw dust wood shavings, binding wire, rubbish, dirt, etc. Openings shall be placed or holes drilled so that these materials and water can be removed. Such openings/holes shall be later suitably plugged. The various trades shall be permitted ample time to install drainage and plumbing lines, floor and trench drains, conduits, hangers, anchors, inserts, sleeves, bolts, frames and other miscellaneous embedded to be cat in the concrete as specified or required or as is necessary for the proper execution of the work.

All embedded parts, inserts, etc., supplied by the Corporation or the Contractor shall be correctly positioned and securely held in the forms, to prevent displacement during depositing and vibrating of concrete.

All anchor bolts shall be positioned and kept in place with the help of properly manufactured templates unless specifically waived in writing by the Employer's Engineer.

Slots, openings, holes, pockets, etc., shall be provided in concrete work in the positions specified or required or as directed by the Employer's Engineer.

Reinforcement and other items to be cast in concrete shall have clean surfaces that will not impair bond. Prior to concrete placement all work shall be inspected and approved by the Employer's Engineer and if found unsatisfactory, concrete shall not be poured until all defects have been corrected.

Approval by the Employer's Engineer of any and all materials and work as stated herein shall not relieve the Contractor from his obligation to produce finished concrete in accordance with the requirements of the specification.

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No concrete shall be placed in wet weather or on a water covered surface. Any concrete that has been washed by heavy rains shall entirely removed, if there is any sign of cement and sand having been washed away from the concrete mixture. To guard against damage which may be used by rains, the works shall be covered with tarpaulins immediately after the concrete has been placed and compacted before leaving the work ended. Any water accumulating on the surface of the newly placed concrete shall be removed by approved means and no further concrete shall be placed thereon until such is removed. To avoid flow of water over/around freshly placed concrete, suitable drains .and sumps shall be provided.

18) Bonding Mortar

Immediately before concrete placement begins, prepared surfaces except formwork, which will come in contact with the concrete to be placed, shall be covered with a bonding mortar as specified.

19) Transportation

a) General

All buckets, containers or conveyors used for transporting concrete shall be mortar-tight. Irrespective of the method of transportation adopted, concrete shall be delivered with the required consistency and plasticity without segregation or loss of slump. However, chutes shall not be used for transport of concrete without the written permission of the Employer's Engineer and concrete shall not be re-handled before placing.

b) Re tempered or Contaminated Concrete

Concrete must be placed in its final position before it becomes too stiff to work. On no account, water shall be added after the initial mixing. Concrete which has become stiff or has been contaminated with foreign materials shall be rejected and disposed off as directed by the Employer's Engineer.

c) Cleaning of Equipment

All equipment used for mixing, transporting and placing of concrete shall be maintained in clean condition. All pans, buckets, hoppers, chutes, pipelines and other equipment shall be thoroughly cleaned after each period of placement.

20) Procedure for Placing of Concrete

a) Employer's Engineer Approval for Equipment & Methods

Before any concrete is placed, the entire placing programme, consisting of equipment, layout, proposed procedures and methods shall be submitted to the Employer's Engineer for approval if so demanded by the Employer's Engineer and no concrete shall be placed until Employer's Engineer approval has been received equipment for conveying concrete shall be of such size and

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design as to ensure a practically continuous flow of concrete during depositing without segregation of materials, considering the size of the job and placement location.

b) Time Interval between Mixing and Placing

Concrete shall be placed in its final position before the cement reaches its initial set and concrete shall normally be compacted in its final position within Ninety minutes of leaving the mixer, and once compacted it shall not be disturbed.

c) Avoiding Segregation

Concrete shall in all cases, be deposited as nearly as practicable directly in its final position and shall not be re-handled or caused to flow in a manner which will cause segregation, loss of materials, displacement of reinforcement, shuttering or embedded inserts, or impair its strength. For locations where direct placement is not possible, and in narrow forms, the Contractor shall provide suitable drop and "Elephant Trunks" to confine the movement of concrete. Special care shall be taken when concrete is dropped from a height, especially if reinforcement is in the way, particularly in columns and thin walls.

d) Placing of Manual Labour

Except when otherwise approved by the Employer's Engineer, concrete shall be placed in the shuttering by shovels or other approved implements and shall not be dropped from a height more than 1.0 m or handled in a manner which will cause segregation.

e) Placing by Mechanical Equipment

The following specification shall apply when placing of concrete by use of mechanical equipment is warranted considering the nature of work involved.

The control of placing shall begin at the mixer discharge. Concrete shall be discharge by a vertical drop into the middle of the bucket or hopper and the principle of a vertical discharge of concrete shall be adhered to throughout all stages of delivery until the concrete comes to rest in its final position.

i) Type of Buckets

Central-bottom-dump buckets of a type that provides for positive regulation of the amount and rate of deposition of concrete in all dumping positions, shall be employed.

ii) Operation of Bucket

In placing concrete in large open areas, the bucket shall be spotted directly over the position designated and then lowered for dumping. The open bucket shall clear the concrete already in place and the height of drop shall not exceed 1.0 m. the bucket shall be opened slowly to avoid high vertical bounce. Dumping of buckets on the swing or in any manner which results in separation if ingredients or disturbance of previously placed concrete will not be permitted.

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f) Placement in Restricted Forms

Concrete placed in restricted forms by barrows, buggies, cars, short chutes or hand shoveling shall be subject to the requirement for vertical delivery of limited height to avoid segregation and shall be deposited as nearly as practicable in its final position.

g) Chuting

Where it is necessary to use transfer chutes, specific approval of Employer's Engineer / PMC must be obtained to type, length, slopes, baffles, vertical terminals and timing of operations. These shall be so arranged that an almost continuous flow of concrete is obtained at the discharge end without segregation. To allow for the loss of mortar against the sides of the chutes, the first mixes shall have less coarse aggregate. During cleaning of chutes, the waste water shall be kept clear of the forms. Concrete shall not be permitted to fall from the end of the chutes by more than 1.0 m. chutes, when approved for use, shall have slopes not flatter than 1 vert : 3 horiz. And not steeper than 1 vert : 2 horiz. Chutes shall be of metal or metal lined and of rounded cross section. The slopes of all chute sections shall be approximately the same. The discharge end of the chutes shall be maintained above the surface of the concrete in the forms.

h) Placing by Pumping / Pneumatic Placers

Concrete may be conveyed and placed by mechanically operated equipment e.g. pumps or pneumatic placers only with the written permission of the Employer's Engineer. The slump shall be held to the minimum necessary for conveying concrete by this method.

When pumping is adopted, before pumping of concrete is started, the pipeline shall be lubricated with one or two batches of mortar composed of one-part cement and two parts sand. The concrete mix shall be specially designed to suit pumping. Care shall be taken to avoid stoppages in work once pumping has started.

When a pneumatic placer is used, the manufacturer's advice on layout of the pipeline shall be followed to avoid blockages and excessive wear. Restraint shall be provided at the discharge box to cater for the reaction at this end.

Manufacturer's recommendations shall be followed regarding concrete quality and all other related matters when pumping/ pneumatic placing equipment is used.

i) Concrete in Layers

Concreting, once started, shall be continuous until the pour is completed. Concrete shall be placed in successive horizontal layers of uniform thickness ranging from 15 cm to 90 cm as directed by Employer's Engineer. These shall be placed as rapidly practicable to prevent the formation of cold joints or places of weakness between each succeeding layer within the pour. The thickness of each layer shall be such that it can be deposited before the previous layer has stiffened. The bucket loads or other units of deposit shall be

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spotted progressively along the face of the layer with such overlap as will facilitate spreading the layer to uniform depth arid texture with a minimum of shovelling. Any tendency to segregation shall be corrected by shovelling stones into mortar rather than mortar on to stones. Such a 'condition' shall be corrected by redesign of mix or other means, as directed by the Employer's Engineer.

j) Bedding of Layers

The top surface of each pour and bedding planes shall be approximately horizontal unless otherwise instructed.

k) Compaction

Concrete shall be compacted during placing, with approved vibrating equipment until the concrete has been consolidated to the maximum practical density, is free of pockets of coarse aggregate fits tightly against all form surfaces, reinforcement an embedded fixtures. Particular care shall be taken to ensure that all concrete placed against the form faces and into comers of forms or against hardened concrete at joints is free from voids or cavities. The use of vibrators shall be consistent with the concrete mix and caution exercised not to over vibrate the concrete to the point that segregation results.

l) Type of Vibrators

Vibrators shall conform to IS specifications. Type of vibrator to be used shall depend on the structure where concrete is to be placed. Shutter vibrators to be effective, shall be firmly secured to the formwork which must be sufficiently rigid to transmit the vibration and strong enough not to be damaged by it. Immersion vibrators shall have "no load" frequency, amplitude and acceleration as per IS: 2505 depending on the size of the vibrator. Immersion vibrators in sufficient numbers and each of adequate size shall be used to properly consolidate all concrete. Tapping or external vibrating of forms by hand tools or immersion vibrators will not be permitted.

i) Use of Vibrators

The exact manner of application and the most suitable machines for the purpose must be carefully considered and operated by experienced men. Immersion vibrators shall be inserted vertically at points not more than 450 mm apart and withdrawn when air bubbles cease to come to the surface. Immersion vibrators shall be withdrawn very slowly. In no case shall immersion vibrators be used to transport concrete inside the forms. Particular attention shall be paid to vibration at the top of a lift e.g. in a column or wall.

ii) Melding successive Batches

When placing concrete in layers, which are advancing horizontally as the work progresses, great care shall be exercised to ensure adequate vibration, blending and melding of the concrete between the succeeding layers.

iii) Penetration of Vibrator

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The immersion vibrator shall penetrate the layer being placed and also penetrate the layer below while the under layer is still plastic to ensure good bond and homogeneity between the two layers and prevent the formation of cold joints.

iv) Vibrating against Reinforcement
Care shall be taken to prevent contact of immersion vibrators against reinforcement steel. Immersion vibrators shall not be allowed to come in contact with reinforcement steel after start of initial set. They shall also not be allowed to come in contact with forms or finished surfaces.

v) Use of Form Attached Vibrators
Form attached vibrator shall be used only with specific authorization of the Employer's Engineer.

vi) Use of Surface Vibrators
The use of surface vibrators will not be permitted under normal conditions. However, for thin slabs, such as highways, runways and similar construction, surface vibration by specially designed vibrators, may be permitted, upon approval of Employer's Engineer.

vii) Stone Pockets and Mortar Pondages
The formation of stone pockets or mortar pondages in corners and against faces of forms shall not be permitted. Should these occur, they shall be dug out, reformed and refilled to sufficient depth and shape for through bonding, as directed by the Employer's Engineer.

m) Placement Interval
Except when placing with slip forms, each placement of concrete in multiple lift work, shall be allowed to set for at least 24 hours after the final set of concrete and before the start of a subsequent placement.

n) Special Provision in Placing
When placing concrete in walls with openings, in floor of integral slab and beam construction and other similar conditions, the placing shall stop when the concrete reaches the top of the opening in walls or bottom horizontal surface of the slab, as the case may be. Placing shall be resumed before the concrete in place takes initial set, but not until it has had time to settle as determined by the Employer's Engineer.

o) Placing Concrete through Reinforcing Steel
When placing concrete through reinforcing steel, care shall be taken to prevent segregation of the coarse aggregate. Where the congestion of steel makes placing difficult, it may be necessary to temporarily move the top steel aside to get proper placement and restore reinforcing steel to design position and the Employer's Engineer approval shall be obtained prior to adopting this method.

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p) Bleeding

Bleeding or free water on top of concrete being deposited into the forms, shall be cause to stop the concrete pour and the conditions causing this defect corrected before any further concreting is resumed.

21) BONDING OF NEW AND OLD CONCRETE

3.21.1. General

Epoxy resins may be used to bond fresh concrete to concrete that is fully cured, to give a monolithic bond capable of transmitting high stresses when traditional bonding agents such as cement slurry cannot always be relied upon to provide good adhesion which is particularly the case when large areas are involved.

The formulation shall be applied to a suitably prepared concrete substrata and the fresh concrete poured as soon as possible, but always during the 'open time' of the adhesive. Material used shall be of best quality and approved by the Employer's Engineer. Manufacturer's instruction shall be followed in all respects. Preferably an Acrylic emulsion cement modifier shall be used.

3.21.2. Application

i) Preparation of the Substrata

To obtain good adhesion it is necessary to have a clean and sound substrata. Preparation can be carried out using a variety of techniques including chemical treatment and mechanical methods such as grinding, milling abrading, planning and sand blasting. Dust and loose particles resulting from the pre-treatment should be removed by vacuum cleaning or oil-free air blast.

ii) Mixing

The resin and hardener should be thoroughly mixed before mixing in the dry filler. The mixed, ready to use adhesive should not contain lumps of unwetted filler and should be of a uniform colour. For a total weight of 1 kilogram or less, hand mixing should be sufficient. For quantities in excess of 1 kilogram, the use of a mechanical mixer is recommended.

iii) Pot life and 'Open Time'

The pot life is the period during which the ready to use Araldite based formulation must be applied. After this period the mix can no longer be worked and will have begun to set in its container. The table below indicates the pot life at different temperatures:

Table 3.21.1 :

Max. temperature 0C	Pot life in minutes
25	90
30	60
35	45

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The 'open time' is the maximum period of time allowable between application of the adhesive and pouring the fresh concrete. Exceeding the 'open time' would result in considerably reduced adhesion.

The adhesive should be applied to the pre-treated substrata as soon as the components have been mixed and fresh concrete poured immediately afterwards.
Accurate knowledge of the 'open time' is essential in case the work in interrupted.
Table 3.21.2 :

Substrate temperature 0C	Open Time
35	30 Minutes
30	1 Hour
25	1.75 Hours
23	3 Hours

In all cases the adhesives shall be applied immediately after mixing. Any delay between mixing and application will reduce the 'open time'. Fresh concrete must be poured before the adhesive begins to gel. New to old concrete bonding is not recommended at temperatures below 5°C as adequate curing cannot be assured under these circumstances.

iv) Methods of Application
The shape and size of the concrete structure will determine the method of application used. The adhesive may be applied by hand using brushes, brooms or any other suitable applicator.

v) Suitability of the Fresh Concrete
Best results are obtained when the water/cement ratio of the new concrete is as low as is practicable.

vi) Coverage
One kilogram of the mixed adhesive including hardeners and thinner covers an area of 2.3 sq. metres when applied with a stiff nylon bristle brush. However, the coverage is very much dependent on the finish in the concrete.

3.21.3. Handling Precautions

Epoxy resins can cause irritation of the skin of the persons if incorrectly handled. Certain safety precautions must therefore be observed and those handling the resins and hardeners should be given suitable instructions. Those working with epoxy resins should, above all, be instructed that personal cleanliness at the place of work is essential. The resin and hardener should not be allowed to come into direct contact with the skin. The most effective protection is achieved by wearing rubber or polythene gloves, the later having the advantage that they can be replaced when dirty. They are most pleasant to wear if cotton gloves are worn underneath. Parts of the skin which have come into contact with the resin or hardener should be washed

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with lukewarm water and a mild soap. Special cleaning creams have also proved to be highly suitable.

4. CONSTRUCTION JOINTS

A construction joint is defined as a joint in the concrete introduced for convenience in construction at which special measures are taken to achieve subsequent continuity without provision for further relative movement.

All the drawings submitted for the Employer's Engineer approval shall indicate position of all construction joints and lifts. No concreting shall be started until the Employer's Engineer has approved the method of placing, the positions and form of the construction joints and lifts. The construction joints shall be so located as not to impair the strength of the structure. Rebates, keys or notches shall be formed, and water stops inserted as the Employer's Engineer may require. The position of construction joints and the size of the formwork panels shall be so coordinate that where possible the line of any construction joints coincides with the line of a formwork joint and that in any case all construction joint lines and formwork joint lines appear as a regular and uniform series. For all exposed horizontal joints and purposely inclined joints, a uniform joint shall be formed with a batten of approved dimensions to give a straight and neat joint line.

Concrete placed to form the face of a construction joint shall have all laitance removed and the aggregate exposed prior to the placing of fresh concrete. The laitance shall wherever practicable be removed by spraying the concrete surface with water under pressure and brushing while the concrete is still green. Where the laitance cannot be removed while the concrete is still green the whole of the concrete surface forming part of the joint shall be hacked to expose the aggregate. Where aggregate is damaged during hacking it shall be removed from the concrete face by further hacking. All loose matter shall be removed and the exposed surface thoroughly cleaned by wire brushing, air blasting or washing, leaving the surface clean and damp. Immediately before fresh concrete is placed a 12 mm thick layer of sand/ cement mortar mixed in the same proportions as in the concrete shall be spread in the horizontal face of the construction joint. A drier mix shall be used for the top lift of horizontal pours to avoid laitance. The new concrete shall be well worked against the prepared face before the mortar sets. Special care shall be taken to obtain through compaction and to avoid segregation of the concrete along the joint plain.

5. MOVEMENT JOINTS

Movement joints are defined as all joints intended to accommodate relative movement between adjoining parts of a structure, special provision being made where necessary for maintaining the water tightness of the joint. The Contractor shall comply with the instructions of manufacturers of proprietary jointing materials and shall, if required by the Employer's Engineer, demonstrate that the jointing materials can be applied satisfactorily.

The Contractor shall show locations of all movement joints and details thereof on drawings submitted for the Employer's Engineer approval.

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The surface of set concrete in a movement joint shall, as shown on the Drawings, be painted with two coats of bituminous paint and new concrete shall be placed against it only when the paint is dry. Expansion joints shall be formed by a separating strip of approved performed joint filler. Caulking grooves shall be provided. At all joints where a caulking groove is formed, immediately prior to caulking, the groove shall be wire brushed and loose material removed and blown out by compressed air. After the groove has dried, it shall be primed and caulked with approved sealing compound applied in accordance with the manufacturer's instructions. At all caulked joints, the face of the caulking strip and a 50 mm width of concrete on either side shall be painted with two coats of paint having the same base as the sealing compound.

6. WATER STOPS

At all vertical construction joints in walls of water retaining structures and all expansion joints in the water retaining structures and wherever specified or directed by the Employer's Engineer, water stops shall be provided. The water stops shall be of synthetic grade rubber and shall be as follows:

i)	Tensile strength not less than	20 N per sq.mm
ii)	Elongation at break not less than	500%
iii)	Modulus at 300% elongation	5.1 N per sq.mm
iv)	Specific gravity	1.12
v)	Compression set / constant deflection percent of original deflection at 700C for 22 hrs.	24% max.
vi)	Change in weight water immersion (2 days at 700C)	1.6% max.
vii)	Tensile strength and elongation at break as % of original, after oxygen pressure test 48 hours, 700C, 21.1 kgf per sq.cm before ageing	
	Tensile strength	85% min.
	Elongation at break	83% min.

Water stops shall not be exposed to direct sunlight for long periods. Before being concreted, water stops shall be cleaned of all foreign materials. Wherever provided, water stops shall be placed in such a manner that they are embedded in the adjacent sections of the panels for equal width.

The storage, fixing in position, splicing of water stops shall be as per manufacturer's instructions.

Water stops shall be fully supported in the form work, free of nails and clear of reinforcement and other fixtures. Damaged water stops shall be replaced and during concreting care shall be taken to place concrete so that water stops do not bend or distort

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The different type of water stops to be used in liquid retaining structures shall be as follows:

Table 5.0 :

S. No.	Type of Joint	Type of Water Stops
1.	Partial / complete contraction joint in walls and slabs	150 mm wide, ribbed with hollow centre bulb and 5 mm minimum thickness
2.	Expansion joints in walls and slabs	225 ram wide, ribbed with hollow centre bulb and 9 mm minimum thickness
3.	Construction joint in raft	225 mm wide, ribbed with hollow centre bulb and 5 mm minimum thickness
4.	Construction joint in wall	150 mm wide, ribbed with hollow centre bulb and 5 mm minimum thickness
5.	Partial/ complete contraction joint in raft	225 mm wide, ribbed with hollow centre bulb and 5 mm minimum thickness
6.	Expansion joint in raft	225 mm wide, ribbed with hollow centre bulb and 5 mm minimum thickness

7. JOINT FILLERS

Joint fillers shall be of durable, compressible, and non-extruding material. The joint filler shall be thermocole TF quality of thickness 25 mm. The side face of reinforced concrete member shall be thoroughly cleaned with wire brush and 85/25 industrial grade hot bitumen, conforming to IS: 702 shall be applied uniformly over the surface at the rate of 1.5 kg/sq.m.

Thermocol boards (TF quality) of 25 mm thickness shall be stuck means of the same grade of hot bitumen. The joints of the boards shall be sealed with bitumen. Holes in joint filler to accommodate the dowel bars shall be accurately done to produce a sliding fit on the dowel bars.

8. BITUMIN PAINT

The material shall be of the best quality unpigmented bituminous base paint of such a composition as to satisfy the requirements of IS: 9862 where total volatile matter contained in the paint shall not exceed 55% by weight.

At least 95% of the solid materials shall be soluble, in carbon di-sulphide or in benzene, and the closed flash point as determined in Abel's apparatus shall not be less than (86°F)30°C. The paint shall remain liquid and retain its consistency at the ordinary atmospheric temperature when packed in suitable containers. The drying

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time shall not be less than 2 hours and not more than 8 hours and after drying, the paint shall not show any surface cracks, tendency to powder or discoloration due to weathering action or expansion and contraction, It shall also be able to resist the action of acids and alkalis. It shall soften under the action of mineral turpentine.
The film resulting from brushing the material on a strip of tinned iron, 30 standard wire gauge after being allowed to dry at room temperature not below (65°F) 18.3°C for 48 hours shall not when bent do1.lble over a (quarter inch) 6 mm dia rod, shown any signs of flaking or cracking. The time occupied for the actual bending shall not exceed" one second. When the paint has dried hard, a 4 H pencil should not be capable of scratching it. The weight of the paint shall be from 0.83 to 1.25 kg per litre, the component of the paint shall be such as not to react the water chlorinated or otherwise and develop poisonous or harmful elements thereto.
The paint shall be of Indian manufacture of approved make and quality.

8.1. BITUMENT KRAFT PAPER

The Bitumen Kraft paper shall comprise of two plies or kraft paper laminated with bitumen. It shall conform to type 1 of IS: 1398. It shall be free of cracks. The adhesion between the plies shall be such that they cannot be separated by pulling apart with hands after conditioning as per Clause 2.1 of IS: 1060 Part I without damaging the paper. Its minimum bursting strength should be 2.3 kgs / sq / cms. Its tensile strength shall be as per IS: 1398.

9. SEALING COMPOUND

The sealing compound shall satisfy the following requirements.

(a) To seal the joints against passage of water.
(b) To prevent ingress of grit or other foreign matters and
(c) To provide protection to the joint filler where necessary.

The various characteristic properties of the sealing compound those require consideration are adhesion, good extensibility, resistance to flow, resistance to ingress of foreign matter, resistance to weathering and resistance to oil, fuel and fat.
For application of, the sealing compounds the concrete shall be in dry condition. The subsequent climatic conditions after construction shall also be considered in selection of proper sealing compounds and its application so that the sealing compound is able to withstand the stress and maintain its adhesive bond with the concrete. After allowing the concrete to dry, the sealing cavity shall be cleaned and exposed to atmosphere for some time till it is dry.
While applying compounds, the manufacturer's advice may be followed with regard to application of primer, if necessary. The application of primer shall be such as to cover the sealing cavity to the full depth. No excess primer shall be applied. Sufficient time shall be allowed after the application of primer so that it dries completely before the application of sealing compound.

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10. TOLERANCES IN CONCRETE SURFACES

Concrete surfaces for the various classes of unformed and formed finished specified in various Clauses shall comply with the tolerances shown in Table 10 hereunder, except where different tolerances are expressly required by the specification.
In the Table below, 'line and level' and 'dimension' shall mean the lines, levels and cross-sectional dimensions as specified and required.
Surface irregularities shall be classified as 'abrupt' or 'gradual'. Abrupt irregularities include but shall not be limited to, offsets and fins caused by displaced or misplaced formwork, loose knots and other defects in formwork materials, and shall be tested by direct measurement. Gradual irregularities shall be tested by means of a straight template for plain surfaces or its suitable equivalent for curved surfaces, the template being 3 m long for unformed surfaces and 1.5 m long for formed surfaces.
Table 10 :

Class of Finish	Maximum tolerances in mm :			
	Line and Level	Abrupt irregularity	Gradual irregularity	Dimension
U1	+12	6	+6	---
U2	+6	3	+3	---
U3	+6	3	+3	---
F1	+12	6	+6	+12 – 6
F2	+6	6	+6	+12 – 6
F3	+3	3	+6	+6

UNFORMED SURFACES - CLASS OF FINISH
Finishes to unformed surfaces of concrete shall be classified as U1, U2, U3, 'spaded" or 'bonded concrete'. Where the class of finish is not specified the concrete shall be finished to Class U1.

Where a bonded concrete surface is specified, the laitance shall be removed from the Class U1 finished surface and the aggregate exposed while the concrete is still green.
A spaded finish shall be a surface free from voids and brought to reasonably uniform appearance by the use of shovels as it is placed in the works.
Class U2 finish shall be a wood float finish. Floating shall be done after the initial set of the concrete has taken place and the surface had hardened sufficiently. The concrete shall be worked no more than is necessary to produce a uniform surface free from screed marks.
Class U3 finish shall be a hard smooth steel-trowelled finish. Trowelling shall not commence until the moisture film has disappeared and the concrete has hardened sufficiently to prevent excess laitance from being worked into the surface. The surfaces shall be trowelled under firm pressure and left free from trowel marks.

The addition of dry cement, mortar or water shall not be permitted during any of the above operations,

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10.1. CURING, PROTECTING. REPAIRING & FINISHING

a) Curing

All concrete shall be cured by keeping it continuously damp for a period of time required for complete hydration and hardening to take place. Preference shall be given to the use of continuous sprays, or ponded water, continuously saturated coverings of sacking, canvas, hessian or other absorbent materials, or approved effective curing compounds applied with spraying equipment capable of producing a smooth, even textured coat. Extra precautions shall be exercised in curing concrete during cold and hot weather as outlined hereinafter. The quality of curing water shall be the same as that used for mixing concrete.

Certain types of finish or preparation for overlaying concrete must be done at certain stages of the curing process and special treatment may be required for specific concrete surface finish.

Curing of concretes made of high alumina cement and super sulphated cement shall be carried out as directed by the Employer's Engineer.

i) Curing with Water

Fresh concrete shall be kept continuously wet for a minimum period of 10 days from the date of placing of concrete, following a lapse 12 to 14 hours after laying concrete. The curing of horizontal surfaces exposed to the drying winds shall however begin as soon as the concrete has hardened. Water shall be applied to formed surfaces immediately upon removal of forms. Quantity of water applied shall be controlled so as to prevent erosion of freshly a placed concrete.

ii) Continuous Spraying

Curing shall be assured by use of an ample water supply under pressure in pipes, with all necessary appliances of hose, sprinklers, and spraying devices. Continuous fine mist spraying or sprinkling shall be used, unless otherwise specified or approved by the Employer's Engineer.

iii) Alternate Curing Methods

Whenever in the opinion of the Employer's Engineer, it is necessary to omit the continuous spray method, a covering of clean sand or other proved means such as wet gunny bags which will prevent loss of moisture from the concrete may be used. No type of covering will be approved which would stain or damage the concrete during or after the curing period. Covering shall be kept continuously wet during the curing period.

For curing of concrete in pavements, sidewalks, floor, flat roofs or other level surfaces, the ponding method of curing is preferred. The method of containing the ponded water shall be approved by the Employer's Engineer. Special attention shall

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be given to edges and comers of the slabs to ensure proper protection to these areas. The ponded areas shall be kept continuously filled with water during the curing period.

iv) Curing Compounds

Surface coating type curing compounds shall be used only by special permission of Employer's Engineer. Curing compounds shall be liquid type white pigmented, conforming to U.S. Bureau of Reclamation specification. No curing compound shall be used on surfaces where future blending with concrete, water or acid proof membrane, or painting is specified.

v) Curing Equipment

All equipment and materials required for curing shall be on hand and ready for use before concrete is placed.

b) Protecting Fresh Concrete

Fresh concrete shall be protected from defacements and damage due to construction operations by leaving forms in place for an ample period as specified later in these specifications. Newly placed concrete shall be protected by approved means such as tarpaulins from rain, sun and winds. Steps as approved by the Employer's Engineer shall also be taken to protect immature concrete from damage by debris, excessive loading, vibration, abrasion or contact with other materials etc., that may impair the strength and/or durability of the concrete. Workmen shall be warned against and prevented from disturbing green concrete during its setting period. If it is necessary that workmen enter the area of freshly placed concrete, the Employer's Engineer may require that bridges be placed over the area.

c) Repair and Replacement of Unsatisfactory Concrete

Immediately after the shuttering is removed, the surface of concrete shall be very carefully gone over and all defectives areas called for the attention of the Employer's Engineer who may permit patching of the defective areas or also reject the concrete unit either partially or its entirely. Rejected concrete shall be removed and replaced by the Contractor. Holes left by form bolts etc., shall be filled up and made good with mortar composed of one part of cement to one and half parts of sand passing 2,36 mm I.S. sieve shall be struck off flash at the fare of the concrete. Concrete surfaces shall be finished as described in specifications or as directed by the Employer's Engineer.

Superficial honeycombed surfaces and rough patches shall be similarly made good immediately after removal of shuttering, in the presence of the Employer's Engineer and superficial water and air holes shall be filled in. The mortar shall be well worked into the surface with a wooden float. Excess water shall be avoided. Unless instructed otherwise by the Employer's Engineer, the surface of the exposed concrete placed

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against shuttering shall be rubbed down immediately on removal of shuttering to remove fine or other irregularities, care being taken to avoid damaging the surfaces. Surface irregularities shall be removed from grinding.

If reinforcement is exposed or the honeycombing occurs at vulnerable positions e.g. ends of beams or columns it may be necessary to cut out the member completely or in part and reconstruct. The decision of the Employer's Engineer shall be final in this regard. If only patching is necessary, the defective concrete shall be cut out until solid concrete is reached or to a minimum depth of 25mm whichever is greater, the edges being cut perpendicular to the affected surface or with a small undercut if possible. Anchors, tees or dovetail slots shall be provided whenever necessary to attach the new concrete securely in place. An area extending several centimeters beyond the edges and the surfaces of the prepared voids shall be saturated with water for 24 hours immediately before the patching material is placed.

i) Use of Epoxy

The use of epoxy for bonding fresh concrete used for repairs will be permitted upon written approval of the Employer's Engineer. Epoxies shall be applied in strict accordance with the instructions of the manufacturer.

ii) Method of Repair

Small sizes holes having surface dimensions about equal to the depth of the hole, holes left after removal of from bolts, grout insert holes and slots cut for repair of cracks shall be repaired as follows. The hole to be patched shall be roughened and thoroughly soaked with clean water absorption stops.

A 5 mm thick layer of grout of equal parts of cement and sand shall be well brushed into the surface to be patched, followed immediately by the patching concrete which shall be well consolidated with a wooden float and left slightly proud of the surrounding surface. The concrete patch shall be built up in 10 mm thick layers. After an hour or more, depending upon weather conditions, it shall be worked off flush with a wooden float and a smooth finish obtained by wiping with Hessian. A steel trowel shall be used for this purpose. The mix for patching shall be of the same materials and in the same proportion as that used in the concrete being repaired, although some reduction in the maximum size of the coarse aggregates may be necessary and the mix shall be kept as dry as possible.

Mortar filling by air pressure (guniting) shall be used for repair of areas too large and/or too shallow for patching with mortar. Patched surfaces shall be given a final treatment to match the color and texture of the surrounding concrete. White cement shall be substituted for "ordinary cement, if so directed by the Employer's Engineer, to match the shade of the patch with the original concrete. Also wherever required for continuation of reinforcement Hiliti can be used with prior approval of Employers Engineer.

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iii) Curing of Patched Work

The patched area shall be covered immediately with an approved non-staining, water-saturated material such as gunny bags which shall be kept continuously wet and protected against sun and wind for a period 24 hours. Thereafter, the patched area shall be kept wet continuously by a fine spray, or sprinkling for not less than 10 days. All fillings shall be lightly bonded to the concrete and shall be sound, free form shrinkage cracks after the fillings have been cured, and dried.

iv) Approval by the Employer's Engineer

All materials, procedures and operations used in the repair of concrete and also the finished repair work shall be subject to the approval of the Employer's Engineer.

d) Finishing

The type of finish for formed concrete surfaces shall be as follows, unless varied by the Employer's Engineer.

When the structure is in service all the surfaces shall receive no special finish, except repair of damaged or defective concrete, removal of fins and abrupt irregularities, filling of holes left by form ties and rods and clean up of loose or adhering debris.

Surfaces which will be exposed to the weather and which would normally be level, shall be sloped for drainage. Unless a horizontal surface or the slope required is specified, the tops of narrow surfaces such as stair treads, walls curbs and parapets shall be sloped across the width approximately 1 in 30. Broader surfaces such as walkways, roads parking areas and platforms shall be sloped about 1 in 50.

Surfaces that will be covered by backfill or concrete, sub-floors to be covered with concrete topping, such as outside decks, floors of galleries and sumps, parapets, gutters, side-walks, floors and slabs, shall be consolidated, screeded and floated. Excess water and laitance shall be removed before final finishing. Floating may be done with hand or power tools and started as soon as the screeded surface has attained a stiffness to permit finishing operations and these shall be minimum required to produce a surface uniform in texture and free from screed marks or other imperfections. Joints and edges shall be tooled as specified or as directed by the Employer's Engineer.

Finishes

Interior Wall:

All interior walls should be painted approved quality of distemper.

Exterior Wall:

The type of finishing & the color scheme of the external surfaces to be as preapproval of the Employer's Engineer. However it shall be sand faced cement plaster in CM (1:4)

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20 mm thick followed by water proofing cement based paint. This shall be of approved shade & brand to give even shade on the work in 3 or more csoats.

i) Standard Finish for Exposed Concrete

Exposed concrete shall mean any concrete, other than floors or slabs, exposed to view upon completion of the works. Unless otherwise specified, the standard finish for exposed concrete shall be a smooth finish. A smooth finish shall be obtained with the use of lined or plywood forms having smooth and even surfaces and edges. Panels of forms shall be of uniform size and be as large as practicable and installed with closed joints. Upon removal of forms the joint marks shall be smoothed off and all blemishes, projection, etc., removed leaving the surfaces smooth.

ii) Integral Cement Concrete Finish

When specified, an integral cement concrete finish of specified thickness for floors and slabs shall be applied either monolithic or bonded, as specified or directed by the Employer's Engineer. The surface shall be tested with a straight edge and any high and low spots eliminated. Floating or troweling of the finish shall be permitted only after all surface water has evaporated. Dry cement or a mixture of dry cement finish to absorb moisture or to stiffen the mix.

iii) Rubbed Finish

A rubbed finish shall be provided only on exposed concrete surfaces. Upon removal of forms, all fins and other projections on the surfaces shall be carefully removed, offsets leveled and voids and/ or damaged sections immediately saturated with water and repaired by filling with a concrete or mortar of the same composition as was used in the surface. The surfaces shall then be thoroughly wetted and rubbed with carborundum or other abrasive. Cement mortar may be used in the rubbing, but the finished surfaces shall not be brush coated with either cement or rout after rubbing the finished surfaces shall present a uniform and smooth appearance.

e) Protection

The Employer's Engineer shall protect all concrete against damage until final acceptance.

10.2. PREPARATION OF EARTH STRATA FOR FOUNDATION

a) General

All earth surfaces upon which or against which concrete is to be placed, shall be well compacted and free from standing water, mud or debris. Soft, yielding soil shall be removed and replaced with suitable earth well compacted or lean concrete as directed by the Employer's Engineer. Where specified, lean concrete shall be

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provided on the earth stratum for receiving concrete. The surface of absorptive soils against which concrete is to be placed shall be moistened thoroughly so that no moisture will be drawn from the freshly placed concrete and later shall help to cure the concrete.

b) Preparation of Concrete Surface

The preparation of concrete surfaces upon which additional concrete is to be placed later, shall preferably be done by scarifying and cleaning while the concrete is between its initial and final set. This method shall be used wherever practicable and shall consist of cutting the surface with picks and stiff brooms and by use of an approved combination of air and water jet as directed by the Employer's Engineer. Great care shall be taken in performing this work to avoid removal of too much mortar the weakening of the surface by loosening of aggregate. When it is not practicable to follow the above method, it will be necessary to employ air tools to remove laitance and roughen the surface.

The final required result shall be a pitted surface from which all dirt, unsound concrete, laitance and glazed mortar have been removed.

c) Bonding Treatment (Mortar)

After rock or concrete surfaces upon which new concrete is to be placed have been scarified, cleaned and wetted as specified herein, they shall receive a bonding treatment, immediately before placement of the concrete.

The bonding medium shall be a coat of cement-sand mortar shall have the same cement-sand proportions as the concrete which shall be placed on it. The water-cement ratio shall be determined by placing conditions and as approved by the Employer's Engineer.

Bonding mortar shall be placed in sufficient quantity to completely cover the surface, about 10mm thick for rock surface and about 5mm thick for concrete surfaces. It shall be brushed or broomed over the surface and worked thoroughly in to all cracks, crevices and depressions. Accumulations or puddles or mortar shall not be allowed to settle on depressions and shall be brushed out to a satisfactory degree, as determined by the Employer's Engineer.

Mortar shall be placed at such rate that it can be brushed over the surface just in advance of the placement of concrete. Only as much area shall be covered with mortar as can be covered with concrete before initial set in the mortar takes place. The amount of mortar that will be permitted to be place at any one time, or the area which it is to cover, shall be in accordance with the Employer's Engineer directions.

d) Cleaning and Bonding Formed Construction Joints.

Vertical construction joints shall be cleaned as specified above or by other methods approved by the Employer's Engineer, hi placing concrete against formed

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construction joints, the surfaces of the joints, where accessible, shall be coated thoroughly with the specified bed-joint bonding mortar immediately before they are covered with concrete or by scrubbing with wire brooms dipped into the fresh concrete. Where it is impracticable to apply such a mortar coating, special precautions shall be taken to ensure that the new concrete is brought into intimate contact with the surface of the joint by careful puddling and spading with the aid of vibrators and suitable tools.

e) Expansion and Contraction Joints

Provision shall be made for expansion and contraction in concrete by use of special type joints located wherever necessary and as shown on approved drawings.

10.3. HOT WEATHER REQUIREMENTS

All concrete work performed in hot weather shall be in accordance with IS: 456, except as herein modified.

Admixtures may be used only when approved by the Employer's Engineer.

Adequate provisions shall be made to lower concrete temperatures by cool ingredients, eliminating excessive mixing, preventing exposure of mixers and conveyors to direct sunlight and the use of effective paint on mixers, etc. The temperature of the freshly placed concrete shall not be permitted to exceed 38°C.

Consideration shall be given to shading aggregate stockpiles from direct rays of the sun and spraying stockpiles with water, use of cold water when available, and burying, insulating, shading and/ or painting white the pipelines and water storage tanks and conveyances.

In order to reduce loss of mixing water, the aggregates, wooden forms, subgrade adjacent concrete and other moisture absorbing surfaces shall be well wetted prior to concreting. Placement and finishing shall be done as quickly as possible.

Extra precautions shall be taken for the protection and curing of concrete. Consideration shall be given to continuous water curing and protection against high temperatures and drying hot winds for a period of at least 7 days immediately after concrete has set and after which normal curing procedures may be resumed.

10.4. PLACING CONCRETE UNDERWATER

Under all ordinary conditions all foundations shall be completely dewatered and concrete placed in the dry. However, when concrete placement underwater is necessary, all work shall conform to IS: 456 and the procedure shall be as follows:

i) Method of Placement

Concrete shall be deposited underwater by means of tremies, or drop bottom buckets of approved type.

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ii) Discretion, Inspection and Approval

All work requiring placement of concrete underwater shall be designed, directed and inspected with due regard to local circumstances and purposes. All underwater concrete shall be placed according to the plans or specifications approved by the Employer's Engineer.

10.5. PRECAST CONCRETE

a) General

Precast concrete units, whether manufactured on or off site, shall comply in every way with the provisions of the Contract for in situ concrete. Pre-cast units shall be hydraulically pressed or cast on vibrating table.

When ready for incorporation in the works, precast units shall be laid, bedded, jointed and fixed to the lines and levels as specified or required. Mortar for bedding and jointing shall consist of one part by volume of Portland cement and two parts by volume of natural sand or equivalent crusher fines.

All precast units shall be cast on a suitable bed or platform with firm foundation and free from wind. The Contractor shall be responsible for the accuracy of the level or shape of the bed or platform. A suitable serial number and the date of casting shall be impressed or painted on each unit.

b) Striking Form

Side shutters shall not be struck in less than 24 hours after depositing concrete and no precast unit shall be lifted until the concrete reaches strength of at least twice the stress to which the concrete may be subjected to at the time of lifting.

c) Precast Units

The lifting and removal of precast units shall be undertaken without causing shock, vibration or undue bending stresses to or in the units. Before lifting and removal takes place, Contractor shall satisfy the Employer's Engineer or his representative that the methods he proposes to adopt for these operations will not over-stress or otherwise effect seriously the strength of the precast units. The reinforced side of the units shall be distinctly marked.

d) Curing

All precast work shall be protected form the direct rays of the sun for at least 7 days after casting during that period each unit shall be kept constantly watered or preferably be completely immersed in water if the size of the unit so permits.

10.6. PRECAST CONCRETE POROUS PIPES

Concrete porous pipes shall be made in accordance with IS: 4350. The pipes shall be of uniform cross section and bore and not more than 1 meter in length with minimum

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wall thickness of 50 mm with 1:3 cement to coarse aggregate proportion. The pipes shall have ogee or rebated joints, the axial length of which shall not be less than (D/36 + 12) mm, where D is the nominal internal diameter of the pipe in millimetres.

The wall thickness shall be such that the pipe shall bear a load of 20,000 N/m applied radially and have a porosity of not less than 0.65 D litres/metre/min.

10.7. SLOTS, OPENINGS, ETC.

Slots, openings or holes, pockets, etc., shall be provided in the concrete work in the approved positions or as directed by the Employer's Engineer. Any deviation from the approved drawings shall be made good by Contractor at his own expense, without damaging and other work. Sleeves, bolts, inserts, etc., shall also be provided in concrete work where so required.

10.8. GROUTING

a) Standard Grout

Grout shall be provided as specified herein below.

The proportions of grout shall be such as to produce a flow able mixture consistent with minimum water content and shrinkage. The grout proportions shall be limited as follows:

Table 1.3 :

Use	Grout thickness	Mix Proportions	W/C ratio (max.)
i) Fluid mix	Under 25 mm	One part Portland cement to one part sand	0.44
ii) General	25 mm and over but less than 50 mm	One part Portland cement to two parts of sand	0.53
iii) Stiff mix	50 mm and over	One part Portland cement to three parts of sand	0.53

I. i) Sand shall be such as to produce a flowable grout without any tendency to segregate.

ii) Sand, for general grouting purposes, shall be graded within the following limits.

Passing IS 2.36 mm sieve	95 to 100%
Passing IS 1.18 mm sieve	65 to 95%
Passing IS 300 micron sieve	10 to 30%
Passing IS 150 micron sieve	3 to 10%

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iii) Sand for fluid grouts, shall have the fine material passing the 300 and 150 micron sieves at the upper limits specified above.

iv) Sand, for stiff grouts, shall meet the usual grading specifications for concrete,

II. i) Surfaces to be grouted shall be thoroughly roughened and cleaned of all foreign matter and laitance.

ii) Anchor bolts, anchor bolt holes and the bottoms of equipment and column base plates shall be Cleaned of all oil, grease, dirt and loose material. The use of hot, strong caustic solution for this purpose will be permitted.

III. i) Prior to grouting, the hardened concrete surfaces to be grouted shall be saturated with water.

ii) Water in anchor bolt holes shall be removed before grouting is started. Forms around base plates shall be reasonably tight to prevent leakage of the grout.

Adequate clearance shall be provided between forms and base plate to permit grout to be worked properly into place.

Grouting, once started, shall be done quickly and continuously to prevent segregation, bleeding and breakdown of initial set. Grout shall be worked from one side of one end to the other to prevent entrapment of air. To distribute the grout and to ensure more complete contact between base plate and foundation and to help release trapped air, link chains can be used to work the grout into place.

Grout through holes in base plates shall be by pressure grouting.

Variations in grout mixes and procedures shall be permitted if approved by the Employer's Engineer.

b) **Non-Shrinking Grout for Equipment Foundation**

Non-shrinking grout shall be used for grouting of machine base plates, anchor bolts, other anchoring devices and at locations where ordinary grouts are ineffective due to shrinkage. It shall be composed a type of expansive hydraulic setting binder and select-graded aggregates. It shall have properties as mentioned below:

1. Maximum grain size - 6
2. Water % (for 80% flow) - 15.17
3. Density of hardened - 2.27-2.30

   Grout gm/ml
4. Compressive strength N/mm2

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	Min. 3 days	- 23
	7 days	- 34
	28 days	- 45
5.	Expansion, %	
	Free	- 0.15-0.2
	Restrained	- 0.08-0.12

Mixing, batching, cleaning, preparation of surface and curing of non-shrinking grout shall be done as per Manufacturer's instructions.

10.9. INSPECTION

All materials, workmanship and finished construction shall be subject to continuous inspection and approval of the Employer's Engineer.

All materials supplied by the Contractor and all work or construction performed by the Contractor which is rejected as not being in conformity with the specifications and requirements, shall be immediately replaced.

Approvals of any preliminary materials or phase of work shall in no way relieve the Contractor from the responsibility of supplying concrete and/or producing finished concrete in accordance with specifications and requirements.

All finished concrete shall be protected against damage until final acceptance by the Employer's Engineer.

10.10. CLEAN-UP

Upon completion of the concrete work, all forms, equipment, construction tools, protective coverings and any debris resulting from the work shall be removed from the premises.

All debris, i.e. containers, scrap wood, etc., shall be removed to "dump" daily, or as directed by the Employer's Engineer.

The finished concrete surfaces shall be left in a clean condition satisfactory to the Employer's Engineer.

10.11. RECORDS OF CONCRETING

An accurate and upto date record showing times, dates, weather and temperature conditions when various positions of all the concrete structures forming the works were concreted will be kept by the Employer's Engineer shall be countersigned by the Contractor. If the Contractor fails to sign the Employer's Engineer record, it shall nevertheless be regarded as correct and binding on the Contractor.

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10.12. FOUNDATION BEDDING, BONDING AND JOINTING

All surfaces upon or against which concrete will be placed, shall be suitably prepared by thoroughly cleaning, washing and dewatering, as specified or as the Employer's Engineer may direct, to meet the various situations encountered in the work.

Soft or spongy areas shall be cleaned out and backfilled with either a soil-cement mixture, lean concrete or clean sand fill compacted to minimum density of 90% Modified Proctor.

Prior to construction of formwork for any item where soil act as bottom form, approval shall be obtained from the Employer's Engineer as to the suitability of the soil.

10.13. DEWATERING

Dewatering is process of removal of water from a foundation pit when it is situated below the ground water table or when it is surrounded by a cofferdam. The purpose of dewatering is to keep the excavation dry so that concreting can be done. Dewatering is temporary if it is done at the time of construction. It is followed by restoration to its original water table after the structure has been be completed. Dewatering may be done by sump and pump, but for deep excavations such as in case of intake pump house, treated water sumps etc. Well point systems are advised. Well points are either with braces or stainless-steel screens and are made with either closed ends or self-jetting types and spacing of the well points depends on the permeability of the soil and on the availability of the time to affect the drawdown. Further specially in case of intake pump house, being quite deep the well points must be installed in two or more stages and on the other hand, it is possible to avoid multi-well point stages by excavating don to water level before installing the pump and header or deep well drainage shall be used for dewatering.

10.14. PREPARATION OF ROCK STRATA FOR FOUNDATIONS

To provide tight bond with rock foundations, the rock surface shall be prepared, and the following general requirements shall be observed.

Concrete shall not be deposited on large sloping rock surfaces. Where required by the Employer's Engineer, the rock shall he cut to form rough steps or benches to provide roughness or a more suitable bearing surface.

Rock foundation stratum shall be prepared by picking, barring, wedging and similar methods which will leave the rock in an entirely sound and unsheltered condition.

Shortly before concrete is placed, the rock surface shall be cleaned with high pressure water and air jet even though it may have been previously cleaned in that manner.

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Prior to placing concrete, the rock surface shall be kept wet for a period of 2 to 4 hours unless otherwise directed by the Employer's Engineer.

Before placing concrete on rock surfaces all water shall be removed from depressions to permit through inspection and proper bonding of the concrete to the rock.

11. FORMWORK

11.1. FORMWORK - FIXING AND GENERAL

All formwork shall be constructed of timber, sheet metal or other approved material. It shall be firmly supported adequately strutted, braced and tied to withstand the placing and vibration of concrete and the effects of weather. The tolerance on line and level shall not exceed 3 mm and the soffit of beams other than pre-stressed beams shall be in the absence of any specified camber, be erected with an upward camber of 6 mm for each 3 metres of span.

The Contractor shall be responsible for the calculations and design for the formwork, and if required, shall submit them to the Employer's Engineer for approval before construction. On formwork to external faces, which will be permanently exposed, all horizontal and vertical formwork joints shall be so arranged that Joint lines will form a uniform pattern on the face of the concrete. Where the Contractor proposes to make up the formwork from standard sized manufactured formwork panels, the Employer's Engineer shall approve the size of such panels before they are used in the construction of the works. The finished appearance of the entire elevation of the structure and adjoining structures shall be considered when planning the pattern of joint lines caused by formwork and by construction joint to ensure continuity of horizontal and vertical lines.

Faces of formwork in contact with concrete shall be free from adhering foreign matter, projecting nails and the like, splits or other defects, and all formwork shall be clean and free from standing water, dirt, shavings, chipping or other foreign matter. Joints shall be sufficiently watertight to prevent the escape or mortar or the formation of fine and other blemishes on the face of the concrete.

Formwork shall be provided for the top surfaces of sloping work where the slope exceeds fifteen degrees from the horizontal (except where such top surface is specified as spaded finish) and shall be anchored to enable the concrete to be properly compacted and to prevent floatation, care being taken to prevent air being trapped.

Openings for inspection of the inside of the formwork and for the removal of water used for washing down shall be provided and so formed to be easily closed before placing concrete. Before placing concrete, all bolts, pipes or conduits or other fixtures which are to be built in shall be fixed in their correct positions, and cores and other

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devices for forming holes shall be held fast by fixing to the formwork or otherwise. Holes shall not cut in any concrete without approval of the Employer's Engineer.

All exterior angles on the finished concrete of 90° or less shall be given 20 mm x 20 mm chamfers unless otherwise ordered by the Employer's Engineer.

No ties or bolts or other device shall be built into the concrete for the purpose of supporting formwork without the prior approval of the Employer's Engineer. The whole part of any such supports shall be capable of removal so that no part remaining embedded in the concrete shall be nearer than 50 mm from the surface in the case of reinforced concrete and 150 mm in the case of un-reinforced concrete. Holes left after removal of such supports shall be neatly filled with well-rammed dry-pack mortar.

Formwork in contact with the concrete shall be treated with a suitable non-staining mould oil to prevent adherence of the concrete except where the surface is subsequently to be rendered. Care shall be taken to prevent the oil from coming in contact with reinforcement or with concrete at construction joints. Surface retarding agents shall be used only where ordered by the Employer's Engineer.

11.2. REMOVAL OF FORMWORK

Formwork shall be so designed as to permit any removal without resorting to hammering or levering against the surface of the concrete. The periods of time elapsing between the placing of the concrete and the striking of the formwork shall be as approved by the Employer's Engineer after consideration of the loads likely to be imposed on the concrete and shall in any case be not less than the periods shown in Table 11.2 below. Where soffit formwork is constructed in a manner during and after such removal of a sufficient number of adequate supporting props in an undisturbed condition, the Contractor may with the agreement of the Employer's Engineer, remove the formwork at the earlier times listed below provided that the props are left in position.

Notwithstanding the foregoing, the Contractor shall be held responsible for any damage arising from removal of formwork before the structure is capable of carrying its own weight and any incidental loading.

Striking shall be done slowly with utmost care to avoid damage to arises and projections and without shock or vibration, by gently easing the wedges. If after removing the formwork it is found that timber has been embedded in the concrete, it shall be removed and made good as specified earlier.

Table 11.2 :

Position of Formwork	Min. Days for Striking
Walls	1

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Side of beams and columns	2
Slabs (Props left under)	3
Props to slabs (span not exceeding 4.5 m)	7
Props to slabs (span exceeding 4.5 m)	14
Beams soffit (props left under)	7
Props to beams (span not exceeding 6 m)	14
Props to beams (span exceeding 6 m)	21

Notwithstanding the foregoing, the Contractor shall be held responsible for any damage arising from removal of formwork before the structure can carry its own weight and any incidental loading.

Striking shall be done slowly with utmost care to avoid damage to arises and projections and without shock or vibration, by gently easing the wedges. If after removing the formwork it is found that timber has been embedded in the concrete, it shall be removed and made good as specified earlier.

Reinforced temporary openings shall be provided, as directed by the Employer's Engineer, to facilitate removal of formwork which otherwise may be inaccessible.

Tie rods, clamps, form bolts etc. which must be entirely removed from walls or similar structures shall be loosened not sooner than 24 hours nor later than 40 hours after the concrete has been deposited. Ties, except those required to hold forms in place, may be removed at the same time. Ties, withdrawn from walls and grade beams shall be pulled toward the inside face. Cutting ties back from the faces of the walls and grade beams will not be permitted.

For liquid retaining structures no sleeves for through bolts shall be used nor shall through bolts be removed as indicated above. The bolts, in this case, shall be cut at 25 mm depth or more from the surface and then the hole shall be made good by cement sand mortar of the same proportions as the concrete just after striking the formwork.

11.2.1. FORMED SURFACES - CLASSES OF FINISH

Finishes to form surfaces of concrete shall be classified as Fl, F2 or F3 or such other special finish as may be particularly specified. Where the class of finish is not specified the concrete shall be finished to Class Fl.

Formwork for Class F3 finish shall be lined with as large panels as possible of non-staining material with a smooth unblemished surface such as sanded plywood or hard compressed fibre board, arranged in a uniform approved pattern and fixed to back

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formwork by oval nails. Un-faced wrought boarding or standard steel panels shall not be permitted.

Formwork for Class F2 finish shall be faced with wrought tongued and grooved boards or plywood or metal panels arranged in a uniform approved pattern free from defects likely to detract from the appearance of the surface.

Formwork for Class Fl finish shall be constructed in timber, sheet metal or any suitable materials, which will prevent loss of grout when the concrete is vibrated. Surfaces subsequently to be rendered, plastered and tiled shall be adequately scabbed or hacked as soon as the formwork is removed to reduce the irregularities to not more than half the thickness of such rendering, plastering or bedding for tiles and to provide a satisfactory key.

11.2.2. DEFECTS IN FORMED SURFACES

Workmanship in formwork and concreting shall be such that concrete shall normally require no making good, surface being properly compacted and smooth.

If any blemishes are revealed after removal of formwork, the Employer's Engineer decisions concerning remedial measures shall be obtained immediately. These measures may include, but shall not be limited to the following:

Fins, pinhole bubbles, surface discolouration and minor defects may be rubbed down with sacking immediately after the formwork is removed.

Abrupt and gradual irregularities may be rubbed down with carborundum and water after the concrete has been fully cured. These and any other defects shall be remedied by methods approved by the Employer's Engineer which may include using a suitable epoxy resin or, where necessary, cutting out to a regular dovetailed shape at feast 75 mm deep and refilling with concrete over steel mesh reinforcement sprung into the dovetail.

11.2.3. HOLES TO BE FILLED

Holes formed in concrete surfaces by formwork supports or the like shall be filled with dry-pack mortar made from one part by weight of Ordinary Portland Cement and three parts fine aggregate passing IS sieve 1.18 mm. The mortar shall be mixed with only sufficient water to make the materials stick together when being moulded in the hands.

The Contractor shall thoroughly clean any hole that is to be filled with dry-pack mortar and where the surface has been damaged the Contractor shall break out any loose, broken or cracked concrete or aggregate. The concrete surrounding the hole shall then be thoroughly soaked after which the surface shall be dried so as to leave a

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small amount of free water on the surface. The surface shall then be dusted lightly with ordinary Portland cement by means of a small dry brush until the whole surface that will come into contact with the dry-pack mortar has been covered and darkened by absorption of the free water by the cement Any dry cement in the hole shall be removed.

The dry-pack material shall then be placed and packed in layers having a compacted thickness not greater than 15 mm. The compaction shall be carried out by use of a hardwood stick and a hammer and shall extend over the full area of the layer, particular care being taken to compact the dry-pack against the sides of the hole. After compaction the surface of each layer shall be scratched before further loose material is added. The hole shall be finished by laying a hardwood block against the dry-pack fill and striking the block several times. Steel finishing tools shall not be used and water shall not be added to facilitate finishing.

11.3. TOLERANCES

Tolerance is a specified permissible variation from lines, grade or dimensions given in approved drawings. No tolerance specified for horizontal or vertical building lines or footings shall be construed to permit encroachment beyond the legal boundaries. Unless otherwise specified, the following tolerances will be permitted:

Tolerances for R.C. Building

i) Variation from the plumb -

a) In the lines and surfaces of columns, piers, walls and in arises
5 mm per 2.5 m or 25 mm, whichever is less.

b) For exposed comer columns and other conspicuous lines —

In any bay or 5 m maximum	- 5 mm
In 10m or more	- 10 mm

ii) Variation from the level or from the grades indicated on the approved drawings.

a) In slab soffit, ceilings, beam soffit, and in shard edges

In 2.5m 5	- 5mm
In any bay or 5 m maximum	- 10 mm
In 10 m or more	- 15mm

b) For exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines-

In any bay or 5 m maximum - 5 mm

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In 10 m or more - 10 mm

iii) Variation of the linear building lines from established position in plan and related position of columns, wall and partitions.

In any bay or 5 m maximum - 10 mm

In 10 m or more - 20 mm

iv) Variation in the sizes and locations of sleeves, openings in walls and floors 5 mm except in the case of and for anchor bolts

v) Variation in cross-sectional dimensions of columns and beams and in the thickness of slabs and walls

Minus - 5 mm

Plus - 10 mm

vi) Footings

a) Variation in dimension in plan\

Minus - 5 mm

Plus - 50mm

b) Misplacement or eccentricity

2% of footing width in the direction of misplacement but not more than 50 mm

c) Reduction in thickness

Minus - 5% of specified thickness subject to a maximum of 50mm

vii) Variation in steps -

a) In a flight of stairs

Rise - 3 mm

Tread - 5 mm

b) In consecutive steps

Rise - 1.5mm

Tread - 3 mm

Tolerances in other concrete structures

i) All structures

a) Variation of the constructed linear outline from established position in plan

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In 5 m - 10 mm

In 10 m or more - 15 mm

b) Variation of dimensions to individual structural features from established positions -

In 20 m or more - 25 mm

In buried construction - 50 mm

c) Variation from plumb, from specified batter or from curved surfaces of all structures

In 2.5 m - 10 mm

In 5 m - 15 mm

In 10 m or more - 25 mm

In buried construction - Twice the above amounts

d) Variation from level or grade indicated on approved drawings in slab, beams, soffit, horizontal grooves and visible arises -

In 2.5 m - 5 mm

Ln 7.5 m or more - 10 mm

In buried construction - Twice the above amounts

e) Variation in cross-sectional dimensions of columns, beams. buttresses, piers and similar members -

Minus - 5 mm\

Plus - 10 mm

f) Variation in the thickness of slabs, walls, arm sections and similar members -

Minus - 5 mm

Plus - 10 mm

ii) Footings for columns, piers, walls, buttresses and similar members

a) Variation of dimensions in plan -

Minus - 10 mm

Plus - 50 mm

b) Misplacement or electricity -

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2% of footing width in the direction of misplacement but not more than 50 mm

c) Reduction in thickness -\

5% of specified thickness subject to a maximum of 50 mm

iii) Tolerances in other types of structures shall generally conform to those given in Clause 2.4 of Recommended Practice for Concrete Formwork (American Concrete Institute -Ad 347)

iv) Tolerances in fixing anchor bolts shall be as follows:

a) Anchor bolts without sleeves ±5 mm,

b) Anchor bolts with sleeves ± 5.0 mm for bolts upto 3.00 mm for bolts above

32 mm dia

c) Embedded parts ± 5 mm in all direction.

11.4. BRACINGS, STRUTS AND DROPS for formwork

Formwork shall be braced, strutted, propped and so supported that it shall not deform under weight and pressure of the concrete and also due top the movement of men and other materials. Bamboos shall not be used as proper cross bearers.

The formwork for beams and slabs shall be so erected that the formwork on the sides of the beams and under the soffit of slabs can be removed without disturbing the beam bottoms. Re-propping of beams shall not be done except when props have to be reinstated to take care of construction loads anticipated to be in excess of the design load. Vertical props shall be supported on wedges or other measures shall be taken whereby the props can be gently lowered vertically while striking the formwork.

If the formwork for a column is erected for the full height of the column, one side shall be left open and built up in sections as placing of the concrete proceeds, or windows may be left for pouring concrete from the sides to limit he drop of concrete to 1.0 m or as directed by the Employer's Engineer.

12. REINFORCEMENT

12.1. GENERAL

Reinforcement shall be Fe 500D as per IS: 1786 CRS. Wire mesh or fabric shall be in accordance with IS: 1566. Substitution of reinforcement will not be permitted. The Steel shall be procured using iron ore as the basic raw material and having an in-house iron making facilities followed by production of liquid steel and crude steel with

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in house rolling. Adopting BF-BOF route or DRI-EAF technology as per Ministry of Steel Government of India guidelines. No re-rolled material/secondary steel will be accepted or allowed for any structural steel. As per Is 1786 :2008 under clause 4.2.3 Low alloyed/micro alloyed/CRS steel can also be used by adding alloy elements like Cu,Cr,Ni, Mo and P either individually or in combination to improve allied product propoerties.however, the total content of these elements shall not be less than 0.40%.in such alloys when phosphorous is used, it shall not exceed 0.12%and the carabon shall be restiricted to max. 0.15%.Every lot shall be accompined by the manufactures certificate certifying the quality, grade and material and shall be tested in an independent laboratory to certify all properties as per IS 1786.

12.2. STORAGE

The reinforcement shall not be kept in direct contact with the ground but stacked on top of an arrangement of timber sleepers or the like.

If the reinforcing rods have to be stored for a long duration, they shall be coated with cement wash before stacking and/ or be kept under cover or stored as directed by the Employer's Engineer.

Fabricated reinforcement shall be carefully stored lo prevent damage, distortion corrosion and deterioration.

12.3. QUALITY

All steel shall be of Grade I quality unless specifically permitted by the Employer's Engineer. No re-rolled material will be accepted. If requested by the Employer's Engineer, the Contractor shall submit the manufacturer's test certificate for the steel. Random tests on steel supplied by the Contractor may be performed by the Employer's Engineer as per relevant Indian Standards. All costs incidental to such test shall be at the Contractor's expense. Steel not conforming to specifications shall be rejected.

All reinforcements shall be clean, free from grease, oil, paint, dirt, loose rust, dust, bituminous material or any other substances that will destroy or reduce the bond. All rods shall be thoroughly cleaned before being fabricated. Pitted and defective rods shall not be used. No welding of rods to obtain continuity shall be allowed unless approved by the Employer's Engineer. If welding is approved, the work shall be carried out as per IS: 2751 according to the best modem practices and as directed by the Employer's Engineer, in all cases of important connections, test shall be made to prove that the joints are of full strength of bars welded. Special precautions, as specified by the Employer's Engineer, shall be taken in the welding of cold worked reinforcing bars and bars other than mild steel.

12.4. LAPS

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Laps and splices for reinforcement shall be 50 time the diameter of such reinforcement. Splices in adjacent bars shall be staggered and the locations of all splices, except those specified on the approved drawings, shall be approved by the Employer's Engineer. The bars shall not be lapped unless the length required exceeds the maximum available lengths of bars at site.

12.5. BENDING

Reinforcing bars supplied bent or in coils, shall be straightened before they are cut to size. Straightening of bars shall be done cold and without damaging the bars.

All bars shall be accurately bent according to the sizes and shapes shown on the approved details working drawings/bar bending schedules. They shall be bent gradually by machine or other approved means. Reinforcing bars shall not be straightened and rebent in a manner that will injure the material, bars containing cracks or splits shall be rejected. They shall be bent cold, except bars of over 25mm in diameter which may be bent hot if specifically approved by the Employer's Engineer. Bars which depend for their strength on cold working, shall not be bent hot. Bars bent hot shall not be treated beyond cherry red colour (nor exceeding 845°C) and after bending shall not be allowed to cool slowly without quenching. Bars incorrectly bent shall be used only if the means used for straightening and re-bending be such as shall not, in the opinion of the Employer's Engineer, injure the material. No reinforcement shall be bent when in position the work without approval, whether or not it is partially embedded in hardened concrete. Bars having kinks or bends other than those require by design shall not be used.

12.6. FIXING

Reinforcement shall be accurately fixed by any approved means and maintained in the correct position shown in the approved drawings by the use of blocks, spacers and chairs, as per IS: 2502, to prevent displacement during placing and compaction of concrete. Bars intended to be in contact at crossing points shall be securely bound together at all such points with number 16 gauge annealed soft iron wire. The vertical distances required between successive layers of bars in beams or similar members shall be maintained by the provision of mild steel spacer bars at such intervals that the main bars do not perceptibly sag between adjacent spacer bars.

12.7. COVER

Nominal cover shall be as per IS 456.

Increased cover thickness shall be provided for surfaces exposed to the action of harmful chemicals or exposed to earth contaminated by such chemicals, acid, alkalis, saline atmosphere, sulphurous smoke etc. and such increase of cover may be

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between 15 mm and 50 mm beyond the figures mentioned here as may be specified by the Employer's Engineer.

The correct cover shall be maintained by cement mortar cubes or other approved means. Reinforcement for footings, grade beams and slabs on sub-grade shall be supported on precast concrete blocks as approved by the Employer's Engineer. The use of pebbles or stones shall not be permitted.

The 28 days crushing strength of cement mortar cubes/ precast concrete cover blocks shall be at least equal to the specified strength of concrete in which these cubes/ blocks are embedded.

The minimum clear distance between reinforcing bars shall be 50 mm.

12.8. INSPECTION

Erection and secured reinforcement shall be inspected and approved by the Employer's Engineer prior to placement of concrete.

12.9. WELDING OF REINFORCEMENT

Reinforcement which is specified to be welded shall be welded by a process which conforms with the requirements of IS: 2751 and which the Contractor can demonstrate by bend and tensile tests will ensure that the strength of the parent metal is not reduced and that the weld possesses a strength not less than that of the parent metal. The welding procedure established by successful test welds shall be maintained and no departure from this procedure shall be permitted.

Weld in positions other than those shown on the approved drawings shall not be permitted. Tack welding lightly secure reinforcement in place will be permitted subject to approval of the Employer's Engineer.

12.10. SUPPLY OF REINFORCING BARS

Steel reinforcement, such as M.S. bars high yield strength deformed bars etc. required for the works shall be procured by Contractor. The Contractor shall arrange for transport, loading, unloading and storage at the work sites. The Contractor should plan the procurement of steel in such a way that at least required quantity of steel of specified sizes is available at site for 3 months period.

Steel brought on site shall be stored in a proper manner as approved by the Employer's Engineer so as to avoid distortion, deterioration and corrosion. The Contractor shall maintain proper registers for the steel account, showing the steel received at site, steel used, and the balance stock on site, to the entire satisfaction of the Employer's Engineer.

13. SUPPLY, FABRICATION & ERECTION OF STRUCTURAL STEEL

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13.1. MATERIAL

All Structural Steel shall be E 250 or E 410 , conforming to IS 2062 and structural hollow section shall be 310YST Grade, conforming to IS 4923.

All steel material (plates and structural) covered in this Contract shall be supplied by the Contractor, in this connection the Contractor shall furnish to the Employer's Engineer duplicate copies of all mill orders covering the material ordered by him for this project and also the test reports received from the mills for the Employer's Engineer's check and information.

It is not the intention of the Corporation that all the steel materials to be supplied by the Contractor for the work shall be specially purchased from the rolling mills. The Contractor's stock material may be used, provided the mill test reported identified with the materials, satisfactorily demonstrate, the specified grade and quality. The Employer's Engineer shall have the right to test samples to prove authenticity of the test certificates produced by the Contract or at the Contractor's cost. All steel materials shall be in sound, condition, of recent manufacture, free from defects, loose mill scale, slag intrusions, laminations, pitting, flaky rust etc., and be of full weight or thickness specified. The length/ sizes of steel sections and plates shall be as supplied by the steel mills.

Unidentified stock material may be used, only with the prior permission from the Employer's Engineer in writing, for short sections for minor importance or for small unimportant works and connections where, in the opinion of the Employer's Engineer, the quality of such materials would not adversely affect the strength and/or durability of the structure. The Employer's Engineer may also permit use of such material for other works, if adequate random samples taken out and tested demonstrate conformity with the specification and requirement for the work in view.

13.2. SUB-STITUTIONS

Where the Contractor, in order to accommodate his materials in stock, desires to substitute structural steels or plates for the sizes shown on approved drawings, such substitutions shall be made only after authorization in writing by the Employer's Engineer. The Employer's Engineer may also direct that substitution be made, when considers such substitutions to be necessary.

13.3. FABRICATION

a) General

All workmanship and finish shall be of the best quality and shall conform to the best approved method of fabrication. All materials shall be finished straight and shall be machined true and square where so specified. All holes and edges shall be free of burns. Shearing and chipping shall be neatly and accurately done and all portions of

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work exposed to view shall be neatly finished. Unless otherwise directed/approved, reference may be made to the American Institute of Steel Construction Manuals for providing standard fabrication tolerance. Material at the shops shall be kept clean and protected from weather.

b) Connections

Shop connections shall be effected either by welding, riveting or bolting as specified or as indicated on approved drawings. Type and quality of bolts shall be in accordance with IS stipulations. However, standards MS bolts to IS: 1363 may be used for field connections for light members such as purloins, staircase stringers, hand railings, and landing beams. Where necessary, tapered washers or flat washers or spring washers shall be used under with nuts or the heads depending upon whether the nuts or the heads are turned to tighten the bolts. The length of the bolt shall be such that atleast one thread of the bolt projects beyond the nut, except in case of high strength friction grip bolts where this projection shall be atleast three limes the thread pitch. In all cases where bearing is critical, the unthreaded bolt shall bear on the members assembled. A washer of adequate thickness shall be provided to exclude the threads from the bearing thickness, if a longer grip bolt has to be used for this purpose. All bolts, nuts, washers, rivets, electrodes, screw, etc., shall be supplied/brought to site 10 % in excess of the requirement in each category and size. All members likely to collect rainwater shall have drain holes provided. Not more than one shop splice shall be provided to make up the full length of a member.

c) Straightening

Rolled material, before being worked, shall be straightened, unless otherwise specified. If straightening or flattening is necessary, it shall be done by methods that will not injure the material. Long plates shall be straightened by passing through a mangle or leaving rolls and structural shapes by the use of mechanical or hydraulic bar/ section straightening machines. Heating or forging shall not be resorted to without the prior approval or directions of the Employer's Engineer in writing.

d) Cutting

Cutting may be shearing, cropping, sawing or machine flame cutting if permitted by the Employer's Engineer. All re-entrant comers shall be shaped notch-free to a radius of atleast 12mm. Sheared or cropped edges shall be dressed to a beat workmanlike finish and shall be free from distortion and burrs. The kerf on machine flame cut edges shall be removed. Where machine flame cutting is permitted for high tensile steel, special care shall be taken to leave sufficient margin and all flame hardened material shall be removed by machining/ edge planning. Hand flame cutting shall be undertaken only if so permitted by the Employer's Engineer and shall only be carried out by and expert in such work. Hand flame cut edges shall be ground smooth and straight.

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e) Rolling and Forming

Plates, channels, RSJ etc. for circular bins, bunkers, hoppers, gantry girders, etc., shall be accurately laid off and rolled or formed to required profile/shape. Adjacent sections shall be match-marked to facilitate accurate assembly, welding and erection on site.

f) Punching and Drilling

Holes in secondary members such as purlins, girts, lacing bars, etc may be punched nail size through materials not over 12 mm thick. Holes must be clean cut, without burr or ragged edges. Holes for all other connections shall be drilled accurately and the burrs removed effectively. Where several parts are to be connected to very close tolerances, such parts shall be first assembled, then tightly clamped together and drilled through. Sub-punching may be permitted before assembly, provided the holes are Punched 3 mm smaller in diameter than the required size and reamed after assembly to the full diameter. The thickness of material punched shall not, even in such case, exceed 16 mm. When batch-drilling is carried out in one operation through two or more separable parts, these parts shall be separated after drilling and the burrs removed. Holes for turned and fitted bolts shall be drilled to a slightly smaller diameter and reamed to a diameter equal to the nominal diameter of the shank or barrel subject to H 8 tolerances specified in IS: 919. Where reamed members are taken apart for shipping or handling, the respective pieces reamed together shall be so marked that they may be reassembled in the same position in the final setting up. No inter-change of reamed parts will be permitted, Poor matching, over-drilling, and ovality in holes shall be a cause for rejection. Burning holes with gas is strictly prohibited.

(g) High Strength Friction Grip Bolting

High strength friction grip bolts and nuts shall conform to IS: 3757. Installation of high strength friction grip bolts in joints shall comply with IS: 4000. The diameter of the bolt hoes must not be more than 1.5mm larger than the nominal diameter of the bolt. All contact surfaces in a connection including those associated with the not heads, nut in a washers, shall be free of scale, burrs, dirt and other foreign matter tending to inhibit uniform sealing of the joint components/ nuts and washers need not be removed. All fasteners in a joint shall be tightened to a tension equal to or greater than the specified proof load show in the following table, either by the calibrated method or the turn-of-nut method.

Tightening may be achieved by use of pneumatic powered impact wrenches, long-handled manual torque wrenches with or without torque multipliers or electric wrenches. A hardened washer shall be placed under the element being turned. Bolts shall be tightened at the most rigid portion of the joint, proceeding towards the free edges.

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When using the calibrated wrench method, adjustable power impact wrenches and manual torque wrenches shall be calibrated to induce bolt tensions of 5 percent in excess of the proof load values for each size of bolt to be used in installation. Every wrench shall be calibrated by having it tighten a minimum of three bolts of the same diameter, in a hydraulic tension measuring device. Calibration shall be repeated whenever a wrench is required to tighten a different size bolt, or atleast once each working day if there is no change in the bolt size. Impact wrenches shall be set so as to shall or cut at the torque effort corresponding to the prescribed fastener tension. When manual torque wrenches are used, the torque indication corresponding to the calibrating tension shall be determined and taken as the job standard. Torque measurements shall be read while the turned element is in tightening motion. As subsequent tightening of bolts in any particular assembly is liable to loosen bolts already tightened, all bolts must be "Touched up".

When using the turn of nut method a sufficient number of bolts must initially be 'snugged up' to bring the connection components into full contact, by either a standard power impact wrench or an ordinary spud wrench. Snug tight condition shall indicate the point at which the turned element ceases to rotate freely and the impact wrench begins to impact or if a common spud wrench is employed, snug tightness shall mean the position resulting from the full effort of a man. Subsequently, the remaining bolts in the joints shall also be brought to snug tightness. All nuts and projecting bolt points shall be matchmarked in this starting position and all bolts in the joints relevant specifications for the bolt length and type of connection proceeding in an orderly fashion from the most rigid portion of the joint, towards the free edges.

If the finger-tight condition is used as a starting point extra full turns shall be taken to correspond to one-half turn from the snug tight position.

Load indicating bolts or load indicating washers may be used if so approved by the Employer's Engineer in writing.

Inspection after tightening of bolts shall be carried out as stipulated in the appropriate standards depending upon the method of tightening and the type of bolt used.

(h) Welding

Electrodes for shielded-arc manual welds shall comply with the requirement of IS: 814, and shall be approved make.

The electrodes for manual arc welding shall be suitable for use in the position and type of work, as laid down in the above specifications and as recommended by the manufacturers. Electrodes classification group 1 or 2 as given in IS: 814 shall be used

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for welding steel conforming to IS: 2062 and electrodes shall conform to IS: 1442 for steel conforming to IS: 8500. Joints in materials above 20 mm thick and all-important connections shall be made with low hydrogen electrodes.

The wire and flux combination for submerged arc welding shall conform to the requirements for the desired application as laid down in IS: 3613. The weld metal deposited by the submerged arc process shall have mechanical properties not less than that specified by the relevant standard.

Electrodes flux covering shall be sound and unbroken. Broken or damaged coating shall cause the electrodes to be discarded. Covered electrodes for manual-arc welding shall be properly stored in an oven prior to use in a manner recommended by the manufacturer and only an hour's quota shall be issued to each welder from the oven.

Electrodes larger than 5 mm diameter shall not be used for root-runs in butt welds.

Welding plant and accessories shall have capacity adequate for the welding procedure laid down and shall satisfy appropriate standards and be of approved make and quality. The Contractor shall maintain all welding plant in good working order. All the electrical plant in connection with the welding operation shall be properly and adequately earthed and adequately earthed and adequate means of measuring the current shall be provided.

All welds shall be made only by welders and welding operators who have been properly trained and previously qualified by tests to perform the type of work required as prescribed in the relevant applicable standards.

All welds shall be free from defects like blow holes, slag inclusions, lack of penetration, undercutting, cracks etc. All welds shall be cleaned of slag or flux and show uniform sections, smoothness of weld metal, featheredges without overlap and freedom from porosity.

Fusion faces and surfaces adjacent to the joint or a distance of atleast 50 mm on either side shall be absolutely free from grease, paint, loose scales, moisture or any other substance which might interfere with welding or adversely affect the quality of the weld. Joint surfaces shall be smooth, uniform and free from fins, tears, laminations, etc. Preparation of fusion faces shall be done in accordance with the approved fabrication drawings by shearing, chipping, machining or machine flame cutting except that shearing shall not be used for thickness over 8 mm.

In the fabrication of cover-plated beams and built up members all shop splices in each component part shall be made before such component part is welded to other parts of the member. Wherever weld reinforcement interferes with proper fit-up between components to be assembled for welding, these welds shall be ground flush prior to assembly.

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Members to be joined by fillet welding shall be brought and held as close together as possible and in no event shall be separated by more than 3 mm. If the separation is 1.5 mm or greater the fillet weld size shall be increased by the amount of separation. This shall only apply in the case of continuous welds. The fit-up of joints at contact surfaces which are not completely sealed by welds shall be close enough to exclude water after painting.

The separation between the two surfaces of lap joints and butt joints with backing plate shall not exceed 1.5 mm. Abutting parts to be butt welded shall be carefully aligned and the correct root gap maintained throughout the welding operation. Misalignments greater than 25 % of the thickness of the thinner plate or 3mm,whichever is smaller, shall be corrected and in making the correction the parts shall not be drawn into a slope sharper than 2° (1 in 27.5).

Pre-qualified welding procedures recommended by appropriate welding standards and know to provide satisfactory welds shall be followed .A welding procedure shall be prepared by the Contractor and submitted to the Employer's Engineer for approval before start of welding. This shall include all details of welding procedures with reference to provisions of IS: 9595 and IS: 4353.

Approval of the welding procedure by the Employer's Engineer shall not relieve the Contractor of his responsibility for correct and sound welding without undue distortion in the finished structure.

Submerged arc, automatic or semi-automatic welding shall generally be employed. Only where it is not practicable to use submerged arc welding, manual arc welding may be resorted to.

Voltage and current (polarity of direct current is used) shall be set accordingly to the recommendations of the manufacturer of the electrode being used and suitability of thickness of material, joint form etc.

The work shall be positioned for flat welding wherever practicable and overhead weld shall be avoided.

No welding shall be done when the surface of the member is wet, not during periods of high wind unless the welding operator and the work are properly protected.

In joints connected by fillet welds, the minimum sizes of single fillet welds or first runs and minimum full sizes of fillet welds shall conform to the requirements of IS: 816 and IS: 9595.

All complete penetration butt welds made by manual arc welding, except when produced with the aid of backing material or welded in flat position, from both sides in square-edge material not over 8mm thick with root opening not less than one-half the thickness of the thinner part joined, shall have the root of the initial layer gouged

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out on the back side before welding is a started from that side, and shall be so welded as to secure sound metal and complete fusion throughout the entire cross section.

Butt welds shall be terminated at the ends of a joint in a manner that will ensure their soundness. Where abutting parts are 20 mm or more than in thickness, run-on and run-off plates with similar edge preparation and having a width not less than the thickness of the thicker part jointed shall be used. These extension pieces shall be removed upon completion of the weld end, the ends of the weld made smooth and flush with the abutting parts. Where the abutting parts are thinner than 20 mm, the extension pieces may be omitted but the ends of the butt welds shall then be chipped or gouged out to sound, metal and side welded to fill up the ends to the required reinforcement.

Each layer of a multiple layer weld except root and surface runs may be moderately peened with light blows from a blunt tool. Care shall be exercised to prevent scaling or flaking of weld and base metal from over peening.

No welding shall be done on base metal at a temperature below 5°C. Base metal shall be preheated to the temperature given in the table below prior to tack welding or welding. When base metal not otherwise required to be preheated, is at a temperature below 0°C, it shall be preheated to at least 20°C prior to tack welding or welding. Preheating shall bring the surface of the base metal within 75 mm of the point of welding to the specified preheat temperature, and this temperature shall be maintained as minimum inter pass temperature while welding is in progress.

Thickness of the thickest part at point of welding	Minimum preheat and inter pass temperature			
	Other than low hydrogen electrodes		Low hydrogen electrodes	
	IS:2062 Steel	IS:8500 Steel	IS:2062 Steel	IS:8500 Steel
Upto 20 mm inc.	None	Welding	None	10°C
Over 20 mm to 40 mm inc.	65°C	With this process not allowed	10°C	65°C
Over 40 mm to 63 mm inc.	110°C	-	95°C	110°C
Over 63 mm	150°C	-	110°C	150°C

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Electrodes other than low-hydrogen electrodes shall not be permitted for thickness of 75 mm and above.

Before commencing fabrication of a member or structure in which welding is likely to result in distortion and/or locked up stresses, a complete programmed of fabrication, assembly and welding shall be made and submitted to the Employer's Engineer for approval. Such a programme shall include, besides other appropriate details, full particulars in regard to the following:

a) proposed pre-bending in components such as flanges and presetting of joints to offset expected distortion.

b) Make up of sub-assemblies proposed to be welded before incorporation in final assembly.

c) Proposed joint forms, classification of wore and flux or covered electrodes, welding process including fitting and welding sequence with directions in which freedom of movement is to be allowed.

d) Proposed number, spacing and type of strong backs, details of jigs and fixtures for maintaining proper fit up and alignment during welding.

c) Any other special features like assembling similar members back to back or stress relief.

So desired by the Employer's Engineer, mock up welding shall be carried out at the Contractor's cost to establish the efficiency of the proposed programme, with any modification suggested by the Employer's Engineer, in limiting distortion and/ or residual stress to acceptable levels. Such modification will not relieve the Contractor of any of his responsibilities,

i) Inspection of Welds

All welds shall be inspected for flaws as described elsewhere under "Inspection".

In case the tests uncover defective work, the Contractor shall correct such defects at his own cost, and prove the soundness of rectified work.

The correction of defective welds shall be carried out as directed by the Employer's Engineer without damaging the parent metal. When a crack in the weld is removed, magnetic particle inspection or any other equally positive means as prescribed by the Employer's Engineer shall be used to ensure that the whole of the crack and material upto 25 mm beyond each end of the crack has been removed. Cost of all such tests and operations incidental to correction shall be to the Contractor's account.

j) Tolerance

The dimensional and weight tolerance for rolled shapes shall be in accordance with IS: 1852 for indigenous steel and equivalent applicable codes for imported steel. The

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acceptable limits for straightness (sweep and camber) for rolled or fabricated members are:

Struts and columns - L/1000 or 10 mm whichever is smaller

For all other members not primarily in compression such purlins,girts,bracing and the web members of trusses latticed girders - L/500 or 15 mm whichever is smaller

where L is the length of finished member or such less length as the Employer Engineer may specify.

A limit for twist prior to erection - L/1500

In box girders and heavy columns

Other members - L/1000

The twist of the member between any two sections shall be measured with the web vertical at one of the sections.

Tolerance in specified camber of structural members shall be ±3 mm.

Tolerance is specified length shall be as follows:

Type of Member	Tolerance
A column finished for contact bearing	±1 mm
Other members (e.g. beams) under 10m	+0 & -3 nun
Other members (e.g. beams) under 10 m long and over	+0 & -5 mm
End of members	
Beams to beam and beam to column connections - Where the abutting parts are to be joined by butt welds, permissible deviation from the squareness of the end is:	
Beam upto 600 mm in depth -	1.5 mm
Beans over 600 mm in depth -	1.5mm every 600mm depth, to a max. of 3 mm
Where abutting parts are to be joined by bolting through cleats or end plates, the connections require closer tolerance, permissible deviation from the squareness of the end is:	
Beams upto 600 mm in depth -	1.0 mm
Beams over 600 mm in depth -	1.0 mm every 600 mm depth, to a

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	max. of 2.0 mm

Butt Joints

For full bearing, two abutting ends of columns shall first be aligned to within 1 in 1000 of their combined length and then the following conditions shall be met:

i) Over at least 80 % of the bearing surface the clearance between the surfaces does no exceed 0.l mm

ii) Over the remainder of the surfaces the clearance between the surfaces does not exceed 0.3 mm

Where web stiffeners are designed for full bearing on either the top flange or bottom flange or both, at least half the stiffener shall be in positive contact with the flange. The remainder of the contact face could have a maximum gap of 0.25 mm.

Depth of Members

Aceeptable deviation from the specified overall depth

For depth of 900 mm and under : ± 3 mm

For depth over 900 mm and under : ± 5 mm

1800 mm

For depth over 1800 mm : +8 mm/-5mm

Web Plates

An aceeptable deviation from flatness in girder webs in length between the stiffeners or in length equal to the girder shall be 1/50th of the total web depth.

Flange Plates

A reasonable limit for combined warpage and tilt on the flange of a built up member is 1/200th of the total width of flange or 3 mm whichever is smaller measured with respect to centerline of flange.

Lateral deviation between centerline of web plate and centerline of flange plate at contact, in the case of built up sections shall not exceed 3 mm.

End Milling

Colum bearing on each other of resting on base plates and compressionjoints designed for bearing shall be milled true and square to ensure propoer bearing and alignment. Base plates shall also have their surfaces milled true and square.

13.4. INSPECTION

The Contractor shall give due notice to the Employer's Engineer in advance on the materials or workmanship getting ready for inspection. All rejected material shall be

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promptly removed from the shop and replaced with new material for the Employer's Engineer's approval/inspection. The fact that certain material has been accepted at the Contractor's shop shall not invalidate final rejection at site by the Employer's Engineer if it fails to be in proper condition or has fabrication inaccuracies which prevents proper assembly. No material shall be painted or dispatched to site without inspection and approval by the Employer's Engineer unless such inspection is waived in writing by the Employer's Engineer.

Shop inspection by the Employer's Engineer or his authorized representative or submission of test certificate and acceptance thereof by the Employer's Engineer shall not relieve the Contractor from the responsibility of furnishing material conforming to the requirements of these specifications, nor shall it invalidate any claim which the Employer may make because of defective or unsatisfactory material and / or workmanship.

The Contractor shall provide all the testing and inspection services and facilities for shop work except where otherwise specified. The Contractor's inspection work shall be under the control of a competent Chief Inspector whose primary responsibility is inspection, reporting to management and not to production departments.

For fabrication work carried out on site, the same standard of supervision and quality control shall be maintained as in shop fabricated work. Inspection and testing shall be conducted in a manner satisfactory to the Employer's Engineer.

Inspection and tests on structural steel members shall be as set forth below:

a) Material Testing

If mill testing reports are not available for any steel materials the same shall be got tested by the Contractor to the Employer's Engineer's satisfaction to demonstrate conformity with the relevant specification.

b) Test on Welds

Magnetic Particle Test

Where the root and intermediate passes of a weld are examined by magnetic particle testing, such testing shall be carried out throughout its entire length in accordance with IS: 5334 or ASTM specification E-I09. In the case of completed welds, such tests shall be carried out in accordance with IS: 5334 or ASTM specification E-109 or E-138 as decided by the Employer's Engineer. If heat treatment is performed, the completed weld shall be examined after the heat treatment. All defects shall be repaired and retested. Magnetic particle tests shall be carried out using alternating current. Direct current may be used with permission of the Employer's Engineer.

Liquid Penetrant Inspection

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13.6. CHEQUERED PLATE

GRP Chequered plates used shall be minimum 6 mm thick and shall be capable of carrying a minimum live load of 750 kg/sq metre unless otherwise required or as specified or as specified by Employers Engineer.. Chequered plate shall be fixed by 8 mm diameter non corrosive steel screws with counter sunk heads at a maximum spacing of 400 mm. Members supporting the chequered plate shall have matching holes tapped in them. The chequered plate pattern shall be approved by the Employer's Representative.

13.7. DISSIMILAR METALS

The Contractor shall not use fixtures and fittings for metal work including pipe work, in which dissimilar metals are liable to lead to galvanic action when placed in permanent contact with each other. Mild steel surfaces in contact with aluminium alloy shall be galvanised or otherwise protected. Where faces of aluminium join, only aluminium bolts, nuts washers and screws shall be used. Aluminium shall be fixed to structures using galvanised mild steel bolts, nuts and screws, tufnol sleeves and washers.

13.8. GALVANISED STEELWORK

Galvanising shall be carried out in accordance with IS: 6159 and IS: 2629. All rough edges and burrs shall be neatly filed off, all holes required are to be drilled, and all fabrication shall be completed before the work is galvanised. No galvanised metal shall be painted until the Employer's Engineer has inspected the coating.

13.9. ACCESS LADDERS

Access ladders shall be made of mild steel and galvanised as specified. Rungs shall be 20mm diameter.

Ladders shall be fixed at the top and the bottom and at intervals not exceeding 2.5m and the rungs shall not be less than 200 mm from the wall, secured by galvanised ragbolts of an approved type.

Ladders may also be fixed at the bottom by bending the stringers and bolting to the floor.

13.10. MAKING OF MEMBERS

After checking and inspection, all members shall be marked for identification during erection. This mark shall correspond to distinguishing marks on approved erection drawings and shall be legibly painted and stamped on it. The erection mark shall be stamped with a metal dye with figures at least 20mm high and such optimum depth as to be clearly visible, even after a member is galvanised.

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In the case of welds examined by Liquid Penetrant Inspection, such tests shall be carried out in accordance with ASTM E-165 or I.S. 3658. Al defects shown shall be repaired and rechecked.

c) Radiograph Inspection

All full strength butt welds shall be radiographed in accordance with the recommended practice for radiographic testing as per IS:2595.

d) Dimensions, Workmanship & Cleanliness

Members shall be inspected at all stage of fabrication and assembly to verify that dimensions, tolerances, alignment, surface finish and painting are in accordance with the requirements indicated in the specification and approved drawings.

e) Inspection or Test Failure

In the event of any failure of members to meet an inspection or test requirement, the Contractor shall notify the Employer's Engineer or his authorized representative. The Contractor must obtained permission from the Employer's Engineer before repair is undertaken. The quality control procedures to be followed to ensure satisfactory repair shall be subject to approval by the Employer's Engineer.

The Employer's Engineer has the right to specify additional inspection or testing as he deems necessary, and the additional cost of such testing will be borne by the Contractor.

The Contractor shall maintain record of all inspection and testing which shall be made available to the Employer's Engineer or his authorized representative.

13.5. STAIRWAYS & INTERMEDIATE LANDINGS & GRATINGS

All stairways and intermediate landings shown and/ or listed on the drawings or specifications shall be fabricated as per specifications drawings as a complete unit and shall include grating treads, landings, hangers, brackets, struts, clips, bracings, etc. as necessary for erection. The gratings shall be capable of sustaining a minimum safe live load of 750 kg/sq metre of plan are unless otherwise specified or required and shall have a minimum thickness of 25 mm. Treads and landings shall be suitable for the prescribed; loadings and be furnished complete with one-piece standard non-slip abrasive nosing of approved type. The maximum width of openings in gratings shall not exceed 100 mm and the maximum spacing of bearing bars shall not exceed 40 mm. The minimum thickness of main bare shall be 5mm. Gratings shall be hot dip galvanised and painted. The grating pattern shall be approved by the Employer's Engineer.

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All erection marks shall be on the outer surface of all sections and near one end, but clear of bolts holes. The marking shall be so stamped that they are easily discernible when sorting out members. The stamped marking shall be encircled boldly by a distinguishable paint to facilitate easy location.

Erection marks on like pieces shall be on identical location. Members having length of 7m or more shall have the erection mark at both ends. In addition, colour code marking shall be clearly painted on the member in the manner specified.

13.11. ERRORS

Any error in shop work which prevents proper assembling and fitting up of parts in the field by moderate use of drift pins or moderate amount of reaming will be classified by the Employer's Engineer as defective workmanship. All charges incurred by the Corporation either directly or indirectly because of the poor workmanship will be deducted from the amount due to the Contractor before payment is made. In case the Employer's Representative/Engineer choose to reject the material because of poor workmanship, the cost of all handling and returning the material of the Contractor, if he so desires shall entirely be borne by the Contractor. All the replacement materials shall be supplied free and in all such cases, the cost of handling, transporting and delivery to site also be borne by the Contractor.

13.12. PAINTING

Fabricated Steel material, where specified, shall be receive protective paint coating as per Table 29 of IS800-2007. All paint shall be of approved make and shade and to the complete satisfaction of the Employer's Engineer.

13.13. HANDLING AND STORAGE

No dragging of steel shall be permitted. All steel shall be stored 300mm above ground on suitable packing to avoid damage. It shall be stored in the order required for erection, with erection marks visible. All storage areas shall be prepared and maintained by the Contractor. Steel shall not be stored in the vicinity of areas where excavation or grading will be done and, if so stored temporarily, this shall be removed by the Contractor well before such excavation and/ or grading commence to a safe distance to avoid burial under debris.

Scratched or abraded steel shall be given a cost of primer for protection after unloading and handling prior to erection. All milled and machined surfaces shall be properly protected from rust/ corrosion and also from getting damaged by suitable coating.

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13.14. ANCHOR BOLTS AND FOUNDATIONS

The Contractor shall carefully check the location and layout of anchor bolts embedded in foundations constructed to ensure that the structures can be properly erected as specified. Any discrepancy in the anchor bolts/ foundations shall be reported to the Employer's Engineer.

Anchor bolts shall be provided with three nuts on upper threaded portion, one of which shall be used for levelling the column base to the required elevation and one will be a lock nut. All shim stock, required for keeping the specified thickness of grout and in connection with erection of structures on foundations, crane brackets or at any other locations shall be of good mild steel plates unless specified and shall be supplied by the Contractor at his cost.

All cleaning and preparing the foundation area shall be carried out by the Contractor at no extra cost.

Where beams bear in pockets or on walls, bearing plates shall be set and levelled as part of the work. All grouting under column base plates or beam bearing plates shall also be carried out by the Contractor.

13.15. ASSEMBLY & CONNECTIONS

Field connections may be affected either by riveting, bolting, welding or by use of high strength friction grip bolts as specified or required.

All welding shall be in accordance with IS: 816 and IS: 9595. All assembling shall be carried on a level platform.

Drifts shall be used only for drawing the work to proper position and must not be used top such an extent as to damage the holes. Size of drifts, larger than the nominal diameter of hole shall not be used. Any damaged holes or burrs must be rectified to the satisfaction of the Employer's Engineer.

Corrections of minor misfits and reasonable amount of reaming and cutting or excess stock from rivet shall be considered as a part of erection. Any error in shop which prevents proper fit on a moderate amount of reaming and slight chipping or cutting shall be immediately reported to the Employer's Engineer.

13.16. ERECTION

All structural steel shall be erected as shown on the specification drawings and as per an erection scheme approved by the Employer's Engineer. Proper size steel cable slings etc., shall be used for hoisting. Guys shall not be anchored to existing structures, foundations etc., unless so permitted by the Employer's Engineer in writing. The Contractor shall furnish the necessary non-inflammable staging and

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hoisting material, or equipment required for the erection work sand shall remove and take them away after completion of the job.

Structural steel frames shall be erected plumb and true. All steel column and beams shall be checked for plumb and level individually before and after connections are made. Temporary bracings shall be introduced wherever necessary to tame care of all loads to which the structure may be subjected. Such bracings shall be left in place as long as may be required for safety and stability.

As erection progresses, the work shall be securely bolt to take care of all dead load, wind, seismic and erection stresses.

No riveting or welding or final bolting shall be done until the structure has been properly aligned and approved by the Employer's Engineer. No cutting, hating or enlarging of the holes shall be carried out without the prior approval of the Employer's Engineer.

After steel has been erected, all bare and abraded spots, rivet heads, field welds, bolt heads and nuts shall be spot painted with primer specified. Before paint is applied the surface shall be dry and free from dust, dirt, scale and grease. All surfaces in accessible after erection shall receive two coats of the approved paint before erection.

The Employer's Engineer shall have free access to all parts of the job during erection and all erection shall be subject to his approval. In case of faulty erection all such dismantling and re-erection required will be at the Contractor's cost. No paint shall be applied to rivet heads of field welds or bolts until these have been approved by the Employer's Engineer.

13.17. TOLERANCES

Tolerances mentioned below shall be achieved after the entire structure or part thereof is in line, level and plumb.

Beams

Deviation in difference of bearing levels	Depth<1800 mm : 6mm
Of beam from the true difference	Depth>1800 mm : 10mm
Deviation in sweep of beams in horizontal plane maximum of 10 mm	1/1000 of span in mm subject to

Crain girders and rails

Shift in centre line of crane rail with respect to centre line of web girder	±5 mm
Shift in plan of alignment of crane rail with respect to true axis of crane rail at any point	±5 mm

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difference in alignment of crane rail in plan measured between ant two points 2 meters apart along rail	±1 mm
Deviation in crane track with respect to true gauge	
For track gauges upto and including 15 m	±5 mm
For track more than 15 meters where S in Meters in true gauge	±5 [5+0.25(5-15)]
Deviation in the crane rail level at any point true level whichever is less	1/1200 of the gauge from distance or +10 mm
Difference in the crane rail actual levels between any two points 2 meters apart along the rail length	±2 mm

Columns

Deviation of column axes at foundation top level with respect to true axes

In longitudinal direction	±5 mm
In lateral direction	±5 mm

Deviation in the level of bearing surface of columns at foundation top with respect to true level ±5 mm.

Out of plumbness (verticality) of column from true vertical axis, as measured at column top

11.4.1.1.1. For columns upto and including 15 m in height

11.4.1.1.2. For columns exceeding 15 m in height

Deviation in straightness in longitudinal and transverse planes of column at any point along the height

13.18. **Breaking of Concrete, Brickwork, Blockwork and Stone Masonry**

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The Contractor shall demolish brickwork, blockwork, stone masonry or concrete either plain or reinforced, as indicated on the drawings or as required as per project contract. The waste material shall be at once removed from the location and dumped at a suitable location or transported and dispose of as directed by the PMC/Employer's Engineer. The Contractor shall observe all precaution by way of necessary propping, strutting etc., to the satisfaction of the Employer's Engineer, to ensure that the adjacent framework is not damaged. Any damage to any adjacent framework, brickwork or blockwork resulting from the negligence of the Contractor shall be made good at the Contractor's cost, to the satisfaction of the Employer's Engineer.

14.0 BUILDING WORK

14.1. GENERAL

All the building works shall generally comply with the following specifications unless specified otherwise in further description in this part:

Unless otherwise specified, all the building and structure works shall generally comply with the following Employer's Requirements:

a) All building works shall be in reinforced concrete framework.

b) All external walls shall be in 230 mm thick (min.

c) All internal partition walls shall be in 1115 mm thick (min).

d) All internal masonry surfaces shall be finished with 12 mm thick smooth faced cement plaster mortar (1:4). The walls shall be finished with painting and the type of painting shall be in accordance with the one specified in standard specifications (civil work).

e) All external masonry surfaces without rock facing shall be plastered in two coats with sand faced cement plaster in cement mortar (1:4) and shall have total thickness of 20 mm. Waterproofing compound of approved make and quality shall be added to the cement mortar in proportions as specified by the manufacturer.

f) All external surfaces above ground level shall be painted as specified in standard specifications (civil work)

g) Wherever specified, staircases shall be finished as per Drawing treads and 12 mm thick Kota Stone skirting. The rise of stairs shall not exceed 170 mm and minimum width of the tread shall not be less than 275mm.All steps shall have 20 mm nosing .R.C.C. stairways shall be provided to permit access between different levels within buildings. All roof tops and tops of overhead tanks shall be made accessible with ladder provision. Vertical ladders fitted with landing point

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extensions will be permitted where considered appropriate by the Employer's Engineer to access areas not frequently visited.

h) All floor cutouts and cable ducts, etc. shall be covered with pre-cast concrete covers in outdoor areas and MS chequered plates of adequate thickness in indoor areas. All uncovered openings shall be protected with SS-304 hand railing fixed with toe guard.

i) Top railing shall be 32 mm dia, the lower railing shall be 25 mm dia and Vertical railing shall be of 40 NB dia. The Railing should be SS-304 grade.

j) All staircases shall be provided with SS-304 hand railing or as mentioned in Drawing.

k) The reinforced concrete roofs shall be made waterproof by application of approved cement/ lime based waterproofing treatment, guaranteed for 10years. The finished roof surface shall have adequate slope to drain quickly the rainwater to R.W. down-take points.

l) For roofing drainage, uPVC rainwater down-takes with uPVC mouth covered with D.I. grating at top shall be provided. For roof areas up to 40 sqm. minimum two nos. 110mm diameter down-take pipes shall be provided. For every additional area of 40 sq m or part thereof, at least one no. 110 mm OD. down take pipe shall be provide. The RW pipes shall preferably be concealed.

m) Top surface of chajjas and canopies shall be made waterproof by providing a screed layer of adequate slope or application of an approved roof membrane and sloped to drain the rainwater.

n) Building plinth shall be minimum 450 mm above average finished ground level around building.

o) Kerbs to be provided on pathways should be as per relevant sections of the Factory Act.

p) All rooms in the treatment plant building shall be provided with appropriate signboards indicating the function of the rooms involved.

q) Wherever equipment and machinery is required to be moved for inspection servicing, replacement etc, suitable movable gantry of required capacity shall be provided.

r) The design of building shall reflect the climatic conditions existing on site Process buildings shall as far as is possible permit the entry of natural light and the use of glazed panelling shall be kept to a minimum.

s) Emergency exit doorways shall be provided from all buildings in order to comply with local and international regulations. Stairways and paved areas shall be provided at the exit points.

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t) Drinking water shall be supplied from an overhead tank to be constructed on Chemical & Coagulant Storage House. All plumbing work shall be carried out in UPVC pipes

u) Anti-termite treatment process as per IS Specification, timber care ground treatment chemically emulsion 1:3 and creating a chemical barrier under and around the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall and floor along the external perimeter of building, expansion joints, surrounding.

v) Metal Roof sheeting should be of galvanised iron profile sheets (size, shape,colour and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.

w) Specification language for Skylight Translucent sheeting:

The panel shall be nominal 1.5 mm thick, composed of a translucent, thermosetting polyester resin with a thoroughly impregnated glass fibre reinforcing mat (FRP) with or without an integrally bonded translucent film on the weathering face comply with AS/NZS 4256. The profile should match with cladding profile. The fixing shall be done with specially designed Lapseal and weather-tight washer for fixing the translucent sheeting. The profile and properties shall be approved by Employers Engineer before installation

14.2. CEMENT/ LIME MORTAR

Mortar for brickwork and stonework shall be prepared, in accordance with IS: 2250. Cement mortar shall consist of Portland cement and sand in proportions specified elsewhere. Lime mortar for laying of tiles shall consist of one part of cement, 2 parts of lime and 6 parts of sand.

Mortar shall be mixed on clean, hard dry platforms protected from sun and rain. The constituents shall be measured using properly made gauge boxes and shall be thoroughly mixed dry before water is added. Any mortar not used 30 minutes after the water is added shall be discarded.

For lime mortar, lime from burn stone shall be used. It shall be free from ash and impurities and be in the form of lumps and not powder when brought to site. Lime which is damaged due to rain, soaking, moisture or air slaking shall not be used.

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Portland cement for mortar shall comply with IS: 269. Sand for mortar shall comply with IS: 2116 and shall be of the following grading:

I.S. Sieve	Percentage passing by Weight
4.75 mm	98 - 100
2.36 mm	80 - 100
1.18 mm	60 - 80
600 microns	40 - 65
300 microns	10 - 40
150 microns	0 - 10

Sand for mortar shall be from an approved source and shall consist of hard, coarse siliceous grains free from deleterious matter. It shall be stored separately from other sand or fine aggregate and shall be kept covered. The Contractor shall submit samples of sand for mortar for the Employer's Engineer / PMC 's approval if ordered.

14.3. BRICKS

Bricks for common brickwork shall be whole, sound, well burnt clay bricks free from cracks and shall comply with the requirements of IS: 1077. Samples of bricks to be supplied shall be submitted to the Employer's Engineer / PMC for his approval.

Bricks shall not be tipped on the site but shall be carefully stacked by hand in separate stacks. Broken or damaged bricks shall not be used in brickwork.

14.3.1. BRICKWORK

Brickwork shall be built in accordance with the requirements of IS: 2212. Every brick shall be wetted and laid on a full and close joint of mortar on its bed side and end in one operation, joints being fully flushed up as the work proceeds. Previous course shall be wetted if it has dried and the walls shall be brought up evenly with no portion racked up (and not toothed) more than one metre higher than another. All brickwork shall be properly bonded together. Joints shall not exceed 10mm in thickness and shall be raked out a depth of 7.5mm as a key for rendering or plastering. All courses shall be truly horizontal and all perpendiculars shall be strictly plumb and square.

In the cavity walls the two leaves of brickwork shall be bonded with galvanized wall ties 150 mm to 250 mm long as required. The ties shall be built into the horizontal joints as the work proceeds and the space between successive ties shall not exceed 750 mm horizontally nor 250 mm vertically. Ties shall be staggered and shall be laid sloping down towards the outer leaf of the cavity. Cavities shall be kepi free from mortar droppings by the use of suspended battens and temporary openings at the bottom of the wall. Every fourth vertical joint in the external face in the course immediately above the horizontal damp proof courses shall be raked out and left open to form a weep hole. Completed brickwork shall be kept wet for a minimum period of 14 days.

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14.4. CONCRETE BLOCKS

Concrete blocks whether made on or off site shall be manufactured to the shapes, sizes and finishes as specified or directed by the Employer's Engineer and shall comply with the requirements of IS: 2185. The Contractor shall submit full details of his proposed manufacturing arrangements to the Employer's Engineer for his approval before making any blocks for use in the works and shall submit such samples as may be needed to demonstrate the quality of the finished product. Production of blocks shall be of equal standard to the approved sample blocks.

Concrete for blocks shall be minimum Class M-20. Hand mixing shall not be permitted. When ordered by the Employer's Engineer, sample block from any batch shall be tested as specified in IS: 2185. Finished block shall be neatly stacked for storage on firm dry support and shall be covered to protect them from dirt, sun and rain. Damaged blocks shall not be used in the works.

14.4.1. BLOCK WORK

Concrete blockwork shall be laid generally as specified for brickwork above except where specified otherwise or as directed by the Employer's Engineer. The construction of hollow block masonry shall be generally in accordance with IS: 2572. Block work for partition walls shall be laid in stretcher bond. Fair face block work which is not to be plastered shall be neatly pointed as specified.

14.5. UNCOURSED STONE MASONRY

Uncoursed stone masonry shall be built in layers not exceeding 450 mm in height. No stone shall be less in breadth than 14 times its height and less in length than twice in height. Every stone whether large or small shall be laid in its natural bed and set flush in mortar, and the small stones used for wedging or filling being carefully selected to fit the interstices between the large stones. Care shall be taken to see that no dry work or hollow space is left in the masonry. The stones shall be so arranged as to break joints at least every 80mm and long vertical joints of joints shall be avoided. The joints at the face shall be finished off neatly, being struck and smoothed with a trowel, while the mortar is fresh. The upper surface of the work shall be brought to a uniform level at the height of each course. The faces of masonry walls shall be kept in perfect plumb and where batter has to be given it shall be uniform. The stones at all comers and junctions of wall shall be of large sizes and hammer dressed to the concrete angle.

Each stone shall be thoroughly wetted before being used in the work. The masonry shall be kept thoroughly wet during the progress of the work, (care being taken to water it even on Sundays and Holidays, special labour being employed if so required for this purpose) until it becomes hard. As far as practicable, the whole of the masonry shall be raised in one uniform level and no part of the masonry shall be allowed to rise more than 1 metre above the rest to avoid unequal settlement. If raising one part of wall before the other becomes unavoidable the end of the raised portion shall be racked back in steps to prevent cracks developing at the junction of the old and new work. Care shall be taken to see that the sides of the wall are not built separately from

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the hearting, the faces and internal filling being done simultaneously. The stones shall overlap and cross each other as much as possible. No course shall be laid unless the previous close is perfectly set.

At least one header or through stone per square metre of wall face shall be built into the work. The headers or through stones shall be at least 0.05 m2 in area at face and shall have at least 0.025m2 area at the back face. Where the thickness of the wall is more than 600 mm a series of through stones shall be laid through the work so as to form front to back, breaking joints or overlapping each other for at least 150 mm. No stone whose length is less than 600 mm shall be used in such work as a header.

All the through stones shall be marked inside and outside and the marks shall be retained until ordered by the Employer's Engineer / PMC to be removed. Sufficient number of headers shall be collected on site before commencing any masonry work. Where adequate sized through stones are not available in required quantities, the use of pre-cast plain concrete headers in M-20 mix may be permitted at the discretion of the Employer's Engineer / PMC. No extra payment will be made for the provision of substitute headers in concrete.

Quoins shall be 150 mm high and formed of header stones at least 300 mm long. They shall be laid lengthwise alternately along each face and square on their beds, which shall be dressed to a depth of at least 80 mm.

Weep holes 80 mm wide and 150 mm in height shall be provided in retaining walls at the rate of one square metre as specified or directed. They shall be pointed with 1 : 2 cement sand mortar after raking the joints to a minimum depth of 25 mm.

Completed masonry shall be kept wet for a minimum period of 14 days, wet weather newly laid masonry shall be protected from the effects of heavy rainfall by tarpaulins or other approved material.

14.6. POINTING OF UNCOURSED MASONRY

Joints in exposed masonry faces shall be formed while the mortar is still green and shall be finished as flush joints, weathered joints, round-recessed joints or square-recessed joints as directed by the Employer's Engineer. Masonry which is to be rendered or plastered shall have the joints raked out to a depth of 1 5 mm to form a key.

14.7. STONE PITCHING

Stone pitching to slopes shall be carried out where specified or as directed by the Employer's Engineer. Stone for pitching shall be obtained from an approved source and shall be hard, sound, durable, clean and generally uniform as specified. The minimum dimension of any stone shall be at least equal to the specified thickness of the pitching.

After excavation and trimming, slopes to be pitched shall be spread with as 75 mm thick layer of crusher run rock or graded coarse aggregate ranging from 75 mm

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particle size to fines. The slope shall then be hand packed with hard broken rock to a total thickness of 150 mm, each stone being individually placed and rammed home, with smaller stones edged into the cracks. 50 mm dia weep-holes shall be provided where specified at intervals not exceeding two metres in both directions. Joints in stone pitching shall be flushed up with sand/cement mortar on completion.

14.8. RUBBLE STONE PACKING

Rubble used for packing under floors, foundations, etc., shall be hard and durable rock, free from veins, flaws and other defects. The quality and size of the rubble shall be subject to the approval of the Employer's Engineer.

The rubble stone shall be of best variety of black trap / granite / basalt or other approved variety of stone available locally. The stone shall be hard, durable, free from defects and of required size and shall be approved by the consultant before incorporation in the work.

The bed on which rubble soling is to be laid shall be cleared of all loose materials, levelled, watered and compacted and got approved by Employer's Engineer. Small interstices shall be filled with hard clean sand and well-watered and rammed. Cable or pipe trenches if shown in the drawing and as required by the Consultant shall be got done before the soling is started. Over the prepared surface, the stone shall be set as closely as possible and well packed and firmly set. The stones shall be of full height and shall be laid so as to have their bases of the largest area resting on the sub-grade. Soling shall be laid in one layer of 230mm or 150mm or other specified thickness and no stones shall be less than 230mm or 150mm depth or specified thickness of soling with a tolerance of 25mm. After packing the stones properly in position, the interstices between them shall be carefully filled with quarry spoils of stone chips of larger size possible to obtain a hard, compact surface. Spreading of loose spoils or stone chips is prohibited.

All interstices shall be filled with approved murrum. Excess murrum if any over the surfaces shall be removed. Unless otherwise specified, the murrum shall be supplied by the Tenderer at his own cost from the selected areas. The surfaces shall then be watered and consolidated with mechanical or sufficiently heavy wooden tampers and log-rammers as approved by the Consultant to give the required slope or level and dense sub-base. After compaction, the surface shall present clean look. Adequate care shall be taken by the Tenderer while laying and compacting the rubble soling to see that concrete surfaces in contact with soling are not damaged.

14.9. RUBBLE SOLING

Rubble soling for road work including foot paths, culverts, side drains etc. shall be carried out as specified here-in as above for rubble stone soling, as far as they are applicable, with the following additions.

Subgrade for soling shall be prepared by cleaning of all foreign substances including rank vegetation, if any. Any ruts or soft yielding places that appear due

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to improper drainage conditions, traffic, hauling or from any other cause shall be corrected by filling/cutting upto 150 mm and compacted and the Subgrade dressed off parallel to the finished profile and the same shall be approved by the Consultant, before laying of soling. Soling shall be laid in regular lines and staggered joints. The stones shall be laid as closely as possible and packed well. The stones shall be so laid as to have their bases and the target area resting on the Subgrade and in contact with each other.

Soling shall be laid to proper gradient and chamber, which shall be checked frequently to ensure accuracy. Rolling shall then be carried out by a 8 to 10 t power roller and soling consolidated properly shall be lightly sprinkled during rolling, if ordered by the Employers Engineer. The surface thus prepared shall first be passed by the Consultant, after which 40mm to 50mm thick layer of selected hard murrum available from excavation shall be spread over the soling as directed by the Consultant, and rolled again such that the hard murrum gets into the interstices, It shall, however, be ensured that a thin layer of murrum/grit shall remain on the finished surface of soling. The area of soling actually done of specified consolidated thickness limiting to the dimensions as per drg. shall be measured in square metre up to two decimal places.

14.10. FINISHES IN GENERAL

The Contractor shall demonstrate his ability to apply finishes to the standards required under the Contract. If in the opinion of the Employer's Engineer, the demonstrations do not satisfy the standards required, the Employer's Engineer may order the Contractor to employ a specialist firm of subcontractors approved by the Employer's Engineer to carry out all or part of this work.

14.11. FLOOR SCREEDS

Where required or specified, dense concrete floor screeds shall be placed over the structural concrete floor. Before the structural concrete is fully hardened, the surface shall be roughened by wire brushing or pickling in order to expose the aggregate. Immediately before laying the screed, the concrete shall be cleaned with stiff brushes and then thoroughly dampened. Before the screed is laid and after the excess water has been removed, a thin layer of stiff cement grout shall be well brushed into the roughened surface.

Where directed by the Employer's Engineer approved water proofing admixture shall be added to screed concrete in accordance with the manufacturer's recommendations.

Heavy duty screeds shall be in M 20 concrete. The coarse aggregate shall be well graded to a maximum size of 12mm. Light duty screeds shall consist of 1 part Portland cement by weight to 4 parts sand. Water content shall be kept to the minimum

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consistent with providing adequate compaction. Unless otherwise specified, screeding shall be finished to a U2 quality.

Screeds shall be laid to the walls shown in the specification drawings subject to minimum fall of 1 in 120. The minimum thickness of screed shall be 60 mm for heavy duty and 40 mm for light duty. Curing of screeds and quality of materials shall conform to Section C of the specification.

14.12. INDIAN PATENT STONE FLOORING

The Indian Patent Stone Flooring shall be 50nmm in thickness and shall consist of cement concrete mixed in the proportion of 1: 2: 3 (with 12.5 mm chips only) with an admixture of approved water-proofing compound. The least amount of mixing water that will produce a workable mix and will allow finishing without excessive trowelling shall be used. Generally, a water cement ratio of 0.5 should suffice.

It shall be laid, after applying to the surface neat cement slurry, in bays of suitable sizes but not exceeding 6 sq.m. each, and required slope in a chess board alternate panel fashion and neatly finished smooth in red colour where directed with lines drawn as directed. The concrete shall be cast against teakwood stop-off boards, which shall be removed only after the concrete is set.

No dry cement shall be allowed to be used for finishing the surface. Mechanical mixing may be resorted to.

The surface shall be kept well-watered after it is dry, for period of 8 days.

Construction joints shall be formed in between the sequential panels cast, with straight edges, 20 mm deep and 12 mm wide in groove form. These joints on completion of work, shall be cleaned and washed free of dust with the help of brush and shall be treated with hot bitumen poured in the gap, over which fine sand shall be spread to arrest the flow of bitumen.

14.13. SHAHABAD/ TANDUR/ KOTA STONE FLOORING

Stones shall be of approved quality, hard, sound, durable and of uniform thickness. Edges shall be chisel dressed and the top surface shall be machine polished with joints running true and parallel from, side to side. Stones shall be laid on a bed of lime mortar of proportion 1: 2 or cement mortar or proportion 1: 4. Thickness of mortar bedding shall not be less than 12 mm and not more than 25 mm. Before laying, the stone slabs shall be thoroughly wetted with clean water. Thick cement slurry shall be spread over the mortar bed over as much area as could be covered with the stone slabs within half an hours. The slabs shall then be laid and gently tapped with mallet till they are firmly and properly bedded. There shall be no hollows left. The joints shall not be more than 2mm wide and shall be struck smooth. The floor shall be kept covered with damp sand or water for a week. Slabs shall be of standard sizes and

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shapes and shall meet all the required properties and test requirements as stipulated in IS: 1124.

Stones in skirting shall be laid against a bedding of cement mortar 1: 4 20mm thick to the full height of skirting, to a true plane, level and plumb,. The workmanship shall be similar to flooring. The skirting shall be laid projected beyond the finished plastered surfaces. The continuous horizontal grooves at the top of skirting shall be provided if required. The skirting surfaces shall be repolished with hand to the satisfaction of the Employer's Engineer. The skirting shall be cured for 7 days. Top of exposed skirting shall be machine cut and polished. The used at projecting corners shall be suitably leveled to present as neat corner.

14.14. TILE FLOORING AND DADO

Glazed tiles including angles, corners, borders and specials shall be of the approved make and quality, Johnson or equivalent with mat finish.

The tiles before laying shall be soaked in water for at least 2 hours and shall be set in lime concrete mortar of one part of cement, two parts of lime for dado to walls. Tiles which are fixed in the floor adjoining the wall shall be so arranged that the surface of the round edge tiles shall correspond to the skirting or dado. Neat cement grout of honey like consistency shall be spread over the bedding mortar just to cover so much area as can be toiled within half an hour. The edges of the tiles shall be smeared with neat white cement slurry and fixed in this grout one after the other, each tile being well pressed and gently tapped with a wooden mallet till it is properly bedded and in level with the adjoining tiles. There shall be no hollows in bed or joints. The joints shall be kept as close as possible and in straight lines. The joints between the tiles hall not exceed 1.5 mm in width.

14.15. ACID AND/ OR ALKALI RESISTANT TILE FLOORING AND DADO

a) Materials

The acid and/or alkali resistant tiles shall have true and straight edges, shall be non-absorbing, without stains, non-fading, shall conform to IS : 4457 and approved manufacturers.

b) Laying and Workmanship

The surface over which tiles are to be laid shall be plain and plumb and without uneven depressions. It shall be chemically etched with 15 % commercial hydrochloric acid and then washed with alkaline solution. Subsequently, the surface shall be washed with sufficient water until it is fully neutralized.

After the underbed is thoroughly dried, it shall be cleaned thoroughly with wire brushes to remove all loose particles and brushed properly to obtain a completely dust free surface. A heavy grade bituminous corrosion resisting protective coating

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shall be applied on this dust free surface either by brushing or other means in accordance with manufacturer's specifications so as to provide an isolating layer between the Portland cement concrete and the acid-alkali resistant treatment as well as to provide a proper bonding between the same.

This bituminous material; shall be resistant to the splashes and fumes of both inorganic acids and alkalis and should form an elastic film not subject to flaking. Prodorlac SPL as marketed by Coromandel Prodorite Pvt. Ltd. or equivalent may be used for this bituminous lining and the number of coats provided as per manufacturer's recommendation, if a multiple coat is used, sufficient drying period shall be allowed between completion of one coat and application of the next as recommended by the manufacturer and depending on the prevalent temperature. On top of minimum thickness or as recommended by the manufacturer shall applied to provide an impervious underlay membrane to the tiling. This special mastic shall consist of a primer and a mortar. Both these shall be thermoplastic compound of selected fillers and blended bitumen which are solid at ordinary temperatures.

The primer shall be broken up into small pieces and put into cauldron and heated. During heating care shall be taken that the primer does not burn, it is essential to keep it in motion as a preventative measure. When the primer is hot enough to flow like a liquid it is to be poured over the undercoat surface and promptly spread to uniform thickness.

Care shall be taken to avoid moisture entrapment on the surface and to eliminate bubbles. Two layers of primer are normally suitable, but manufacturer's recommendation in this regard shall prevail.

The mortar is to be heated as required to make a stiff paste similarly breaking up into fairly small pieces and melted in the cauldron. When it reaches a butter like consistency, it is to be applied on to the primer applied surface in single or multiple layers as to form a total thickness or the special mastic membrane of at least 12 mm or as required by the manufacturer's specification. The mortar shall be applied hot either by trowelling or by means of a standard wooden float and thoroughly worked in until it forms an even coating. The covering shall be done piece by piece and care taken to keep the correct temperature, so that a perfect weld is made. The special mastic material may be the product of Coromandel Prodorite Pvt. Ltd. or equivalent. Over this underlay the acid/ alkali resistant resin based cement mortar.

The bedding mortar shall have a bed thickness not less than 6 mm. The material shall be self-hardening, chemically setting silicate type and chemical resistant comprising an intimate mixture of solid filler, a setting agent usually contained in the filler and a liquid binder.

The material may be supplied in tow components, powder and solution. When the filler powder and the liquid binder are mixed at ordinary temperature, a trowelable

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mortar shall be formed which should subsequently harden by the chemical reaction between the setting agent and the silicate binder forming an insoluble silica gel. The liquid binder may be neutral solution of sodium silicate and/ or potassium silicate and the fillers may be silica, quartz or other material insoluble hi common mineral acids.

The jointing of the tiles shall be done with a self-hardening cement mortar specially designed to resist both acidic and alkaline as well as mixed acidic and alkaline conditions. For this purpose a resin-type chemical resistant mortar conforming to IS: 4832 Part II shall be used comprising an intimate mixture of liquid resinous material and a powder composed of properly selected filler material and a powder composed of properly selected filler material and usually containing the setting agent. The material may be supplied in two components which when mixed at ordinary temperature shall form a trowelable mortar that subsequently hardens. The liquid resin may be either one of or a combination of the types like phenolic resin, furane resin, epoxy resin and polyester resin. The filler materials, which are usually of a carbonaceous or siliceous nature shall be selected to have resistance particularly to hydrochloric acid and caustic soda. The catalyst material may be incorporated in the fillers is such a manner that it becomes effective when mixed with resin. For phenolic and furane resin mortars the resin and the filler may be supplied in two packs. The resin shall have a viscosity that will permit it to be readily mixed with the powder by manual methods. The filler materials shall have properly graded particles that will permit the preparation of a minimum joint thickness of 1.5mm.

The mortar is to be prepared and applied strictly in accordance with the manufacturer's instructions, If the material is supplied in two separate parts, an inert powder and a resin based syrup, they must mixed in the proportions given by the manufacturer's data table.

The jointing shall be done for the full depth of the tile and the joint width shall be 3 mm. The joints shall be finished smooth and flush printed.

Mixing shall be carried out very thoroughly and carefully in a clean enamelled dish or bowl. Any lumps in the powder shall be broken down by careful mixing. Mixing shall be carried out by adding powder to the syrup. The mixing shall be arranged that the mixed mortar is used up quickly and does not remain in bulk longer than the time specified by the manufacturer. At a temperature of 200°C or above, the mixing pan and contents shall be kept cool by immersion in water. All necessary measures should be taken so that the bulk masses of this resin based mortar, which generates heat in setting, are not allowed to remain under fairly warm conditions which may lead to a flash set. To avoid this, it is essential that the mixed mortar is spread in a thin layer on a flat tray and not left in a mass. After jointing the tiles, the flooring should not be placed under service in normal conditions before eight days or as recommended by

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the manufacturer and depending on atmospheric temperature. During setting and hardening, no water, steam or acid should come in contact with flu's jointing mortar.

If the flooring has to be sloped the same shall be provided in the concrete slab or an additional graded under-bed shall be provided if required, with cement sand mortar(I:3) by volume as specified or as directed by the Employer's Engineer.

The Contractor shall furnish full details regarding the materials for the different treatments described above pertaining to this flooring works as per manufacturer IS specifications, shall lay under-layer, special mastic, setting mortar etc. and set the tiles properly in full conformation with the manufacturer's instructions. The entire work shall be done in workmanlike manner to the complete satisfaction of the Employer's Engineer.

14.16. HEAVY DUTY ABRASION FLOORING

The type, quality, size, thickness, colour, etc., of the tile for flooring and skirting work shall be of the best quality approved by the Employer's Engineer. For this purpose, the Contractor shall provide the Employer's Engineer with necessary samples for his selection. Tiles shall be hardwearing, resistant to impact, resistant to abrasion, free from slipperiness and also resistant to attack by water, oils and greases. The tiles shall be laid on lime concrete mortar bedding of about 30 mm thick to give an overall thickness of 50mm.

14.17. CERAMIC TILE FLOORING (VITRIFIED TILE FLOORING)

14.17.1. The tiles shall be of approved make and shall generally conform to IS 15622. They shall be flat, and true to shape and free from blisters crazing, chips, welts, crawling or other imperfections detracting from their appearance. The tiles shall be tested as per IS 13630.

14.17.2. Classification and Characteristics of pressed ceramic tiles shall be as per IS 13712.

14.17.3. The tiles shall be square or rectangular of nominal size. Table 1,3,5, and 7 of IS 15622 give the modular preferred sizes and table 2,4,6 and 8 give the most common non modular sizes. Thickness shall be specified by the manufacturer. It includes the profiles on the visible face and on the rear side. Manufacturer/supplier and party shall choose the work size of tiles in order to allow a nominal joint width upto 2mm for unrectified floor tiles and upto 1mm for rectified floor tiles. The joint in case of spacer lug tile shall be as per spacer. The tiles shall conform to table10 of IS 15622 with water absorption 3 to 6% (Group BII).

14.17.4. Coloured Tiles Only the glaze shall be coloured as specified. The sizes and specifications shall be the same as for the white glazed tiles.

14.17.5. Preparation of Surface and Laying - Base concrete or the RCC slab on which the tiles are to be laid shall be cleaned, wetted and mopped. The bedding for the tile shall be with cement mortar 1:4 (1 cement : 4 coarse sand) or as specified. The average thickness of the bedding

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shall be 20 mm or as specified while the thickness under any portion of the tiles shall not be less than 10 mm. Mortar shall be spread, tamped and corrected to proper levels and allowed to harden sufficiently to offer a fairly rigid cushion for the tiles to be set and to enable the mason to place wooden plank across and squat on it. Over this mortar bedding neat grey cement slurry of honey like consistency shall be spread at the rate of 3.3 kg of cement per square metre over an area upto one square metre. Tiles shall be soaked in water washed clean and shall be fixed in this grout one after another, each tile gently being tapped with a wooden mallet till it is properly bedded and in level with the adjoining tiles. The joints shall be kept as thin as possible and in straight lines or to suit the required pattern. The surface of the flooring during laying shall be frequently checked with a straight edge about 2 m long, so as to obtain a true surface with the required slope. In bath, toilet W.C. kitchen and balcony/verandah flooring, suitable tile drop or as shown in drawing will be given in addition to required slope to avoid spread of water. Further tile drop will also be provided near floor trap.

14.17.6. Pointing and Finishing- The joints shall be cleaned off the grey cement slurry with wire/coir brush or trowel to a depth of 2 m to 3 mm and all dust and loose mortar removed. Joints shall then be flush pointed with white cement added with pigment if required to match the colour of tiles. Where spacer lug tiles are provided, the half the depth of joint shall be filled with polysulphide or as specified on top with under filling with cement grout without the lugs remaining exposed. The floor shall then be kept wet for 7 days. After curing, the surface shall be washed and finished clean. The finished floor shall not sound hollow when tapped with a wooden mallet.

14.17.7. Measurements - Length and breadth shall be measured correct to a cm before laying skirting, dado or wall plaster and the area calculated in square metre correct to two places of decimal. Where coves are used at the junctions, the length and breadth shall be measured between the lower edges of the coves. No deduction shall be made nor extra paid for voids not exceeding 0.20 square metre. Deductions for ends of dissimilar materials or other articles embedded shall not be made for areas not exceeding 0.10 square metre. Areas, where glazed tiles or different types of decorative tiles are used will be measured separately.

14.18. INTEGRAL CEMENT FINISH ON CONCRETE FLOOR

In all cases where integral cement finish on a concrete floor has been specified, the top layer of concrete shall be screeded, off to proper level and tamped with tamper having conical projections so that the aggregate shall be forced below the surface. The surface shall be finished with a wooden float and a trowel with pressure. The finish shall be continued till the concrete reaches its initial set. No cement or cement mortar finish shall be provided on the surface.

14.19. Granite Stone

It shall be of any colour and size as directed by Employers Engineer. Granite shall be plain machine cut and mirror polished. The stone shall be smooth and of even surface without holes or pits.

SIZES AND TOLERANCES

The size of marble blocks, slabs and tiles shall be as mentioned below

Sizes of Marble Blocks, Slabs and Tiles

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Blocks – Length 30 To 250, Width 30 To 100, Thickness 30 To 40

Slabs– Length 70 To 250, Width 30 To 100, Thickness 2 To 15

Tiles– Length 10 To 60, Width 10 To 60, Thickness 0.8 To 2.4

All dimensions are in centimetre. The length and width, of the blocks shall be in multiple of 30 cm. Length and width of slab shall be in multiple of 10 cm. and thickness in multiple of 1 cm. Tiles shall be square cut and linear dimensions in multiple of 10 cm. Only slabs and tiles shall be machine cut and factory made. For 8 mm thick tiles, special precautions will be required for fixing them like using special adhesive as per manufacturer's specifications. Such tiles are not suitable for outside veneering work exposed to rains/sun if used in large areas in continuous stretches. For tiles of thickness 20 mm and above cramps may be provided if approved by Engineer-in-Charge.

Approval of Sample - Before starting the work, the contractor shall get samples of marble approved by the Engineer-in-Charge. Approved samples shall be kept in the custody of the Engineer-in-Charge and the marble or granite Supplied and used on the work shall conform to samples with regard to soundness, colour, veining and general texture.

Mortar - The mortar used for jointing shall be as specified.

Laying - All marble stones shall be wetted before placing in position. These shall then be floated on mortar and bedded properly in position with wooden mallets without the use of chips or under pinning of any sort. The walls and pillars shall be carried up truely in plumb or battered as shown in the drawings. All courses shall be laid truely horizontal and all vertical joints shall be truely vertical. In case of work without backing of brick work or coursed rubble masonry, face stone shall be laid in headers and stretchers alternatively unless otherwise directed. The headers shall be arranged to come as nearly as possible in the middle of stretchers above and below. Stone shall be laid in regular courses of not less than 15 cm in height and all courses shall be of the same height unless otherwise specified. For work facing with backing of brick work or coursed rubble masonry, face stone shall be laid in alternate courses of header and stretchers unless otherwise directed. Face stone and bond stone courses shall have break joint on the face of atleast half the height of the standard course and the bond shall be carefully maintained through out. All the connected masonry in a structure shall be carried up nearly at one uniform level throughout but where breaks are unavoidable the joints shall be made in good long steps so as to prevent cracks developing between new and old work. When necessary jib crane or other

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mechanical appliances shall be used to hoist the heavy pieces of stones and place these in to correct positions, care being taken that the corners of the stone are not damaged. Stone shall be covered with gunny bags, before putting chain or rope is passed over it, and it shall be handled carefully. No piece which has been damaged shall be used in work. The matching of grains shall be carried out as directed by the Engineer-in-Charge.

Joints - The depth of joints 6 mm from the face shall be uniform and as fine as possible but shall be not more than 1.5 mm thick on the exposed face. Beyond the depth of 6 mm from face, the thickness of joints shall increase in an inverted V shape so as to give good mortar bond between two stones. The inverted portion of the joints shall be filled with bedding mortar and the face 6 mm portion with pointing mortar.

Curing - The work shall be kept constantly moist on all faces for a period of atleast seven days.

Finishing -After the marble work is cured, it shall be rubbed with carborandum stone of different grades no. 60, 120 and 320 in succession or with electrical rubbing machines rubbed with carborandum items 0 to 6 nos.in succession, so as to give a plane true and highly smooth surface. It shall then be cleaned with asolution of oxalic acid, washed and finished clean.

14.20. BRICK BAT COBA CHINA MOSAIC TYPE WATER PROOFING

In case of works where brick bat coba and china mosaic are specified, brick bat coba of average thickness shall be laid to the required slopes as shown on the drawing. Proportion of brick bat shall be 2 parts of brick bat to one part of lime mortar (one part of lime to 2 parts of sand). The brickbats shall be hard, well burnt and of size varying from 12 mm to 25 mm. Lime shall be of best quality of hydraulic lime double ground.

While preparing brick bat concrete, jaggery in portion indicated by the Employer's Engineer shall be added.

The brick bat coba shall then be laid to slopes, providing necessary wattas, and beated at least for 48 hours after laying. Over the brick bat coba a bedding of 1: 2 lime mortar 20 mm to 25 mm thick, shall be provided. A layer of neat cement grout, about 10 mm thick shall then be laid. Immediately on application of cement grout, assorted pieces of coloured china, previously soaked in water shall be set closely on the fresh surface and properly tamped to the required grade. The cement grout freshly prepared shall be laid to the top surface. The surface after completion of work shall be finally cleaned with saw dust, and waste and if so directed by the Employer's Engineer with dilute acid. China mosaic shall be cured for at least 10 days. If so

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directed by the Employer's Engineer, a border of colour or white mosaic shall be provided.

Brick bat coba and china mosaic shall be taken up the parapet walls to height of 125 mm to 150 mm. Necessary fillet shall be provided towards drain pipes as shown on drawings or as directed by the Employer's Engineer.

On prior approval from the Employer's Engineer, cement base proprietary type of waterproofing may be allowed to be done by a specialist Contractor.

The Contractor shall give a guarantee of waterproofing for a minimum period of 10 years against bad or faulty material and shall rectify the work at his own cost during the guarantee period.

14.21. Waterproofing Work

The Contractor shall give a guarantee for all waterproofing against bad or faulty material and construction and shall rectify the work at his own cost during the O&M period/ DLP as applicable and specified elsewhere.

(a) All surfaces to be waterproofed shall be dry, clean, smooth and free from dust and loose particles. Water proofing treatment shall be as per specifications of approved specialist waterproofing company and shall consist of brickbat coba covered with jointless waterproof plaster finished smooth with trowel in cement mortar with false marking of 300 mm squares.

Waterproofing treatment shall be taken up the parapet walls to a height of about 300 mm in shape of round fillet or as directed by the Employer's Engineer.

Thickness of brickbat coba shall be as specified by the specialised agency. Additional thickness of brickbats shall be provided wherever there is an increased length of travel of rainwater and in such portions of baths, water closets, nahani, etc. as specified and as directed by the Employer's Engineer.

(b) Where bitumen felt waterproofing is adopted, it shall be of a seven layer treatment over a properly sloped screed. The layers of bitumen felt shall conform to IS: 1322. The first layer of bitumen felt shall be bonded to the dry, clean and smooth concrete surface by bitumen bonding compound. The successive layers of bitumen felt shall be bonded together with hot bitumen bonding compound as described in IS: 1346 and IS: 3037. Bitumen felt shall be Shalimar or similar approved, laid with 50 mm side laps and 75 mm end laps staggered. The felt shall be laid continuously over the surface of the roof and shall not be terminated at expansion joints.

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14.22. NEERU PLASTER

Cement and sand shall conform to IS: 269 and IS: 383 respectively.

Neat lime shall be made of the best description of lime, slaked with fresh water and sifted. The lime shall be reduced to fine powder by grinding it on a stone or in a hand mill as directed by the Employer's Engineer. The neat lime thus prepared shall be kept moist until used and the quantity to be prepared at one time shall be such that it can be consumed within eight days.

All stone or brick masonry surface shall be thoroughly wetted for atleast 6 hours and the joints raked out to a depth of at least 12 mm and walls washed before any plastering is done. The surface shall then be rendered with 1:4 cement sand plaster with specified roughness. The surface shall then be floated or set with a thin coat, 3 mm thick, of cement and polished will with a trowel or flat board. The cement mortar shall be used within 30 minutes after it leaves the mixing board or mill. Before any plaster work is started patches of plaster 150 mm x 150 mm shall be put on at every 3 metres as gauges so as to ensure an even thickness throughout the work. Cement plaster shall be done in even squares or strips. Care shall be taken to keep the whole surface thoroughly wetted for at least a week. The finishing surface shall be as specified and directed. Neat lime finish shall be applied to the prepared and partially set but somewhat plastic surface with steel trowel to a thickness slightly exceeding 1.5mm, (1/16") and rubbed down to 1.5mm, (1/16") thickness and polished to a perfectly smooth and even finish working from top to bottom. The total thickness of the plaster shall be at least 12mm.

The junction between beams and brickwork shall be plastered after fixing the expanded metal wire mesh of 300 mm width 10mm deep and 15mm wide grooves shall be provided between concrete & brick surfaces.

14.23. SAND FACED CEMENT PLASTER

Applying Plaster with sand and cement mortar including rounding off or chamfering corners as directed and raking out joints in brickwork or roughening of concrete surface, including throating, nosing, drip course and also making grooves where necessary at all levels, with scaffolding as required, as directed by the Engineer. Complete the job as per standard & direction of Engineer-in-charge. Cement and sand shall conform to IS : 209 and IS : 383 respectively .

a. 20 mm thick plaster on external brick wall / concrete in two coats. First coat 12mm thick in (1:4 cement: sand) and outer coat of 8mm in (1:4 cement: sand) with water proofing compound.

b. 12 mm thick plaster (1:4 cement: sand) on inside surface of outer wall & internal brick partition wall.

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c. 6 mm thick plaster (1:4) on ceiling

14.24. PAINTING

a) General

Employer's Engineer's approval shall be obtained before commencing the painting work. All paints and preserves shall be of approved make and colour and their application shall conform to the manufacturer's instructions. Where more than one undercoat is specified it shall be applied in coats of distinctive tints. Workmanship shall conform to the requirements of IS: 2395.

Unless the manufacturer's instructions state otherwise 48 hours drying time shall elapse between successive applications of any primer and 24 hours between applications of all subsequent coats. The surface of bituminous paints shall be left at least 3 days before further handling.

No paints in any coat shall be applied until the Employer's Engineer is satisfied that the surface is clean and dry, and that any previous coat is satisfactory and has hardened adequately. When a surface has been approved, it must be painted immediately. Paintwork shall be rubbed down with a glass paper between coats. No paint shall be applied to a surface which is damp, dirty or otherwise inadequately prepared.

b) Concrete, Brickwork and Plaster

Where specified to be painted, concrete and plaster shall be rubbed smooth and any cracks, blister holes and other imperfections cut out, filled and made good. The surface shall be dried to the satisfaction of the Employer's Engineer before painting is commenced and drying time of at least 28 days shall be allowed after laying brickwork and plaster or stripping formwork from concrete. The surface shall be brushed to remove any efflorescence and then painted with the following:

i) for interior brickwork and concrete, apply two coats of acrylic emulsion paint with Plaster of Paris over a coat of primer.

ii) for exterior brickwork and concrete, apply two coats of waterproof cement-based paint over a coat of primer of approved quality and shade and make.

Where painting with plastic emulsion is specified all uneven surfaces shall be made up by use of putty of appropriate quality after the surface has been thoroughly cleaned of all dust and dirt and sand papered.

c) Ironwork and Un-galvanised Steel Work

Structural steelwork shall be shot blasted to a "white metal" finish, and grease and oil removed prior to painting. Priming shall immediately follow blast cleaning and no

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cleaned surface shall be left unprimed for more than four hours. Only primers that chemically inhibit corrosion shall be used. Where the iron or steelwork is not in contact with raw or treated water, the primer shall be red lead complying with IS: 57. Where there is a possibility that the steel or ironwork may come in contact with water, the priming treatment shall be non toxic, zinc chromate or equivalent. Where it is anticipated that further welding will be required, an approved welding primer shall be applied to the areas to be welded and reprimed with the main primer when welding shall been completed. Primer coats shall not be less than 0.05 mm each. After erection, all damaged areas shall be made good, and reprimed where the original cost shall spread under the primer, the affected surface shall be cleaned down to bare metal to the satisfaction of the Employer's Engineer and then reprimed.

Repainting shall be carried out as soon as possible after erection. If it is to be exposed to weather or condensation, it shall receive one further coat of primer.

Metalwork in intermittent or permanent contact with raw or treated water shall have two finishing coats of an approved coal tar pitch epoxy paint. The total coating shall be minimum of 0.125 mm thick.

After the second coat of primer is hard dry, the entire surface shall be wet rubbed cutting down to a smooth uniform surface. When the surface becomes dry, the undercoat of synthetic enamel paint conforming to IS: 2932 of optimum thickness shall be applied by brushing with minimum of brush marks. The coat shall be allowed to hard dry. The under coat shall then be wet rubbed cutting down to a smooth finish, taking adequate care to ensure that at no place the undercoat is completely removed. The surface shall then be allowed to dry.

The first coat of paint shall be applied by brushing and allowed to hard dry. The gloss from the entire surface shall then be gently removed and the surface dusted off. The second finishing coat shall then be applied by brushing.

At least 24 hours shall elapse between the application of successive coats. Each coat shall vary slightly in shade and this shall be got approved by the Employer's Engineer.

d) Galvanised Steelwork

Newly galvanised steelwork shall be primed with an etch primer such as calcium plumbate. Steelwork that has been galvanised for a long period so that the surface has oxidized adequately to allow adhesion of undercoats, need not have an initial coat of each primer.

After priming, galvanised steelwork in contact or intermittent contact with raw or treated water shall be given two coats of an approved coat of tar pitch epoxy paint. The total coating shall have a minimum thickness of 0.125 mm.

Protective coats for galvanised steelwork not in contact with water shall be:

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i) one coat of micaceous iron oxide paint for interior galvanised steelwork.

ii) two coats of micaceous iron oxide paint for external galvanised steelwork.

Galvanised steelwork not in contact with water shall be finished with atleast one coat of gloss paint on top of approved undercoat.

e) Bituminous Surfaces

Metalwork items that have given a shop treatment of bituminous paint shall be painted with two coats of an approved anti-bleed paint before applying a coat of decorative finishing paint.

f) Aluminium Surfaces

Aluminium surface shall be worked clean, dried and thoroughly degreased before painting, by an appropriate solvent (such as one consisting of equal parts of white spirit and light solvent naptha). Flame cleaning shall not be permitted. The clean degreased surface shall be treated to ensure paint adhesion either by mechanical roughening, chemical adhesion, or etch primers or wash primers applied in strict conformity with the manufacturer's instructions or by other treatment approved by the Employer's Engineer.

The pre-treated surface shall receive a priming coat with an inhibiting pigment containing not less than 20% by weight of fine chromate or other approved chromate in a suitable water-resisting vehicle.

The priming coat shall not contain any copper or mercury compounds and it shall also be free from graphite and carbonaceous materials and shall not contain any lead. Priming coat shall consist of a Tung-oil phenolic-resin which is pigmented with equal parts of zinc tetroxy chromate and red iron oxide.

Aluminium surfaces in contact with concrete, or resting on pads on concrete, shall be painted with two coats bituminous paint, and the concrete surfaces shall also receive two coats bituminous paint.

g) Woodwork

Woodwork for painting shall be carefully rubbed down, treated with preservatives and knotted, stopped and primed in the shop. Care shall be taken to ensure that priming is thoroughly brushed into every part of the surface and in particular at end grains, joints and notches where two coats are to be applied. Primers for wood shall be of a standard equivalent to, or better than "Aluminium Wood Primer Sealer A 519-3697" by I.C.I Paints.

After the woodwork has been fitted and all defects in the surfaces have been made good and reprimed, one coat of approved undercoat shall be applied to internal

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surfaces and two coats to external; surfaces. An undercoat of quality equal to or better than "Dulux Gloss Finish A365-line".

14.25. WATERPROOF CEMENT PAINT

a) Surface Preparation

The wall should be washed thoroughly with clean soft water and freed of all loose particles, dust, dirt, lichen, moss, efflorescence and lime wash by scrubbing with a wire brush. Inequality and holes shall be filled up with cement paste which should be allowed to set. To get even uniform mat finish it is necessary to keep the surface damp throughout the operation. In hot dry weather the wall should be frequently sprinkles with water to keep it moist.

b) Mixing the Paint

Loosen the contents by either rolling the drum or shaking the container before opening it. Take one measure of water by volume in a clean pot and add two volumes of approved quality waterproof cement paint conforming to IS: 5410. Stir well to make paste of high consistency then add one more measure of water constantly stirring the mixture. The final composition of water and paint is now 1: 1 by volume. Keep stirring the mixture all the time and use it up within an hour. Do not use the mix if it is left over for more than two hours.

c) Method of Application

Wet the surface by any convenient method. A small surface can be wetted by brush. When applying paint surface should be damp and not wet. While applying the first coat brush hared into the surface to cover pores and cavities to ensure better bond. Twelve hours after applying the first coat cure the surface by sprinkling the water. Before applying the second coat damp the surface and after the application of second coat cure it as directed above. In hot climate repeat curing at least twice at the interval of six hours for optimum best results.

d) Curing

After each application paint should be cured by sprinkling fine spray of water, normally after twelve hours when paint film is hardened satisfactorily. In summer when weather is hot, curing may be done little earlier. Water marks may be left over the surface if a stream of water is allowed to flow before the Paint film is hardened.

14.26. SILICON PAINT

a) Preparation

A solution for application shall be prepared from Syltrit 1722 or equivalent. The manufacturer's instructions shall be followed. This solution shall be prepared to a concentration of about 3% solids by mixing 1kg of water dilutable solution of sodium

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methyl siliconate with 9 kgs of water. Concentration higher than 3% solids are not recommended ad they may cause a white precipitate of sodium carbonate formation.

b) Application

A flooding technique should be used in applying to obtain the best penetration. When spraying, the solution should not be atomized or misted, but flowed on in a solid stream, with the spray gun held at distance just enough to eliminate foaming on the masonry surface. If foaming is allowed then certain visible marks might appear after application. The run down of 150 to 300 mm should be maintained with generous overlapping of passes. Dipping and brushing methods are also suitable. After application of the solution, the treated surface should be allowed to dry at least 24 hours to develop maximum water repellence. This interval may be shortened somewhat by force drying at temperatures to 30°C. Though this removes the water quickly, time must still be allowed for the curing. Reaction between the solution and the surface being treated. Until the reaction is complete the applied film still remains water soluble and any rain falling during this time can wash it out. So application should be done in dry weather or at least in absence of rain and fog.

c) Spraying Equipment

Spraying equipment shall be hand operated stir up pump with stainless steel nozzle fitted with PVC or polyethylene delivery pipe. Components of the spraying, equipment that are in contact with the treating solution should be of black iron, mild steel, stainless steel, Teflon, PVC or polyethylene. They should not be of aluminium or galvanised steel.

d) Safety

The solution should always be applied in a liquid stream, not by misting or fogging. If misting occurs, avoid inhalation. Contact with eyes or skin should be treated immediately by flooding the area with large quantities of water for atleast 15 minutes.

14.27. IPE DRAINS

Where pipes are provided for cross drainage purposes, the sequence of construction shall be as follows:

i) Laying of sand/ shingle bedding on the original ground,

ii) Laying of PCC of M-15 grade

iii) Laying of concrete pipes of Class NP3/NP4 as per IS: 458,

iv) Constructing embankment above in compacted murrum, laying of the sub-base and water bound macadam as specified hereinabove.

Details of the above works as indicated in the specifications shall be followed:

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a) Materials for Pipe Drains

All materials used in the construction of pipe drains shall be cPVC. Each consignment of pipes shall be inspected, tested if necessary, and approved by the Employer's Engineer at the place of manufacture or at site before their incorporation in the works.

b) Excavation for Pipes

The foundation bed for pipe drain shall be executed true to the lines and grades as specified or as directed by the Employer's Engineer. The pipes shall be placed in shallow excavation of the natural ground or in open trenches cut in the existing embankment, taken down to level as specified. Where trenching is involved, its width on either side of pipe shall not be less than 150 mm nor more than one third the diameter of pipe. The sides of the trench shall be as nearly vertical as possible. When during excavation the material encountered is soft, spongy or other unstable soil and unless other special construction methods are called for, such unsuitable material shall be removed upto a depth of 600 mm or as directed by the Employer's Engineer. Before placing any backfill material exposed surface of the soft soil shall be lightly compacted with one Pass of a 0.5 T roller. On the lightly compacted surface, coarse sand and shingle shall be spread in two successive by rolling with a min. 0.5T roller and with a minimum of 10 passes each, both in longitudinal and transverse directions. Where bed rock or boulder strata are encountered, excavation shall be taken down at least 200 mm below bottom level or the pipe as directed by the Employer's Engineer and the space filled with approved sand and shingle and thoroughly compacted to provide adequate support for the pipes. Trenches shall be kept free from water until the pipes are installed and the joints have been hardened. For this purpose, the Contractor shall suggest a suitable method for diverting the water.

c) Bedding for Pipe

The bedding surface shall provide a firm foundation of uniform density throughout the length of the pipe drain and shall conform to the specified level and grade. The pipe shall be bedded in a cradle constructed of concrete having a mix not leaner than M-15 conforming to the specifications under the same section. The pipes shall be laid on the concrete bedding before the concrete has set.

d) Laying of Pipes

No pipe shall be placed in position until the foundations have been approved by the Employer's Engineer. When pipes are to be laid adjacent to each other, they shall be separated by a distance equal to or greater than half the diameter of pipe subject to a minimum of 450 mm. The laying of pipes on the prepared concrete foundation shall start from the outlet and proceed towards the inlet and be completed to the specified lines and grades. The pipes shall be fitted and matched so that when laid they form a drain with a smooth uniform invert. Any pipe found defective or damaged during

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laying shall be removed and a new pipe substituted in its place at the cost of the Contractor.

e) Jointing

All joints shall be made with care so that their interior surface is smooth and consistent with the interior surface of the pipes. The ends of the pipes shall be so shaped as to form a self-centering joint with jointing space 13 mm wide. The jointing space shall be filled with cement mortar (1 cement to 2 sand) mixed sufficiently dry to remain in position when forced with a trowel or rammer. Care shall be taken to fill all voids and excess mortar shall be removed. After finishing, the joints shall be kept covered and damp for at least four days.

f) Back-Filling

Trenches shall be backfilled with murrum in accordance with the specification. Backfilling upto 1.0 metres above the top of the pipe shall be carefully done and murrum shall be thoroughly consolidated under the haunches of the pipe.

Before laying the filter medium, the sides of the banks shall be trimmed to the required slope. Depressions shall be filled and thoroughly compacted. The filter granular material shall be laid over the prepared base and suitably compacted to a thickness of 75 mm unless specified otherwise on the specification drawings.

14.28. Doors , Windows

UPVC Frame - UPVC door frame shall be made of PVC material conforming to IS 10151. The door frame shall be made from extruded UPVC section having overall dimensions of 48 x 40 mm or 42 x 50 mm having wall thickness of 2.0 mm + 0.2 mm. Corners of the door frame to be jointed by M.S. galvanized brackets. Joints mitred and plastic welded. The hinge side vertical outer frames shall be reinforced by galvanized M.S. Tube of size 19 x 19 mm of wall thickness 1 mm + 0.1 mm and a tie rod shall be provided at the bottom of the frame. The frame shall be fabricated in factory as per nomenclature of the item and directions of Engineer-in-Charge.

Fixing of Frames- The frames are to be fixed in prepared openings in the walls. All civil work and tiling should be completed before the fixing of the frames. The frames are to be fixed directly on the plastered wall. In case tiling is to be done in the place the frames are to be fitted, a 50 mm strip should be left untiled at the location where the frames are to be fitted. The frames are erected in the prepared opening such that the vertical members of the door frame are embedded 50 mm in the floor. The frame shall be fitted truly in plumb. A minimum of three anchor bolts or screws of size 65/100 shall be used to fix each vertical member. One bolt shall be fixed at 200 mm from the top member and one bolt shall be fixed at 200 mm from the floor. The third anchor bolt shall be fixed in the center. The top horizontal member shall be fixed

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using two 65/100 size anchor bolts or screws at a distance of 200 mm from both the corners.

Measurements - The outer length of the vertical and horizontal members of UPVC door frame shall be measured in running metres including embedded length in floor corrected upto a cm.

Rate- The rate includes the cost of the materials and labour involved in all the operations described above. The cost of anchor bolts or screws for joining the frame is included in the rate. Any other hardware, which may be required, shall be paid for separately.

Door of room adjoining the verandah, corridor, lobby or hall, shall be considered as external door. Where the height of the door leaf exceeds 2.15 metres above the floor level, one extra hinge shall be provided for every additional height of 0.50 metre, or part thereof and the length of top bolts shall be increased by the height of the leaf above 2.15 metres from floor level. Single leaf door shutters of more than 0.80 m in width shall be provided with one extra hinge. In double leaf shutters of doors, two door bolts shall be fixed to the first shutter and one to the closing shutter at the top. In case of single leaf inter communicating, panelled, glazed or panelled door shutter for bath and w.c. one tower bolts will be replaced by a bathroom latch. Finger plates shall be provided in case of bath and wc shutters in office buildings.

In case of windows with double shutters, two tower bolts shall be fixed to the closing shutters and one tower bolt to the first shutter at the top. In case of window shutters, hooks and eyes may be provided in lieu of casement stays where specified. Where the height of window shutter exceeds 1.20 metres one extra hinge shall be provided and length of top bolts shall be increased by height of the leaf above 2.15 metres from the floor level. Window shutter with steel frames shall be provided with six hinges in case of double leaf shutters and three hinges in case of single leaf shutters, irrespective of height and width of shutters.

14.29. Glazing

The glass panes shall have square corners and straight edges. The glass panes shall be so cut that it fits slightly loose in the frames. In doors, windows and clerestory windows of bath, WC and lavatories frosted glass panes shall be used which shall weight not less than 10.00 kg/m2. Glazing shall be provided on the outside of the frame unless otherwise specified. Putty of approved make conforming to IS 419 shall be used for fixing glass panes. Putty shall be applied between glass panes and glazing bars. Putty shall then be applied over the glass pane, which shall stop 2 to 3 mm from the sight line of the back rebate to enable the painting to be done upto the sight line to seal the edge of the putty to the glass. The oozed out putty shall be cleaned and

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from putty cut to straight line. Quantity of putty shall not be less than 185 gm/ metre of glass perimeter. Putty shall be painted within 2 to 3 weeks, after glazing is fixed to avoid its cracking. Four glazing clips may be provided per glass pane for a size larger than 30 cm x 60 cm for all types, where the glass panes size exceed 80 cm x 200 cm, 6 glazing clips shall be used. In case of doors, windows and ventilators without horizontal glazing bars, the glazing clips may be spaced according to the slots, in the vertical members provided the spacing does not exceed 30 cm otherwise the spacing shall be 30 cm.

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CONDITIONS OF CONTRACT

1. **Interpretations**

The PBMC, referred as Employer in this document shall be the sole deciding authority as to the meaning, interpretation and implications for various provisions of the specifications. PBMC decision in writing shall be final and binding upon the contractor.

2. **Intimation about commencement of work**

Before commencing the works and also during progress the Contractor shall give due notice to the concerned authorities, the Municipality, the Roads and Buildings and Electricity Board, Telephone Department, the Traffic Department attached to the Police, other Departments and companies as may be required to the effect that the work is being taken up in a particular locality and that necessary diversion of traffic may be arranged for. The contractor shall cooperate with the Departments concerned and provide for necessary barricading of roads, protections to existing underground mains, cables etc. the cost of same should be included in the Price Bid and no extra cost for same shall be payable.

Contractor is also responsible for coordinating with various Government/Statutory bodies etc. regarding obtaining clearances/NOCs required for execution of work. The cost of same should be included in the Price Bid and no extra cost for same shall be payable.

3. **Electricity, Water and other Services**

3.1. **For Construction Period, Trial Run and Commissioning, Performance Test including Hydrotesting**: The Contractor shall be responsible for provision of all power, water, and other services he may require for performance of the Construction period of Contract including hydro-testing pipes, channels, boxes and tanks/ structures etc. This includes contacting the appropriate utility or service providers and applying for connections as necessary. The contractor shall, at his own risk and cost, provide all piping, fittings, and other equipment necessary for his use and for metering of the water and any treatment needed. The Contractor is to ensure that the quality of Water remains suitable for the purpose for which it is intended.

4. **Unforeseeable Difficulties**

Except as otherwise stated in the Tender Document/Agreement:

(a) The Contractor accepts complete responsibility for having foreseen all difficulties and costs of successfully completing the Works;
(b) The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs; and
(c) The Scheduled Completion Date shall not be adjusted to take account of any unforeseen difficulties or costs.

5. **Time schedule/Mile Stone**

The Scheduled completion date for completing the work (construction and commissioning phase) shall be 12 months from date of commencement. Date of commencement shall be 30 days from the date of LOA.

The successful bidder will have to submit the detailed quarterly time schedule for the work to complete the whole work in all respects within 12 months, as stipulated. While working out time schedule, details of mobilization and deployment of men power

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(Skilled, Unskilled) as well as materials, equipments, T&P etc. shall be kept in view. However if any further details are needed by PBMC the same shall also be furnished.

6. Advance Payment

6.1. The Employer shall make an interest-bearing advance payment and interest as per GCC CPWD annum (the "**Advance Payment**"), equal in amount to 10 (ten) percent of the Design -Build/Construction Contract Price, for mobilization expenses and for acquisition of equipment. The Advance Payment shall be made in two equal installments each of 5% (Five percent) of the Design -Build/Construction Contract Price

6.2. The Contractor may apply to the Employer for the first installment of the Advance Payment at any time after signing of the Design -Build/Construction Contract Agreement, along with an irrevocable and unconditional guarantee from a Bank for an amount equivalent to 110% (one hundred and ten per cent) of such installment, substantially in the form mutually accepted by the Employer, to remain effective till the complete and full repayment thereof.

6.3. At any time after 30 (thirty) days from the date of signing of the Contract Agreement, the Contractor may apply for the second installment of the Advance Payment along with an irrevocable and unconditional guarantee from a Bank for an amount equivalent to 110% (one hundred and ten per cent) of such installment, substantially in the form mutually accepted by the Employer, to remain effective till the complete and full repayment thereof along with proof of satisfactory utilization of first installment of Advance Payment in this Project.

6.4. The first and second installments shall be paid by the Employer to the Contractor within 15 (fifteen) days of the receipt of its respective requests in accordance with the provisions of this Clause 6.

6.5. The recovery of all Advances shall commence when 10% (Ten per cent) of the original Contract Price of the work has been paid, or at Six months after the Commencement Date of the Contract whichever is the earlier, and it will be completed by the time 80% of the original contract value has been paid or by the time of original Completion Date whichever is earlier. The recovery of advances shall be limited to 20% (twenty per cent) of an account bill.

6.6. If the Advance Payment has not been fully repaid prior to Termination under Clause 26 and/or 28 as the case may be, the whole of the balance then outstanding including interest shall be immediately become due and payable by the Contractor to the Employer.

7. **Security Deposit:** The person whose bid may be accepted (hereinafter called the Contractor which expression shall unless excluded by or repugnant to the context include his heirs executers, administrators representatives and assigns) shall permit PBMC at the time of making any payments to him for the value of work done under the contract to deduct the security deposit as under :

7.1. Security Deposit to be taken for the due performance of the contract: the Employer shall deduct 2.5% (Two point Five per cent) thereof as guarantee money for performance of the obligations of the Contractor for the complete duration of the contract (the "Security Deposit") subject to the condition that the maximum amount of Security Deposit shall not exceed 10% (Ten per cent) of the Accepted Total Contract Price.

7.2. The Employer shall return 100% the Security Deposit to the Contractor within 60 (sixty) days of the expiry of the Defects Liability Period under this Agreement. Notwithstanding the

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aforesaid, the Parties agree that the Employer shall not be obliged to release the Performance Security until all Defects identified during the Defects Liability Period have been rectified.

8. Performance Security/ Performance Guarantee

8.1. The Contractor shall, for the performance of its obligations hereunder during the Construction Period, provide to the Employer, within (within 21 days after issue of LOA), an irrevocable and unconditional guarantee from a Bank in the form set forth in RFP (the "**Performance Security**") for an amount equal to 3% (Three percent) of the Accepted Contract Price. The Performance Security shall be valid until 90 (Ninty) days after the Defects Liability Period. Until such time the Performance Security is provided by the Contractor pursuant hereto and the same comes into effect, the Bid Security shall remain in force and effect, and upon such provision of the Performance Security, the Employer shall release the Bid Security to the Contractor.

8.2. Notwithstanding anything to the contrary contained in this Agreement, the Parties agree that in the event of failure of the Contractor to provide the Performance Security in accordance with the provisions of Clause 8.1 and within the time specified therein or such extended period as may be provided by the Employer, in accordance with the provisions of Clause 8.3, the Employer may encash the Bid Security and appropriate the proceeds thereof as Damages, and thereupon all rights, privileges, claims and entitlements of the Contractor under or arising out of this Agreement shall be deemed to have been waived by, and to have ceased with the concurrence of the Contractor, and this Agreement shall be deemed to have been terminated by mutual Agreement of the Parties.

8.3. In the event the Contractor fails to provide the Performance Security within 21 days from the date of LOA, it may seek extension of time for a period not exceeding 20 (twenty) days on payment of Damages for such extended period in a sum calculated at the rate of 0.05% (zero point zero five per cent) of the Accepted Contract Price for each day until the Performance Security is provided.

8.4. The Contractor may initially provide the Performance Security for a period of 12 (Twelve) months ~~y~~ provided that it shall procure the extension of the validity of the Performance Security, as necessary, at least 2 (two) months prior to the date of expiry thereof. Upon the Contractor providing an extended Performance Security, the previous Performance Security shall be deemed to be released and the Employer shall return the same to the Contractor within a period of 7 (seven) business days from the date of submission of the extended Performance Security.

8.5. Release of Performance Security

The Employer shall return 100% the Performance Security to the Contractor within 60 (sixty) days of the of the expiry of the Defects Liability Period under this Agreement. Notwithstanding the aforesaid, the Parties agree that the Employer shall not be obliged to release the Performance Security until all Defects identified during the Defects Liability Period have been rectified.

No interest will be payable by PBMC, the Employer upon the Earnest Money and Security Deposit or amounts payable to the Contractor under the Contract.

8.6. Appropriation of Performance Security.

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8.6.1. Upon occurrence of a Contractor's Default, the Employer shall, without prejudice to its other rights and remedies hereunder or in law, be entitled to en-cash and appropriate the relevant amounts from the Performance Security as Damages for such Contractor's Default.

8.6.2. Upon such encashment and appropriation from the Performance Security, the Contractor shall, within 30 (thirty) days thereof, replenish, in case of partial appropriation, to its original level the Performance Security, and in case of appropriation of the entire Performance Security provide a fresh Performance Security, as the case may be, and the Contractor shall, within the time so granted, replenish or furnish fresh Performance Security as aforesaid failing which the Employer shall be entitled to terminate the Agreement/Contract in accordance with respective clause of this Contract. Upon replenishment or furnishing of a fresh Performance Security, as the case may be, as aforesaid, the Contractor shall be entitled to an additional Cure Period of 30 (thirty) days for remedying the Contractor's Default, and in the event of the Contractor not curing its default within such Cure Period, the Employer shall be entitled to encash and appropriate such Performance Security as Damages, and to terminate this Agreement in accordance with accordance with respective clause of this Contract for Termination.

8.7. The Parties agree that in the event of Termination of this Agreement, the Retention Money and the Bank guarantees specified in this Clause 8 shall be treated as if they are Performance Security and shall be reckoned as such for the purposes of Termination Payment under the said Contract.

9. Contract Price

9.1. All payments under this Contract shall be made in Indian Rupees.

9.2. The Employer shall make payments to the Contractor for the Works based on the lump sum price accepted by the Employer in consideration of the obligations specified in this Contract which shall be subject to adjustments in accordance with the provisions of this Contract. The Parties further agree that save and except as provided in this Agreement, the Contract Price shall be valid and effective until the Completion of the contract.

9.3. The Contract Price (the Lump Sum quoted by the Contractor/Bidder) for Construction (Design Build) shall include all duties, Taxes, royalty, and fees that may be levied in accordance with the laws and regulations in force as on the Base Date under this Agreement. Nothing in this Agreement shall relieve the Contractor from its responsibility to pay any tax including any tax that may be levied in India on profits made by it in respect of this Agreement.

9.4. Royalty on Minor Minerals: The Contractor shall pay all quarries, Royalty charges etc. If the Contractor fails to produce the royalty clearance certificate from concerned department then the PBMC shall deduct the royalty charges from his bills and keep in deposit head, which shall be refunded to the Contractor on production of royalty clearance certificate from the concerned department. If he fails to produce the royalty clearance certificate within 30 days of submission of final bill, then royalty charges which were kept under deposit head by the Executive PBMC shall be deposited to the concerned department and his final bill payment shall be released.

9.5. Adjustments for Changes in Legislation : The Contract Price shall be adjusted to take account of any increase or decrease in Cost resulting from a change in the Laws of the Country (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after bid due date (last date for bid submission date)

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9.6. The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs, unless otherwise provided for in this Tender Document/Contract

9.7. Unless otherwise stated in this Tender Document, the Contract Price covers all the Contractor's obligations for the Works under this Agreement and all things necessary for the Construction and the remedying of any Defects in the Project Works/Facilities.

9.8. Price Escalation: No price escalation whatsoever shall be paid for Design Build Period of the Contract. For avoidance of Doubt, Price Escalation is Not applicable to the said Contract.

9.9. All payments by the Employer pursuant to this section shall be made on or prior to the Payment Date by RTGS of immediately available funds to such account or accounts specified by the Contractor from time to time.

10. Priority of Agreements and errors/discrepancies:

This Tender Document/Agreement, and all other Annexures/Schedules/Supplementals/ documents forming part of or referred to in this Tender Document/Agreement are to be taken as mutually explanatory and, unless otherwise expressly provided elsewhere, the priority of documents forming part hereof or referred to herein shall, in the event of any conflict between them, be in the following order:

i. Replies to Pre Bid Queries and Corrigenda/Addendum
ii. Section 4 : Conditions of Contract
iii. Volume-II scope &Technical Specifications
iv. Section 2 – ITB
v. Online Price Bid
vi. Any other documents forming part of the contract. then all others

In case of ambiguities or discrepancies within this Condition of Contract, between two or more Clauses of this Agreement, the provisions of a specific Clause/Stringent/better/higher specification relevant to the issue under consideration shall prevail over those in other Clauses.

11. Subletting of works

The contract shall not be assigned or sublet without prior approval of the PBMC who has accepted the tender and if the written Contractor assigns or sublets his contract, for more than 30% of Accepted Contract Price or attempts to do so the PBMC may, there upon by notice in writing, rescind the contract, and the Security Deposit and Performance security of the Contractor shall there upon stand forfeited and be absolutely at the disposal of PBMC and the same consequences shall ensure as if the contract had been rescinded thereof and in addition, the Contractor shall not be entitled to recover or be paid for any work thereto for actually performed under the contract. Any such assignment/subletting shall not diminish or dilute the liability/ responsibility of the Contractor.

12. **Technical Knowledge and staff:**

[a] The contractor shall submit following information to the Employer/ or its Engineer/Representative/PBMC within 10 (Ten) days from the commencement date :

i. Contractor shall depute one Project manager with civil engineering background for Design Build/Construction Period

ii. The Contractor shall employ adequate Construction Managers, Graduate engineers and Diploma engineers as Technical Staff during the execution of the work to design and Construct the system as per specification of the Contract

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13. **Registration with Labor Department**

As per rule 1976 rule-21 (Form-4) or applicable laws, the successful Contractor shall submit the Labor registration Certificate after issuing the work order and prior to the Commencement of work.

The Contractor shall pay not less than the minimum wages as per applicable as per prevailing law to its workmanship employed on the said Contract.

14. Obligations of the Contractor

14.1. Subject to and on the terms and conditions of this Agreement, the Contractor shall undertake the survey, investigation, design, engineering, procurement, Construction, as defined in Scope and observe, fulfill, comply with and perform all its obligations set out in this Agreement or arising hereunder after issue of Completion Certificate.

14.2. The Contractor shall comply with all Applicable Laws and Applicable Permits (including renewals as required) in the performance of its obligations under this Agreement.

14.3. In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his own expense arrange for the safety provisions as per C.P.W.D. Safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the contractor fails to make arrangement and provide necessary facilities as aforesaid, In case of failure to adhere to above provisions or if unsafe practices/safety violation by contractor/his staff are noticed at the site of work, the contractor shall be levied with a penalty of Rs.10,000/- for the 1st incident, Rs. 20,000/- for the 2nd incident and Rs. 40,000/- for subsequent such incident. The PBMC shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor. Repeated safety violations shall become a valid ground for initiating the contract termination proceedings.

Contractor comply with all applicable health and environmental regulations and Laws made by any local authorities or by the Government (state and/or central). All cost to comply the Health, safety and environment related regulations are included in project cost.

Contractor is also responsible for adherence to Construction and Demolition Waste Management Rules 2016 as directed by the Employer

14.4. Subject to the provisions of Clauses 14.1,14.2 and 14.3 respectively, the Contractor shall discharge its obligations in accordance with Good Industry Practice.

14.5. The Contractor shall remedy any and all loss or damage to the Project facilities, from the Date of Appointment until the end of the Construction Period at the Contractor's cost, save and except to the extent that any such loss or damage shall have arisen from any default or neglect of the Employer.

14.6. The Contractor shall remedy any and all loss or damage to the Project facilities, during the Defects Liability Period at the Contractor's cost to the extent that such loss or damage shall have arisen out of the reasons specified in Clause 22.2.2

14.7. The Contractor shall, at its own cost and expense, in addition to and not in derogation of its obligations elsewhere set out in this Agreement:

(a) make, or cause to be made, necessary applications to the relevant Government Instrumentalities with such particulars and details as may be required for

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obtaining Applicable Permits and obtain and keep in force and effect such Applicable Permits in conformity with the Applicable Laws;

(b) procure, as required, the appropriate proprietary rights, licenses, Agreements and permissions for Materials, methods, processes and systems used or incorporated into the project as cited above;

(c) make reasonable efforts to maintain harmony and good industrial relations among the personnel employed by it or its Sub-contractors in connection with the performance of its obligations under this Agreement;

(d) ensure and procure that its Sub-contractors comply with all Applicable Permits and Applicable Laws in the performance by them of any of the Contractor's obligations under this Agreement;

(e) not do or omit to do any act, deed or thing which may in any manner be violative of any of the provisions of this Agreement;

(f) support, cooperate with and facilitate the Employer int the implementation of the Project in accordance with the provisions of this Agreement;

(g) ensure that the Contractor and its Sub-contractors comply with the safety and welfare measures for labor in accordance with the Applicable Laws and Good Industry Practice;

(h) keep, on the Site, a copy of this Agreement, publications named in this Agreement, the Drawings, Documents relating to the Project, and Change of Scope Orders and other communications given under this Agreement. The Employer's Engineer and its authorized personnel shall have the right of access to all these documents at all reasonable times;

(i) cooperate with other contractors employed by the Employer and personnel of any public authority; and

(j) not interfere unnecessarily or improperly with the convenience of the public, or the access to and use and occupation of all roads and footpaths, irrespective of whether they are public or in the possession of the Employer or of others.

(k) the Contractor shall prepare Project specific Health, safety and Environment plan for implementation.

(l) the Contractor shall conduct the photography of the Project and submit along with Monthly Reports.

14.8. The Contractor shall undertake all necessary superintendence to plan, arrange, direct, manage, inspect and test the Works.

14.9. The Contractor shall check the design criteria and calculations (if any) included in the Bid Documents and satisfy itself regarding their accuracy and adequacy. Contractor shall meet the minimum design and sizing requirements specified in the Bid Documents – a design that does not meet such minimum requirement shall not be acceptable and will result in rejection of the bid as non-responsive. Further, if Contractor believes that the minimum design and sizing requirements are not adequate to meet the minimum performance requirements specified, then Contractor shall make whatever upward adjustments to the design and sizing it deems necessary to meet the performance requirements and include these in the Bid Price. Contractor assumes full responsibility for meeting the specified performance requirements and ensuring the adequacy of the Works for this purpose."

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The design criteria provided in respective schedules of the same volume is basic design criteria and has to be met in totality. However, if the Contractor feels that, he requires additional work to meet the contractual conditions, the cost of same shall be deemed to be included in the Price and no extra cost shall be paid over and above the quoted price.

14.10. As per the Ministry of Environment and Forest Guidelines 2010 and Ministry of Urban Development notifications, the Site area shall be protected from dust by fixing Green Fencing around the Construction site area. The Contractor is instructed to strictly adhere to the following at his own cost. No extra cost shall be payable.

- Supply and Fixing Green barriers and wind breaking walls around their sites.
- Cover tarpaulin on scaffolding around area of construction,
- Do not store construction material, particularly sand, on any part of the street, roads in any colony
- Dust emissions from construction site are controlled.
- Sprinklers should be compulsorily used at the site and Wet jets in grinding and stone cutting must be used.

Further it is clarified that if any penalty is levied by any authority for not adhering/meeting the laws/by laws/guild lines with respect to the environment, construction activities, labor, labor camp, pollution etc. activities of what so ever in nature, the full Penalty as levied shall be payable by the Contractor to the said Authority. In addition to the penalty levied an amount of 10% of the of the above penalty shall be recovered as Damages by the Employer from the Contractor and may be deducted by the Employer from any monies due to the Contractor.

15. Obligations of the Employer

15.1. The Employer shall be responsible for the correctness of the Scope of the Project and Project Facilities required for the proposed contract.

15.2. The Employer agrees to provide support to the Contractor and undertakes to observe, comply with and perform, subject to and in accordance with the provisions of this Agreement and the Applicable Laws, the following:

i. upon written request from the Contractor, and subject to the Contractor complying with Applicable Laws, provide reasonable support to the Contractor in procuring Applicable Permits required from any Government Instrumentality for implementation of the Project;

ii. upon written request from the Contractor, provide reasonable assistance to the Contractor in obtaining access to all necessary infrastructure facilities and utilities, including water and electricity at rates and on terms no less favourable than those generally available to commercial customers receiving substantially equivalent services;

iii. that no barriers that would have a Material Adverse Effect on the Works are erected or placed on or about the Project Site by any Government Instrumentality or persons claiming through or under it, except for reasons of Emergency, national security, law and order or collection of inter-state Taxes;

iv. not do or omit to do any act, deed or thing which may in any manner be violative of any of the provisions of this Agreement;

v. support, cooperate with and facilitate the Contractor in the implementation of the Project in accordance with the provisions of this Agreement; and

vi. upon written request from the Contractor and subject to the provisions of Clause 14.2, provide reasonable assistance to the Contractor and any expatriate personnel of the Contractor or its Subcontractors to obtain applicable visas and work permits for the purposes of discharge by the Contractor or its Sub-

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contractors of their obligations under this Agreement and the Agreements with the Subcontractors.

16. Representations and warranties of the Contractor

16.1. The Contractor represents and warrants to the Employer that:

(a) It is duly organized and validly existing under the laws of India, and has full power and authority/capability to execute and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;

(b) it has taken all necessary corporate and/or other actions under Applicable Laws to authorize the execution and delivery of this Agreement and to validly exercise its rights and perform its obligations under this Agreement;

(c) this Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with the terms hereof, and its obligations under this Agreement will be legally valid, binding and enforceable against it in accordance with the terms hereof;

(d) it is subject to the laws of India, and hereby expressly and irrevocably waives any immunity in any jurisdiction in respect of this Agreement or matters arising thereunder including any obligation, liability or responsibility hereunder;

(e) the information furnished in the Bid and as updated on or before the date of this Agreement is true and accurate in all respects as on the date of this Agreement;

(f) the execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under, or accelerate performance required by any of the terms of its memorandum and articles of association or any Applicable Laws or any covenant, contract, Agreement, arrangement, understanding, decree or order to which it is a party or by which it or any of its properties or assets is bound or affected;

(g) there are no actions, suits, proceedings, or investigations pending or, to its knowledge, threatened against it at law or in equity before any court or before any other judicial, quasi-judicial or other authority, the outcome of which may result in the breach of this Agreement or which individually or in the aggregate may result in any Material impairment of its ability to perform any of its obligations under this Agreement.

(h) it has no knowledge of any violation or default with respect to any order, writ, injunction or decree of any court or any legally binding order of any Government Instrumentality which may result in any Material adverse effect on its ability to perform its obligations under this Agreement and no fact or circumstance exists which may give rise to such proceedings that would adversely affect the performance of its obligations under this Agreement;

(i) it has complied with Applicable Laws in all Material respects and has not been subject to any fines, penalties, injunctive relief or any other civil or criminal liabilities which in the aggregate have or may have a Material adverse effect on its ability to perform its obligations under this Agreement;

(j) no representation or warranty by it contained herein or in any other document furnished by it to the Employer or to any Government Instrumentality in relation to Applicable Permits contains or will contain any untrue or misleading statement of Material fact or omits or will omit to state a Material fact necessary to make such representation or warranty not misleading;

(k) no sums, in cash or kind, have been paid or will be paid, by it or on its behalf, to any person by way of fees, commission or otherwise for securing the contract or entering into

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this Agreement or for influencing or attempting to influence any officer or employee of the Employer in connection therewith;

(l) all information provided by the {selected bidder/ members of the Consortium} in response to the Qualification and Request for Proposals or otherwise, is to the best of its knowledge and belief, true and accurate in all Material respects; and

(m) Nothing contained in this Agreement shall create any contractual relationship or obligation between the Employer and any Sub- contractors, designers, consultants or agents of the Contractor.

16.2. Representations and warranties of the Employer

The Employer represents and warrants to the Contractor that:

(a) it has full power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated herein and that it has taken all actions necessary to execute this Agreement, exercise its rights and perform its obligations, under this Agreement;
(b) it has taken all necessary actions under the Applicable Laws to authorize the execution, delivery and performance of this Agreement;
(c) it has the financial standing and capacity to perform its obligations under this Agreement;
(d) this Agreement constitutes a legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
(e) it has no knowledge of any violation or default with respect to any order, writ, injunction or any decree of any court or any legally binding order of any Government Instrumentality which may result in any Material adverse effect on the Employer's ability to perform its obligations under this Agreement;
(f) it has complied with Applicable Laws in all Material respects;
(g) it has good and valid right to the Site.

16.3. Disclosure

In the event that any occurrence or circumstance comes to the attention of either Party that renders any of its aforesaid representations or warranties untrue or incorrect, such Party shall immediately notify the other Party of the same. Such notification shall not have the effect of remedying any breach of the representation or warranty that has been found to be untrue or incorrect nor shall it adversely affect or waive any obligation of either Party under this Agreement.

17. Existing utilities and roads

17.1. Notwithstanding anything to the contrary contained herein, the Contractor shall ensure that the respective entities owning the existing roads, right of way, level crossings, structures, or utilities on, under or above the Site are enabled by it to keep them in continuous satisfactory use, if necessary, by providing suitable temporary diversions with the authority of the controlling body of that road, right of way or utility.

17.2. Shifting of obstructing utilities

- The Contractor shall, in accordance with Applicable Laws and with assistance of the PBMC, cause shifting of any utility (including electric lines, water pipes and telephone cables etc.) to an appropriate location or alignment, if such utility or obstruction adversely affects the execution of Works or Maintenance of the Project Works in accordance with this Agreement. The cost of such shifting shall be paid by the Contractor and deemed to be included in the Price Bid and no extra Cost for same shall be payable. Contractor need to plan to execute the work within the time schedule considering all utility shifting if required.

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- Dismantling and removal of existing utilities including power distribution lines, water lines, any building material, doors, windows etc. which are not to be shifted/relocated shall be part of the scope of works under the contract and shall be included in the Contract Price. The material so dismantled shall be property of the PBMC and shall be handed over the PBMC Contractor's acknowledgement

The Contractor acknowledges that Related Works shall be performed and that it is of paramount importance that the design and execution of the Works are co-ordinated with any Related Works.

17.3. **Related Works' responsibilities**

Accordingly, the Contractor shall at all times and otherwise in accordance with the reasonable requirements and directions of the Employer's Representative:

(a) take all reasonable steps to co-ordinate and to integrate the design and execution of the Works, including the work of Subcontractors, with the activities of the Related Works Contractors; and

(b) attend such co-ordination meetings called by the Employer's Representative to plan, review and determine co-ordinated activities for the management of interfaces between the Works and any Related Works; and

(c) at all times refrain from carrying out any operation on the Site in a manner which is likely to cause damage or inconvenience to the execution of any Related Works; where such damage or inconvenience is the unavoidable consequence of operations properly to be carried out on the Site, the Contractor shall not carry out such operations without first giving reasonable advance notice in writing thereof to the Employer's Representative (with a copy to those responsible for carrying out any Related Works reasonably likely to be affected thereby) with a view to reaching an agreed procedure to prevent or minimise any such damage or inconvenience. In particular, the Contractor shall at all times prevent the discharge of surface water across the Site except where the Employer's Representative gives its prior written consent for such discharge; and

(d) at all times co-operate with the Employer, the Employer's Representative/Engineer and any Related Works Contractors so as to promote and foster a co-ordinated and integrated approach to the Works and any Related Works; and

(e) monitor the coordination and integration of the Works with any Related Works and advise the Employer's Representative in writing as and when it becomes apparent that the design or execution of the Works is likely to be the subject of delay and/or disruption and recommend reasonable proposals to reduce or prevent such delay and/or disruption.

17.4. The Employer shall assist the Contractor in obtaining the Applicable Permits for felling of trees to be identified by the Employer for this purpose if and only if such trees cause a Material Adverse Effect on the Construction or Maintenance of the Project Works. The cost of such felling trees shall be borne by the Contractor and in the event of any delay in felling thereof for reasons beyond the control of the Contractor; it shall be excused for failure to perform any of its obligations hereunder if such failure is a direct consequence of delay in the felling of trees. The Parties hereto agree that the felled trees (except the Scheduled trees, which shall be Employers Property) shall be deemed to be owned by the Employer and shall be disposed in such a manner and subject to such conditions as the Employer may in its sole discretion deem appropriate, as as appropriate with required statutory approvals. Obtaining the required statutory approvals for above shall be the responsibility of the Contractor. For the avoidance of doubt, the Parties agree that if any felling of trees hereunder is in a forest area, the Applicable Permit thereof shall be procured by the Employer within the time specified in the Agreement.

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18. QUALITY ASSURANCE, MONITORING AND SUPERVISION

18.1. Quality of Materials and Workmanship

The Contractor shall ensure that the Construction, Materials and workmanship are in accordance with the requirements specified in this Agreement, Specifications and Standards and Good Industry Practice.

18.2. Quality Control System

18.2.1. The Contractor shall establish a quality control mechanism to ensure compliance with the provisions of this Agreement (the "**Quality Assurance Plan**" or "**QAP**").

18.2.2. The Contractor shall, within 30 (thirty) days of the Appointed Date, submit to the Employer's Engineer its Quality Assurance Plan which shall include the following:

(a) organisation, duties and responsibilities, procedures, inspections and Documentation;
(b) quality control mechanism including sampling and testing of Materials, test frequencies, standards, acceptance criteria, testing facilities, reporting, recording and interpretation of test results, approvals, check list for Site activities, and proforma for testing and calibration in accordance with the relevant, BIS standards, international Standards relevant to project components and Good Industry Practice; and

18.2.3. The Contractor shall procure all documents, apparatus and instruments, fuel, consumables, water, electricity, labour, Materials, samples, and qualified personnel as are necessary for examining and testing the Project Assets and workmanship in accordance with the Quality Assurance Plan.

18.2.4. The cost of testing of Construction, Materials and workmanship under this Clause shall be borne by the Contractor.

18.3. Inspection and Technical Audit by the Employer

The Employer or any representative authorized by the Employer in this behalf may inspect and review the progress and quality of the Construction of Project Works and issue appropriate directions to the Employer's Engineer and the Contractor for taking remedial action in the event the Works are not in accordance with the provisions of this Agreement.

18.4. The Employer shall have the right to inspect the records of the Contractor relating to the Works.

18.5. Monthly Progress Reports

During the Construction Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Employer and the Employer's Engineer a monthly report on progress of the Works for their review and shall promptly give such other relevant information as may be required by the Employer's Engineer

18.6. Inspection

18.6.1. The Employer's Engineer and its authorized representative shall at all reasonable times:

(a) have full access to all parts of the Site and to all places from which natural Materials are being obtained for use in the Works; and
(b) during production, manufacture and Construction at the Site and at the place of production, be entitled to examine, inspect, measure and test the Materials and workmanship, and to check the progress of manufacture of Materials.

18.7. The Contractor shall give the Employer's Engineer and its authorized agents access, facilities and safety equipment for carrying out their obligations under this Agreement.

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18.8. Samples

The Contractor shall submit the following samples of Materials and relevant information to the Employer's Engineer for pre-Construction review:

(a) manufacturer test reports and standard samples of manufactured Materials; and
(b) samples of such other Materials as the Employer's Engineer may require, shall be got tested by State/Central Government approved laboratories.

18.9. Tests

18.9.1. For determining that the Works conform to the Specifications and Standards, the Employer's Engineer shall require the Contractor to carry out or cause to be carried out Tests, at such time and frequency and in such manner as specified in this Contract, and in accordance with Good Industry Practice for quality assurance. The test checks by the Employer's Engineer shall comprise at least 20 (twenty) percent of the quantity or number of Tests prescribed for each category or type of test for quality control by the Contractor. The Cost of same shall be deemed included in the Price and no extra cost shall be payable.

18.9.2. In the event that results of any Tests conducted under this Clause 18.9 establish any Defects or deficiencies in the Works, the Contractor shall carry out remedial measures and furnish a report to the Employer's Engineer in this behalf. The Employer's Engineer shall require the Contractor to carry out or cause to be carried out Tests to determine that such remedial measures have brought the Works into compliance with the Specifications and Standards, and the procedure shall be repeated until such Works conform to the Specifications and Standards. For the avoidance of doubt, the cost of such Tests and remedial measures in pursuance thereof shall be solely borne by the Contractor.

18.10. Examination of Work before Covering up

In respect of the work which the Employer's Engineer is entitled to examine, inspect, measure and/or test before it is covered up or put out of view or any part of the work is placed thereon, the Contractor shall give notice to the Employer's Engineer whenever any such work is ready and before it is covered up. The Employer's Engineer shall then either carry out the examination, inspection or testing without unreasonable delay, or promptly give notice to the Contractor that the Employer's Engineer does not require to do so. Provided, however, that if any work is of a continuous nature where it is not possible or prudent to keep it uncovered or incomplete, then Contractor shall notify the schedule of carrying out such work to give sufficient opportunity, not being less than 3 (three) business days' notice, to the Employer's Engineer to conduct its inspection, measurement or test while the work is continuing. Provided further that in the event the Contractor receives no response from the Employer's Engineer within a period of 3 (three) business days from the date on which the Contractor's notice hereunder is delivered to the Employer's Engineer, the Contractor shall be entitled to assume that the Employer's Engineer would not undertake the said inspection. However, for avoidance of doubt, inspection/review by Employers Engineer/Employers Representative/Employer shall not relieve the contractor from its obligations under the contract for design, Construction and Performance of the complete facilities.

18.11. Rejection

If, as a result of an examination, inspection, measurement or testing, any Plant, Materials, design or workmanship is found to be defective or otherwise not in accordance with the provisions of this Agreement, the Employer's Engineer shall reject the Plant, Materials, design or workmanship by giving notice to the Contractor with reasons. The Contractor shall then

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promptly make good the Defect and ensure that the rejected item complies with the requirements of this Agreement. The cost of same shall be borne by the Contractor.

If the Employer's Engineer requires the Plant, Materials, design or workmanship to be retested, the Tests shall be repeated under the same terms and conditions, as applicable in each case. If the rejection and retesting cause the Employer to incur any additional costs, such cost shall be recoverable by the Employer from the Contractor; and may be deducted by the Employer from any monies due to be paid to the Contractor.

18.12. Remedial Work

18.12.1. Notwithstanding any previous test or certification, the Employer's Engineer may instruct the Contractor to:

(a) remove from the Site and replace any Plant or Materials which are not in accordance with the provisions of this Agreement;
(b) remove and re-execute any work which is not in accordance with the provisions of this Agreement and the Specification and Standards; and
(c) Execute any work which is urgently required for the safety of the Project Works, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 26 shall apply.

18.13. If the Contractor fails to comply with the instructions issued by the Employer's Engineer under Clause 18.12. within the time specified in the Employer's Engineer's notice or as mutually agreed, the Employer's Engineer may advise the Employer to have the work executed by another agency. The cost so incurred by the Employer for undertaking such work shall, without prejudice to the rights of the Employer to recover Damages in accordance with the provisions of this Agreement, be recoverable from the Contractor and may be deducted by the Employer from any monies due to be paid to the Contractor.

18.14. Quality control Records and Documents

The Contractor shall hand over to the Employer's Engineer a copy of all its quality control records and documents before the Completion Certificate is issued pursuant to Clause 30

18.15. Video Recording

During the Construction Period, the Contractor shall provide to the Employer for every calendar quarter, a video recording, which will be compiled into a 1.5-2 hour compact disc or digital video disc, as the case may be, covering the status and progress of Works in that quarter. The video recording shall be provided to the Employer no later than 15 (fifteen) days after the close of each quarter after the Commencement Date.

18.16. Suspension of Unsafe Construction Works

18.16.1. The Employer/ Employer's Engineer/Representative may by notice require the Contractor to suspend forthwith the whole or any part of the Works if, in the reasonable opinion of the Employer/ Employer's Engineer/Representative, such work threatens the safety of the Users and pedestrians.

18.16.2. The Contractor shall, pursuant to the notice under Clause 18.16.1, suspend the Works or any part thereof for such time and in such manner as may be specified by the Employer/ Employer's Engineer/Representative and thereupon carry out remedial measures to secure the safety of suspended Works, the Users and pedestrians. The Contractor may by notice require the Employer's Engineer to inspect such remedial measures forthwith and make a report to the Employer recommending whether or not the Suspension hereunder

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may be revoked. Upon receiving the recommendations of the Employer's Engineer, the Employer shall either revoke such Suspension or instruct the Contractor to carry out such other and further remedial measures as may be necessary in the reasonable opinion of the Employer, and the procedure set forth in this Clause 18.16 shall be repeated until the Suspension hereunder is revoked.

18.16.3. Subject to the provisions of Clause 26 Force Majeure, all reasonable costs incurred for maintaining and protecting the Works or part thereof during the period of Suspension (the "**Preservation Costs**"), shall be borne by the Contractor; provided that if the Suspension has occurred as a result of any breach of this Agreement by the Employer, the Preservation Costs shall be borne by the Employer.

18.16.4. If Suspension of Works is for reasons not attributable to the Contractor, the Employer's Engineer shall determine any Time Extension to which the Contractor is reasonably entitled.

19. Insurance for Works

19.1. The Contractor shall effect and maintain at its own cost, from the Commencement Date till the date of issue of the Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire and terrorism:

(a) insurance of Works, Plant and Materials and an additional sum of [15 (fifteen)] per cent of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature; and

(b) Insurance for the Contractor's equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

(c) The Contractor shall effect and maintain at its own cost, from the Commencement Date till the date of issue of the Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire, terrorism and War and Riots Protection Insurance

(d) The insurance in Clause 19.1. above shall cover the Employer and the Contractor against all loss or damage from whatsoever cause arising under above cited conditions other than risks which are not insurable at commercial terms.

19.2. "All risks of loss including theft of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the Exceptional Risks are the responsibility of the Contractor. Any loss not insured or not recovered (including policy excesses etc.) from insurers shall be borne by the Contractor. All insurances shall be in the joint name of contractor and the Employer. The contract shall maintain a Contractors All Risk Policy (CAR) for the entire duration of the contract for the entire Project facility" The Contractor shall also take additional covers (Add-On covers) insurance like Third Party Liability, Surrounding

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properties, Clearance and Removal of debris, Cross liability, Express Freight, Extended Maintenance Cover upto Final Takeover, etc. The sum insured for such Add-On covers shall be decided by the CONTRACTOR based on his assessment and risk involved in the contract. Risks to be covered by insurance shall not be limited merely to the items mentioned above. The CONTRACTOR shall arrange for insurance of any other risks he may deem prudent, but the expenses thereof shall be to the account of the contractor only full plant. If necessary, Transit and storage (all risks) insurance coverage for additional transit involved for sending equipment/material to Sub-Contractor/Fabricator's shop for fabrication/ reprocessing and receiving back at site shall be taken.

19.3. **Insurance for Contractor's Defects Liability**

The Contractor shall effect and maintain Insurance Cover for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period whichever is greater for any loss or damage for which the Contractor is liable and arises from a cause occurring prior to the issue of Completion Certificate. The Contractor shall also maintain other insurances for maximum sums as may be required under the Applicable Laws and in accordance with Good Industry Practice.

19.4. **Insurance against injury to persons and damage to property**

The Contractor shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Clause 19.1, 19.2 and 19.3 or to any person (except persons insured under Clause 19.9), which may arise out of the Contractor's performance of this Agreement and occurring before the issue of the Completion Certificate. This insurance shall be for a limit per occurrence of not less than the amount stated below with no limit on the number of occurrences.

The Insurance Cover shall be not less than: Rs. 20 Lakhs.

19.5. With respect to the marine cargo insurance, the transportation of certain items shall be subject to a customary Critical Items survey warranty or condition and a Critical Items separation warranty or condition. The Contractor shall appoint, on behalf of the insurers, a recognized surveying body for such pre-shipment inspection at the latest ninety (90) Days prior to the first delivery of any material and equipment destined for transportation to the Site and destined for incorporation in the Project. The Contractor shall comply with all reasonable recommendations of the surveying body and shall immediately notify Employer' Engineer/Representative of any unreasonable recommendation or any failure by the surveyor to issue the relevant certification. For purposes of this Agreement, the term Critical Item shall mean an item that (i) in the event of a total loss during its transportation to the Site could not be replaced, reshipped, installed, tested and commissioned within three (3) months of the applicable milestone date or (ii) is otherwise on the critical path for achievement of the Scheduled Completion Date. The Contractor agrees and acknowledges that the marine cargo insurance cover to be procured and maintained by them pursuant to this Sub-Clause and any marine cargo delay in start-up cover procured by them at its sole discretion and benefit could be invalidated by a failure to adhere to each of the Critical Items survey warranty or condition and the Critical Items separation warranty and shall ensure that the transportation of the relevant Critical Items shall not commence, or in case of transit continue, until the surveying body has issued an inspection certificate approving the packaging, load plans, stowage, conveyances and routing of such Critical Items. The Contractor's compliance with the recommendations of the surveying body or the issuance of an inspection certificate shall not relieve the Contractor of its responsibility for risk of loss or damage pursuant to this Agreement. The Contractor shall provide reasonable advance notice to Employer's Representative, or the surveying body assigned thereto by the Employer's Representative, of the dates of packing and commencement of transportation of the relevant Critical Items.

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19.6. The insurance shall be extended to cover liability for all loss and damage to the Employer's property arising out of the Contractor's performance of this Agreement excluding:

(a) the Employer's right to have the Construction Works executed on, over, under, in or through any land, and to occupy this land for the Works; and

(b) Damage which is and unavoidable result of the Contractor's obligations to execute the Works.

19.7. The Contractor shall provide to the Employer, within 15 days of the Commencement Date, evidence of professional liability insurance maintained by its Design Director and/or consultants to cover the risk of professional negligence in the design of Works. The professional liability coverage shall be for a sum of not less than 5% (Five per cent) of the Contract Price and shall be maintained until the end of the Defects Liability Period. The Employer's Engineer/Representative will not issue Completion Certificate until the Contractor has produced evidence that coverage of the professional indemnity insurance has been provided for the aforesaid period.

19.8. **Insurance to be in joint names**

All the insurance except specified in 19.6 above shall be in the joint names of the Contractor and the Employer .

19.9. Subject to the exceptions specified in Clause 19.9 below, the Contractor shall, save and except as provided for in this Agreement, fully indemnify, hold harmless and defend the Employer from and against any and all losses, Damages, costs, charges and/or claims with respect to:

(a) the death of or injury to any person; or

(b) the loss of or damage to any property (other than the Works);

That may arise out of or in consequence of any breach by the Contractor of this Agreement during the execution of the Works or the remedying of any Defects therein.

19.10. Notwithstanding anything stated above in Clause 19.8, the Employer shall fully indemnify the Contractor from and against any and all losses, Damages, costs, charges, proceedings and/or claims arising out of or with respect to

(a) the use or occupation of land or any part thereof by the Employer;

(b) the right of the Employer to execute the Works, or any part thereof, on, over, under, in or through any land;

(c) the damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any Defects therein, in accordance with this Agreement; and

(d) the death of or injury to persons or loss of or damage to property resulting from any act or neglect of the Employer, its agents, servants or other contractors, not being employed by the Contractor Provided that, in the event of any injury or damage as a result of the contributory negligence of the Contractor, the Employer shall be liable to indemnify the Contractor from and against any and all

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losses, Damages, costs, charges, proceedings and/or claims to the extent as may be proportionately determined to be the liability of the Employer, its servants or agents or other contractors not associated with the Contractor in such injury or damage.

19.11. Without prejudice to the obligations of the Parties as specified under Clauses 19.8 and 19.9, the Contractor shall maintain or effect such third party insurances as may be required under the Applicable Laws.

19.12. Evidence of Insurance Cover

All insurances obtained by the Contractor in accordance with this Clause 19 shall be maintained with insurers on terms consistent with Good Industry Practice. Within 15 (Fifteen) days from the Commencement Date, the Contractor shall furnish to the Employer true copies of the certificate(s) of insurance, copies of insurance policies and premium payment receipts in respect of such insurance, and no such insurance shall be canceled, modified, or allowed to expire or lapse until the expiration of at least 45 (forty-five) days after notice of such proposed cancellation, modification or non-renewal has been delivered by the Contractor to the Employer. The Contractor shall act in accordance with the directions of the Employer. Provided that the Contractor shall produce to the Employer the insurance policies in force and the receipts for payment of the current premium.

The Contractor shall ensure the adequacy of the insurances at all times in accordance with the provisions of this Agreement.

19.13. Remedy for Failure to Insure

If the Contractor shall fail to effect and keep in force all insurances for which it is responsible pursuant hereto, the Employer shall have the option to either keep in force any such insurances, and pay such premium and recover the costs thereof from the Contractor, or in the event of computation of a Termination Payment, treat an amount equal to the Insurance Cover as deemed to have been received by the Contractor.

19.14. Cross Liabilities

Any such insurance maintained or effected in pursuance of this Clause 19 shall include a cross liability clause such that the insurance shall apply to the Contractor and to the Employer as separately insured.

19.15. Accident or Injury to Workmen

Notwithstanding anything stated in this Tender Document/Agreement, it is hereby expressly agreed between the Parties that the Employer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or Sub-contractor, save and except as for death or injury resulting from any act, omission or default of the Employer, its agents or servants. The Contractor shall indemnify and keep indemnified the Employer from and against all such claims, proceedings, damages, costs, charges, and expenses whatsoever in respect of the above save and except for those acts, omissions or defaults for which the Employer shall be liable.

19.16. Insurance against Accident to Workmen

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The Contractor shall effect and maintain during the complete period of this contract or agreement such insurances as may be required to insure the Contractor's personnel and any other persons employed by it on the Project Site from and against any liability incurred in pursuance of this Clause 19 . Provided that for the purposes of this said Clause, the Contractor's personnel/any person employed by the Contractor shall include the Sub-contractor and its personnel. It is further provided that, in respect of any persons employed by any Sub-contractor, the Contractor's obligations to insure as aforesaid under this Clause 19.15 shall be discharged if the Sub-contractor shall have insured against any liability in respect of such persons in such manner that the Employer is indemnified under the policy. The Contractor shall require such Sub-contractor to produce before the Employer, when required, such policy of insurance and the receipt for payment of the current premium within 10 (ten) days of such demand being made by the Employer.

19.17. Application of Insurance Proceeds

The proceeds from all insurance claims, except for life and injury, shall be applied for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project Works and the provisions of this tender document/Agreement in respect of Construction of Works shall apply *mutatis mutandis* to the Works undertaken out of the proceeds of insurance.

19.18. Compliance with Policy Conditions

Each Party hereby expressly agrees to fully indemnify the other Party from and against all losses and claims arising from its failure to comply with conditions imposed by the insurance policies effected in accordance with this Agreement.

20. Delays during Construction

Without prejudice to the provisions of Clause 5, in the event the Contractor does not achieve the time schedule as per Clause 5 or the Employer's Engineer shall have reasonably determined that the rate of progress of Works is such that Completion of the Project Works is not likely to be achieved by the end of the Scheduled Completion Date, it shall notify the same to the Contractor, and the Contractor shall, within 15 (fifteen) days of such notice, by a communication inform the Employer's Engineer in reasonable detail about the steps it proposes to take to expedite progress and the period within which it shall achieve the Project Completion Date.

21. Payment Terms

21.1. The contractor shall submit a detailed billing break up for each item including civil, structural and E&M Design Build/ Construction Portion for approval to the Employers Engineer/Representative and shall be the basis of payment LDs.

21.2. **The payment terms of Capital Works shall be as follows:**

1. 10% of the total contract value for Design-Build/Construction portion of the contract as adjustable advance against Bank Guarantee of 110% value. As per Clause 6 of this contract.

2. The progress payments shall be made as follows:

I. **All Bought Out Civil, Mechanical, Electrical and other relevant items of the work etc, fountains, wall, Electrical fixtures, Electro Mechanical, Electrical Pipe MS/DI/DWC/PVC/CI/any material**

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i) 65% payment shall be made against receipt of material at site on pro-rata basis and as per approved billing schedule and submission of following documents:

a. Clear Lorry Receipt

b. Packing list

c. Test Certificate

d. Pre-dispatch inspection certificate

e. Warranty Certificate

f. Dispatch clearance from Employer

g. For Imported equipment / items following additional documents shall also be submitted

- Clean bills of Lading / Air way bill
- Certificate of country of origin
- Certificate from the supplier that the contents in each case are not less than those entered in the invoice and packing list and the quality of goods are guaranteed as new and as per the relevant technical specification Catalogues

iii) 20% payment shall be made against completion of Laying, Jointing, Erection on pro-rata basis.

iv) 10% payment shall be made towards completion of satisfactory Testing/Hydrotesting & Commissioning for fountains, for other shall be on successful trail run

v) 5% payment shall be made within 90 days of successful Performance Test and issue of Completion Certificate.

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III. **Civil Works –**

(a) 20% payment shall be made against completion of Sub-structure/piling/raft upto plinth level on pro-rata basis.

(b) 45% payment shall be made towards completion of super structure on pro-rata basis.

(c) 10% on completion of allied items such as handrail, painting, epoxy coat etc. on pro-rata basis.

(d) 10% payment shall be made on successful Hydro-test for the said single unit in totality.

(e) 10% payment shall be made towards completion of satisfactory Testing & Commissioning

(f) 5% payment shall be made within 90 days of successful Performance Test and issue of Commissioning Certificate.

21.3. No interim certificate shall be less than 2% of the Contract Price.

21.4. Security Deposit shall be deducted as per Clause 7 of this contract.

21.5. PAYMENT DATE

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a. Each Invoice shall be due and payable Forty (45) Days after the Day on which it is received by the Employer or, if such due date is not a Business Day, the next Business Day (each such date, a **Payment Date**).

b. Where in respect of any month there is both an amount payable by Employer to the Contractor (pursuant to the invoice) and an amount payable by the Contractor the Employer (due to liquidated damages or otherwise pursuant to this Agreement) and such amount (along with delay rate for delayed payment, if applicable) has not been paid by the Contractor within 15 days of its receipt by the Contractor, the two amounts may at the discretion of the Employer be set off against each other and the balance only shall be paid by Employer to the Contractor or by the Contractor to Employer (as appropriate).

c. The Employer shall pay the Invoice Amount to the Contractor on or before the Due Date of the Invoice Amount in immediately available and freely transferable cleared funds to the account of the Contractor at a Bank in Port Blair to be notified by the Contractor in writing ("Operating Account").

d. No interest shall be payable on a delayed payment beyond the due date by the Employer.

e. As otherwise provided above, all net payments owing to one Party under the Agreement to the other Party shall be made free of any restriction or condition and without deduction or withholding (except to the extent required by the law) on account of any other amount, whether by way of set off or otherwise, but the making of payments shall be without prejudice to other rights of the persons doing so.

21.6. DISPUTE IN INVOICE

a. If a Party does not question or dispute an invoice within thirty (30) days of receiving it, the invoice shall be considered correct and complete and conclusive between the Parties except in the case where that Party could not reasonably have identified any error or omission in the invoice, taking into account the information then available to it during the above thirty (30) day period.

b. If either Party disputes any item or part of an item set out in any invoice then that Party shall serve a notice (an "Invoice Dispute Notice") on the other Party setting out the item or part of an item set out in such invoice which is in dispute together with the estimate of which such item or part of an item should be.

c. In the event that Employer disputes all or any portion of the Invoice, it shall nevertheless pay the minimum of the moving average of the preceding three months (excluding any shut month) or the full amount of the disputed charges when due, provided the invoice has been prepared in accordance with the provisions as mentioned above. The payment of the disputed charges will not in any way prejudice the rights of the Contractor under this section.

d. In the event that the Parties do not, within fourteen (14) days of the delivery of an Invoice Dispute Notice, resolve any disputes arising under Item (b) above, then, the dispute will be resolved, within thirty (30) days, by a committee comprising two representatives each of the Contractor and Employer, under the Chairmanship of a Director of Employer/ any authorized representative. In the event that the committee is not able to take a decision during this 15 day period or if any Party to the dispute does not accept the decision of the committee (whether in whole or in part), the dispute arising under (b) above shall resolved under manner set out in Dispute Resolution Clause 25 .

e. Upon resolution of any dispute arising under (b) above, the amount (if any) due to the prevailing Party shall be paid within twenty (20) days together with interest accrued from the date on which the prevailing Party had originally made the payment until the date of receipt of refund of this payment by the prevailing Party, at the rate equal to 1.5% per month.

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22. Defects Liability Period

22.1. The Contractor shall be responsible for all the Defects and deficiencies, in the Project Works or any Section thereof, till the expiry of a period of 2 (two) years commencing from the date of issue of Completion Certificate (the "**Defects Liability Period**"). For the avoidance of doubt, any repairs or restoration on account of usual wear or tear in the Project Works or any Section thereof shall form a part of the Maintenance obligations of the Contractor as specified in Vol-II Technical Specifications.

22.2. Remedying Defects

22.2.1. Save and except as provided in Vol-II Technical Specifications. , the Contractor shall repair or rectify or replace all Defects and deficiencies observed by the Employer's Engineer during the Defects Liability Period within a period of 15 (fifteen) days from the date of notice issued by the Employer's Engineer in this behalf, or within such reasonable period as may be determined by the Employer's Engineer at the request of the Contractor, in accordance with Good Industry Practice.

22.2.2. Cost of Remedying Defects

For the avoidance of doubt, any repair or rectification or replacement of any/all units of project undertaken in accordance with the provisions of Clause 22.2, including any additional testing, shall be carried out by the Contractor at its own risk and cost, to the extent that such rectification and repair is attributable to:

a) The design of the Project:

b) Plant, Materials or Workmanship not being in accordance with this agreement and the Specifications and Standards;

c) Improper Maintenance during Construction of the Project Works by the Contractor; and/or

d) Failure by the Contractor to comply with any other obligation under this agreement.

22.3. Contractor's Failure to Rectify Defects

In the event that the Contractor fails to repair or rectify such Defect or deficiency within the period specified in Clause 22.2, the Employer shall be entitled to get the same repaired, rectified or remedied at the Contractor's cost so as to make the Project Works conform to the Specifications and Standards and the provisions of this Agreement. All costs consequent thereon shall, after due consultation with the Employer and the Contractor, be determined by the Employer's Engineer. The cost so determined for repair or rectification or replacement of such defects plus an amount equal to hundred percent (100%) of the above cost as Damages shall be recoverable by the Employer from the Contractor and may be deducted by the Employer from any monies due to the Contractor.

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22.4. Contractor to Search Cause

22.4.1. The Employer's Engineer may instruct the Contractor to examine the cause of any Defect in the Works or part thereof before the expiry of the Defects Liability Period.

22.4.2. In the event any Defect identified and is attributable to the Contractor, the Contractor shall rectify such Defect within the period specified by the Employer's Engineer, and shall bear the cost of the examination and rectification of such Defect.

22.4.3. In the event such Defect is not attributable to the Contractor, the Employer's Engineer shall, after due consultation with the Employer and the Contractor, determine the costs incurred by the Contractor on such examination and notify the same to the Contractor, with a copy to the Employer, and the Contractor shall be entitled to payment of such costs by the Employer.

22.5. Extension of Defects Liability Period

The Defects Liability Period shall be deemed to be extended till the identified Defects under Clause 22.2 have been remedied.

23. Any cost or delay in Construction arising from review by the Employer's Engineer shall be borne by the Contractor

24. Liquidated Damages

For Delay in completion of work by the Contractor, the PBMC have full power to recover delay damage in following manners: -

For Delay Period the delay damage will be calculated Per Week at 0.5% (Zero Point Five Percent) of Agreed Contract Price. In case, it is less than a week, it will be worked on prorate basis. Total delay damage limited maximum to 10% of Agreement Amount. PBMC will be fully responsible for recovery of delay damage. This delay damage will be considered as Liquidated damage and not as Penalty. Milestone dates are as below:

Percentage of Financial work Completion (Excluding Any Advance Payments)	Time lines in Months (from the date of commencement)
Cumulative	
2%	1
6%	3
20%	5
40%	7
60%	9
100%	12

All supporting details of work sequence, deployment of men and materials, T & P , equipments will be furnished to PBMC in support of the above mile stone Failure to achieve the above milestones will attract Delay damages as described above.

25. Dispute Resolution:

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25.1. Any Dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure set forth in Clause 25.2.

The Parties agree to use their best efforts for resolving all Disputes arising under or in respect of this Agreement promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to all non-privileged records, information and data pertaining to any Dispute.

25.2. Conciliation

In the event of any Dispute between the Parties, either Party may call upon the Employer's Engineer/PMC/Employers Representative, or such other person as the Parties may mutually agree upon (the "**Conciliator**") to mediate and assist the Parties in arriving at an amicable settlement thereof. Failing mediation by the Conciliator or without the intervention of the Conciliator, either Party may require such Dispute to be referred to the Chief Operating Officer/Managing Director of the Employer and the Chairman of the Board of Directors of the Contractor for amicable settlement, and upon such reference, the said persons shall meet no later than 7 (seven) business days from the date of reference to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the 7 (seven) business day period or the Dispute is not amicably settled within 15 (fifteen) days of the meeting or the Dispute is not resolved as evidenced by the signing of written terms of settlement within 30 (thirty) days of the notice in writing referred to in Clause 25.1. or such longer period as may be mutually agreed by the Parties, either Party may refer the Dispute to arbitration in accordance with the provisions of Clause 25.3.

25.3. Arbitration

25.3.1. Any Dispute which is not resolved amicably by conciliation, as provided in Clause 25.2, shall be finally decided by reference to arbitration by a Board of Arbitrators appointed in accordance with Clause 25.3.2. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi (the "Rules"), or such other rules as may be mutually agreed by the Parties and shall be subject to the provisions of the Arbitration Act. The venue of such arbitration shall be Port Blair, and the language of arbitration proceedings shall be English.

25.3.2. There shall be a Board of three arbitrators, of whom each Party shall select one, and the third arbitrator shall be appointed by the two arbitrators so selected and in the event of dis Agreement between the two arbitrators, the appointment shall be made in accordance with the Indian Arbitration Rules,1996.

25.3.3. The arbitrators shall make a reasoned award (the "Award"). Any Award made in any arbitration held pursuant to this Clause 25 shall be final and binding on the Parties as from the date it is made, and the Contractor and the Employer agree and undertake to carry out such Award without delay.

25.3.4. The Contractor and the Employer agree that an Award may be enforced against the Contractor and/or the Employer, as the case may be, and their respective assets wherever situated.

25.3.5. This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder.

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25.3.6. In the event the Party against whom the Award has been granted challenges the Award for any reason in a court of law, it shall make an interim payment to the other Party for an amount equal to 75% (seventy five per cent) of the Award, pending final settlement of the Dispute. The aforesaid amount shall be paid forthwith upon furnishing an irrevocable Bank Guarantee for a sum equal to 120 % (one hundred and twenty per cent) of the aforesaid amount. Upon final settlement of the Dispute, the aforesaid interim payment shall be adjusted and any balance amount due to be paid or returned, as the case may be, shall be paid or returned with interest calculated at the rate of 10% (ten per cent) per annum from the date of interim payment to the date of final settlement of such balance.

25.4. Adjudication by Regulatory Employer, Tribunal or Commission

In the event of constitution of a statutory regulatory Employer, tribunal or commission, as the case may be, with powers to adjudicate upon Disputes between the Contractor and the Employer, all Disputes arising after such constitution shall, instead of reference to arbitration under Clause 25.3, be adjudicated upon by such regulatory authority, tribunal or commission in accordance with the Applicable Law and all references to Dispute Resolution Procedure shall be construed accordingly. For the avoidance of doubt, the Parties hereto agree that the adjudication hereunder shall not be final and binding until an appeal against such adjudication has been decided by an appellate tribunal or court of competent jurisdiction, as the case may be, or no such appeal has been preferred within the time specified in the Applicable Law.

26. Force Majeure

26.1. As used in this tender document, the expression "Force Majeure" or "Force Majeure Event" shall mean occurrence in India of any or all of Non- Political Event, Indirect Political Event and Political Event, as defined in Clauses respectively, if it affects the performance by the Party claiming the benefit of Force Majeure (the "**Affected Party**") of its obligations under this Agreement and which act or event (i) is beyond the reasonable control of the Affected Party, and (ii) the Affected Party could not have prevented or overcome by exercise of due diligence and following Good Industry Practice, and (iii) has Material Adverse Effect on the Affected Party.

26.2. Non-Political Event

A Non-Political Event shall mean one or more of the following acts or events:

(a) act of God, epidemic, pandemic, extremely adverse weather conditions, lightning, earthquake, landslide, cyclone, flood, volcanic eruption, chemical or radioactive contamination or ionising radiation, fire or explosion (to the extent of contamination or radiation or fire or explosion originating from a source external to the Site);

(b) strikes or boycotts (other than those involving the Contractor, Subcontractors or their respective employees/representatives, or attributable to any act or omission of any of them) interrupting supplies and services to the Project Works for a continuous period of 24 (twenty-four) hours and an aggregate period exceeding 10 (ten) days in an Accounting Year, and not being an Indirect Political Event set forth in Clause 26.3;

(c) any failure or delay of a Sub-contractor but only to the extent caused by another Non-Political Event;

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(d) any judgment or order of any court of competent jurisdiction or statutory Employer made against the Contractor in any proceedings for reasons other than (i) failure of the Contractor to comply with any Applicable Law or Applicable Permit, or (ii) on account of breach of any Applicable Law or Applicable Permit or of any contract, or (iii) enforcement of this Agreement, or (iv) exercise of any of its rights under this Agreement by the Employer;

(e) the discovery of geological conditions, toxic contamination or archaeological remains on the Site that could not reasonably have been expected to be discovered through a Site inspection; or

26.3. Indirect Political Event

An Indirect Political Event shall mean one or more of the following acts or events:

(a) an act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage;
(b) industry-wide or State-wide strikes or industrial action for a continuous period of 24 (twenty-four) hours and exceeding an aggregate period of 10 (ten) days in an Accounting Year;
(c) any civil commotion, boycott or political agitation which prevents Construction of the Project Works by the Contractor for an aggregate period exceeding 10 (ten) days in an Accounting Year;
(d) any failure or delay of a Sub-contractor to the extent caused by any Indirect Political Event;

26.4. Political Event

A Political Event shall mean one or more of the following acts or events by or on account of any Government Instrumentality:

(a) Change in Law/Legislation, only if consequences thereof cannot be dealt with under and in accordance with the provisions of Clause 9.5;

(b) compulsory acquisition in national interest or expropriation of any Project Assets or rights of the Contractor or of the Sub- Contractors;

(c) unlawful or unauthorized or without jurisdiction revocation of, or refusal to renew or grant without valid cause, any clearance, license, permit, authorization, no objection certificate, consent, approval or exemption required by the Contractor or any of the Sub-contractors to perform their respective obligations under this Agreement; provided that such delay, modification, denial, refusal or revocation did not result from the Contractor's or any Sub- contractor's inability or failure to comply with any condition relating to grant, Maintenance or renewal of such clearance, license, authorization, no objection certificate, exemption, consent, approval or permit;

(d) any failure or delay of a Sub-contractor but only to the extent caused by another Political Event;

26.5. Duty to report Force Majeure Event

26.5.1. Upon occurrence of a Force Majeure Event, the Affected Party shall by notice report such occurrence to the other Party forthwith. Any notice pursuant hereto shall include full particulars of:

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(a) the nature and extent of each Force Majeure Event which is the subject of any claim for relief under this Clause 26 with evidence in support thereof;

(b) the estimated duration and the effect or probable effect which such Force Majeure Event is having or will have on the Affected Party's performance of its obligations under this Agreement;

(c) the measures which the Affected Party is taking or proposes to take for alleviating the impact of such Force Majeure Event; and

(d) any other information relevant to the Affected Party's claim.

26.6. The Affected Party shall not be entitled to any relief for or in respect of a Force Majeure Event unless it shall have notified the other Party of the occurrence of the Force Majeure Event as soon as reasonably practicable, and in any event no later than 10 (ten) days after the Affected Party knew, or ought reasonably to have known, of its occurrence, and shall have given particulars of the probable Material effect that the Force Majeure Event is likely to have on the performance of its obligations under this Agreement.

26.7. For so long as the Affected Party continues to claim to be Materially affected by such Force Majeure Event, it shall provide the other Party with regular (and not less than weekly) reports containing information as required by Clause 26.5.1, and such other information as the other Party may reasonably request the Affected Party to provide.

26.8. Effect of Force Majeure Event on the Agreement

26.8.1. Upon the occurrence of any Force Majeure after the Commencement Date, the costs incurred and attributable to such event and directly relating to this Agreement (the "**Force Majeure costs**") shall be allocated and paid as follows:

(a) upon occurrence of a Non-Political Event, the Parties shall bear their respective Force Majeure costs and neither Party shall be required to pay to the other Party any costs thereof;

(b) upon occurrence of an Indirect Political Event, all Force Majeure costs attributable to such Indirect Political Event, and not exceeding the Insurance Cover for such Indirect Political Event, shall be borne by the Contractor, and to the extent Force Majeure costs exceed such Insurance Cover, one half of such excess amount shall be reimbursed by the Employer to the Contractor for the Force Majeure events; and

(c) upon occurrence of a Political Event, all Force Majeure costs attributable to such Political Event shall be reimbursed by the Employer to the Contractor.

For the avoidance of doubt, Force Majeure costs may include costs directly attributable to the Force Majeure Event, but shall not include debt repayment obligations, if any, of the Contractor.

26.9. Save and except as expressly provided in this Clause 26, neither Party shall be liable in any manner whatsoever to the other Party in respect of any loss, damage, cost, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event or exercise of any right pursuant hereto.

26.10. Upon the occurrence of any Force Majeure Event during the Construction Period, the Project Completion Schedule for and in respect of the affected Works shall be extended on a day for day basis for such period as performance of the Contractor's obligations is affected on account of the Force Majeure Event or its subsisting effects.

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26.11. Termination Notice for Force Majeure Event

If a Force Majeure Event subsists for a period of 60 (sixty) days or more within a continuous period of 120 (one hundred and twenty) days, either Party may in its discretion terminate this Agreement by issuing a Termination Notice to the other Party without being liable in any manner whatsoever, save as provided in this Clause 26, and upon issue of such Termination Notice, this Agreement shall, notwithstanding anything to the contrary contained herein, stand terminated forthwith; provided that before issuing such Termination Notice, the Party intending to issue the Termination Notice shall inform the other Party of such intention and grant 15 (fifteen) days time to make a representation, and may after the expiry of such 15 (fifteen) days period, whether or not it is in receipt of such representation, in its sole discretion issue the Termination Notice.

26.12. Termination Payment for Force Majeure Event

26.12.1. In the event of this Agreement being terminated on account of a Non- Political Event, the Termination Payment shall be an amount equal to the sum payable under Termination clauses of this Contract.

26.12.2. Provided that in the event Termination occurs during the Maintenance Period, the Employer's Engineer shall only determine the value of Works associated with Maintenance.

26.12.3. If Termination is on account of an Indirect Political Event, the Termination Payment shall include:

26.12.3.1.1.1. A) any sums due and payable under Termination clauses of this Contract.

; and

(a) the reasonable cost, as determined by the Employer's Engineer, of the Plant and Materials procured by the Contractor and transferred to the Employer for use in Construction or Maintenance, only if such Plant and Materials are in conformity with the Specifications and Standards;

Provided that in the event Termination occurs during the Maintenance Period, the Employer's Engineer shall only determine the value of Works associated with Maintenance.

If Termination is on account of a Political Event, the Employer shall make a Termination Payment to the Contractor in an amount that would be payable under Termination Clause as if it were an Employer Default.

26.13. Dispute resolution

In the event that the Parties are unable to agree in good faith about the occurrence or existence of a Force Majeure Event, such Dispute shall be finally settled in accordance with the Dispute Resolution Procedure; provided that the burden of proof as to the occurrence or existence of such Force Majeure Event shall be upon the Party claiming relief and/or excuse on account of such Force Majeure Event.

26.14. Excuse from performance of obligations

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If the Affected Party is rendered wholly or partially unable to perform its obligations under this Agreement because of a Force Majeure Event, it shall be excused from performance of such of its obligations to the extent it is unable to perform on account of such Force Majeure Event; provided that:

(a) the Suspension of performance shall be of no greater scope and of no longer duration than is reasonably required by the Force Majeure Event;

(b) the Affected Party shall make all reasonable efforts to mitigate or limit damage to the other Party arising out of or as a result of the existence or occurrence of such Force Majeure Event and to cure the same with due diligence; and

(c) when the Affected Party is able to resume performance of its obligations under this Agreement, it shall give to the other Party notice to that effect and shall promptly resume performance of its obligations hereunder.

27. **Indemnify:**

27.1. The Contractor shall indemnify and protect the Employer/PBMC and nominated staff including project management consultant/ Employers Engineer/Employers Representative while performing the scope of services of this project on all accounts from all aspects including but not limited to the following: .

27.1.1. Against all claims made and liabilities incurred under Workmen's Compensations Act, the Factories Act and the Payment of Wages Act and rules made thereunder from time to time or under any other labour and Industrial legislation made from time to time.

27.1.2. In case any action is taken against the Employer/PBMC by the competent authority on account of contravention of any of the provisions of any Act or rules made thereunder, regulation or notifications including amendment. If the PBMC is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/ regulations including amendments, if any, on the part of the Contractor, the PBMC shall have the right to deduct any money due to the contractor including his amount of performance security. The PBMC shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the PBMC.

27.1.3. In respect of: (a) bodily injury, sickness, disease or death, of any person whatsoever arising out of or in the course of or by reason of the Contractor's design , the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, willful act or breach of the Contract by the PBMC, and nominated staff including project management consultant and (b) damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss arises out of or in the course of or by reason of the Contractor's design , the execution and completion of the Works and the remedying of any defects, unless and to the extent that any such damage or loss is attributable to any negligence, willful act or breach of the Contract by the PBMC, and nominated staff including project management consultant, or anyone directly or indirectly employed by any of them.

27.1.4. Against any claim of subcontractor.

27.1.5. Against any claim for infringement of patent in respect of any equipment, machine, plant, work or thing used or supplied by the contractor under this contract or in respect of any method of using or design or working by the PBMC of such equipment machine, plant, work

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or thing. The Contractor shall indemnify and save harmless the PBMC and nominated staff including project management consultant from and against all actions, suit proceedings, losses, costs, damages, claims, and demands of every nature and description brought or recovered against the the PBMC and nominated staff including project management consultant by reason of any act or omission of the contractor, his agents or employees, in the execution of the works or in his guarding the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

28. **Termination for Contractor Default**

28.1. In the event that any of the defaults specified below shall have occurred, (the "**Contractor Default**"), unless the default has occurred as a result of any breach of the Agreement by the Employer or due to Force Majeure. The defaults referred to herein shall include the following:

a) The Contractor fails to provide, extend or replenish, as the case may be, the Performance Security in accordance with the Conditions of Contract;

a. The Contractor abandons or manifests intention to abandon the construction of the Project without the prior written consent of the Employer;

b. The Contractor stops Works for 30 (thirty) days without reflecting the same in the current programme and such stoppage has not been authorized by the Employer

c. The Contractor fails to rectify any Defect, the non-rectification of which shall have a Material Adverse Effect on the Project, within the time specified in this Agreement or as directed by the Employer or Employers Engineer or Employers Representative;

d. The Contractor subcontracts the Works or any part hereof in violation of this Agreement or assigns any part of the Works without the prior approval of the Employer;

e. The Contractor creates any Encumbrance in breach of this Agreement;

f. An execution levied on any of the assets of the Contractor has caused a Material Adverse Effect;

g. The Contractor is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for the Contractor or for the whole or material part of its assets that has a material bearing on the Project

28.2. Without prejudice to any other rights or remedies which the Employer may have under this Contract, upon occurrence of a Contractor Default, the Employer shall be entitled to terminate this Agreement/Contract in full or part by issuing a Termination Notice to the Contractor; provided that before issuing the Termination Notice, the Employer shall by a notice inform the Contractor of its intention to issue such Termination Notice and grant 15 (fifteen) days to the Contractor to make a representation, and may after the expiry of such 15 (fifteen) days, whether or not it is in receipt of such representation, issue the Termination Notice.

28.3. After termination of this Agreement for Contractor Default, the Employer may complete the Works and/or procure its completion through any other entity. The Employer and such entity may, for this purpose, use any Materials, Plant and equipment, Contractor's documents and other design documents made by or on behalf of the Contractor.

28.4. Payment upon Termination (due to contractor's default)

The Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any commitments or made any advances on account of or with a view to the execution of the works or the performance of the contract and Contractor shall not be entitled to recover or be paid any sum for any work thereto for actually

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performed under the contract unless and until the PBMC shall have certified the performance of such work and the value payable in respect thereof and the Contractor shall only be entitled to be paid the value so certified.

29. **Termination for Employer's convenience**

The Employer shall be entitled to determine and terminate the contract at any time should, in the Employer's opinion, the cessation of work becomes necessary owing to paucity of funds or from any other cause whatever, in which case the value of approved materials at site and of work done to date by the Contractor will be paid for in full as per the contract. Notice in writing from the Employer of such determination and the reasons therefor shall be conclusive evidence thereof.

29.1. Payment upon Termination due to Employers Convenience

If the Contract is terminated at the Employer convenience, the Employer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the Contract. The Contractor shall have no claim to any payment of compensation or otherwise, howsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence determination of contract.

30. Completion Certificate and Completion Plans

Within ten days of the completion of the work the contractor shall give notice of such completion to the PBMC and within fifteen days of the receipt of such notice, the PBMC official shall inspect the work and if there is no defect in the work, shall furnish-the contractor with a Completion Certificate, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued.

But no final completion certificate shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their workpeople on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution, thereof, and not until the work shall have been measured by the PBMC. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the PBMC may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

The final bill shall be submitted by the contractor in the same manner as specified in interim bills within two months of physical completion of the work or within one month of the date of the final Completion Certificate furnished by the PBMCwhichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by PBMC, will, as far as possible be made by PBMC within the period specified herein under, the period being reckoned from the date of receipt of the bill by the PBMC.

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31. Change of Scope

31.1. The Authority may, notwithstanding anything to the contrary contained in this Agreement, require the Contractor to make modifications or alterations to the Works ("Change of Scope") before the issue of the Completion Certificate either by giving an instruction or by requesting the Contractor to submit a proposal for Change of Scope involving additional cost or reduction in cost. Any such Change of Scope shall be made and valued in accordance with the provisions of clause 31.

31.2. Change of Scope shall mean:

31.2.1. Change in specifications of any item of Works;

31.2.2. Omission of any work from the Scope of the Project except due to non-availability of land or clearance; provided that, the Employer/ Authority shall not omit any work under this Clause in order to get it executed by any other entity; or

31.2.3. Any additional work, Plant, Materials or services which are not included in the Scope of the Project,

31.3. If the Contractor determines at any time that a Change of Scope will, if adopted,

(i) accelerate completion, (ii) reduce the cost to the Authority of executing, maintaining or operating the Project, (iii) improve the efficiency or value to the Authority of the completed Project, or (iv) otherwise be of benefit to the Authority/Employer, it shall

prepare proposal with relevant details at its own cost. The Contractor shall submit such proposal, supported with the relevant details including the amount of reduction in the Contract Price, if any, to the Authority to consider such Change of Scope. The Authority shall, within 15 (fifteen) days of receipt of such proposal, either accept such Change of Scope with modifications, if any, and initiate proceedings therefor in accordance with Clause 31 or reject the proposal and inform the Contractor of its decision. For the avoidance of doubt, the Parties agree that the Contractor shall not undertake any Change of Scope without a Change of Scope Order being issued by the Authority, save and except any Works necessary for meeting any Emergency

31.4. Procedure for Change of Scope

31.4.1. In the event of the Authority determining that a Change of Scope is necessary, it may direct the Employer Engineer/ Representative/ PMC to issue to the Contractor a notice specifying in
reasonable detail the works and services contemplated thereunder (the "Change of Scope Notice").

31.4.2. Upon receipt of a Change of Scope Notice, the Contractor shall, with due diligence, provide to the Employer and the PMC/Employer's Engineer such information as is necessary, together with preliminary documentation in support of:

a) the impact, if any, which the Change of Scope is likely to have on the Project Completion Schedule if the works or services are required to be carried out during the Construction Period; and

b) the options for implementing the proposed Change of Scope and the effect, if any, each such option would have on the costs and time thereof including the following details:

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c) break down of the quantities, unit rates and cost for different items of work;

d) proposed design for the Change of Scope; and proposed modifications, if any, to the Project Completion Schedule of the Project. For the avoidance of doubt, the Parties expressly agree that, subject to the provisions of said Clause the Contract Price shall be increased or decreased, as the case may be, on account of Change of Scope.

31.5. The Contractor's proposal for the Change of Scope shall be determined in accordance with the following sequence:

a) State SOR and such rates shall be indexed with reference to the WPI once every year at the commencement of the financial year, with the base being the month and year of the publication of the said schedule of rates.

b) Analysis of Delhi Schedule of Rates issued by CPWD;

c) Analysis issued by MORTH and such rates shall be indexed with reference to the WPI once every year at the commencement of the financial year, with the base being the month and year of the publication of the said schedule of rates.

d) Prevailing market rates as determined in accordance with Good Industry Practice with an additional element of 15% towards Overheads and Profit of the Contractor.

31.5.1. However, final cost shall be determined as reasonable by the Employer as deemed fit. The contractor is bound to carry out the work at above rates/cost.

31.6. Upon reaching an agreement, the Employer shall issue an order (the "Change of Scope Order") requiring the Contractor to proceed with the performance thereof. In the event that the Parties are unable to agree, the Authority may:

i) issue a Change of Scope Order requiring the Contractor to proceed with the performance thereof at the rates and conditions approved by the Employer till the matter is resolved in accordance with clause 25 dispute ; or

ii) proceed in accordance with Clause 31.

31.7. The provisions of this Agreement, insofar as they relate to Works and Tests, shall apply *mutatis mutandis* to the works undertaken by the Contractor under clause 31.

31.8. Payment for Change of Scope

Payment for Change of Scope shall be made in accordance with the payment schedule specified in the Change of Scope Order.

31.9. Restrictions on Change of Scope

31.9.1. No Change of Scope shall be executed unless the Employer has issued the Change of Scope Order save and except any Works necessary for meeting any Emergency.

31.9.2. Unless the Parties mutually agree to the contrary, the total value of all Change of Scope Orders shall not exceed 10% (Ten percent) of the Contract Price.

31.9.3. Notwithstanding anything to the contrary to said clause no change arising from any default of the Contractor in the performance of its obligations under this

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Agreement shall be deemed to be Change of Scope and shall not result in any adjustment of the Contract Price or the Project Completion Schedule.

31.10. Power of the Employer to undertake works

31.10.1. The decision of Employer as to what constitutes proposed change of scope order shall be final and contractor is bound to carry out/execute the work at the rate/cost fixed by Employer.

31.10.2. In the event the Parties are unable to agree to the proposed Change of Scope Orders in accordance with Clause 31.2, the Employer may, after giving notice to the Contractor and considering its reply thereto, award such Works or services to any person on the basis of open competitive bidding for undertaking the additional work; provided that the Contractor shall have the option of matching the first ranked Bid in terms of the selection criteria, subject to payment of 2% (two per cent) of the Bid amount to the Employer, and thereupon securing the award of such Works or services. For the avoidance of doubt, it is agreed that the Contractor shall be entitled to exercise such option only if it has participated in the bidding process and its Bid does not exceed the first ranked Bid by more than 10% (ten percent) thereof. It is also agreed that the Contractor shall provide assistance and cooperation to the person who undertakes the Works or services hereunder but shall not be responsible for rectification of any Defects and/ or Maintenance of Works carried out by other agencies.

31.10.3. The works undertaken in accordance with the clause 31 shall conform to the Specifications and Standards and shall be carried out in a manner that minimizes disruption to the Project. The provisions of this Agreement, insofar as they relate to Works and Tests, shall apply *mutatis mutandis* to the works carried out under this Clause 31.

32. **Other Provisions**

32.1. The Contractor is to set out the whole of the works in conjunction with authorized representative of PBMC and during the progress of the works, to amend on the requisition of the PBMC any errors which may arise therein and provide all the necessary labors, and materials for so doing. The Contractor(s) is/are to provide all plant, labor and materials which may be necessary and requisite for the works. All the materials and workmanship are to be the best of their respective kinds. The Contractor(s) is/are to leave the works in all aspects clean and perfect at the completion thereof.

32.2. The Contractor shall be responsible for any damage caused to existing infrastructure/buildings etc. Upon request from PBMC or by himself shall restore the damaged works at his own cost to the satisfaction of the PBMC.

32.3. The Executive Engineer-in-charge,PBMC / Its Authorized Representative is to have at all times access to the works which are to be entirely under his control. He may require the Contractor(s) to dismiss any person in the Contractor (s) employ upon the works that may be incompetent or misconduct him and the Contractor (s) is/are forthwith to comply with such requirements.

32.4. The Contractor cannot vary or deviate from the approved drawings or specifications or whatsoever unless upon the PBMC to be sufficiently shown by any order in writing by any plan or drawings expressly given and signed by him as extra or variation or by any subsequent written approval signed by him.

32.5. In case any item/work is not executed as per the drawings, designs, estimates and /or specifications (as per the agreement executed) the same shall be deducted and recovered from
the Contractor at prevailing market rates or at par with schedule of rate as applicable at the time of execution.

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32.6. All soft and hard copies of the Drawings & Designs submitted by Contractors shall be property of PBMC.

32.7. Removal of unsuitable or undesirable employees of Contractor: The Contractor shall, on receipt or the requisition form the PBMC at once remove any person employed by him on the work who in the opinion of PBMC is unsuitable or undesirable.

32.8. The Contractor has to strictly adhere to the instructions provided by the PBMC officials/ Authorized Representative/Employers Engineer from time to time. The contractor shall rectify bad workmanship works within the stipulated time provided by the PBMC. The PBMC has the right to dismantle the works which according to him is not complying with the drawings and standards. The Contractor upon receiving such instruction shall either rectify the defect or dismantle the structure at his own cost.

32.9. All work materials brought and left upon the ground by the Contractor(s) or his/their orders for the purpose of forming part of the works are to be considered to be the property of the PBMC and the same are not to be removed or taken away by the Contractors or any other person without the special license and consent in writing of the PBMC. PBMC is not to be in any way answerable for any loss or damage which may happen to or in respect of any such work or materials either by the same being lost or stolen or injured by weather or otherwise.

32.10. The PBMC has full power to require the removal from the premises/Project area of all materials which, in his opinion, are not in accordance with the specification and in case of default, the PBMC is to be at liberty to employ other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The PBMC is also to have full power to substitute other improper materials to be substituted and in case of default, the PBMC may cause the same to be supplied and all costs which may arise due to such removal and substitution are to be borne by the Contractor.

32.11. If in the opinion of the PBMC, any of the works, are executed with improper/Inferior materials or defective workmanship, the Contractor(s) is/are, when required by the PBMC forthwith to re-execute the same and to substitute proper materials and workmanship and in case of default of the Contractor(s) in so doing within a week the PBMC is to have full power to employ other persons/agency to re-execute the work and the cost thereof shall be borne by the Contractor(s).

32.12. From the Commencement of the work to the completion of the same, the site and the works there upon are to be under the Contractor(s) charge. The Contractor is to be held responsible for and to make good all injuries, damages and repairs occasioned or rendered necessary to the same by fire or other causes and they are to hold the PBMC harmless from any claims for injuries to persons or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the Contractor(s) or of any one in his/their employment during the execution of the works.

32.13. In the event of a national emergency, civil commotion, pandemic or any other circumstances as deemed as emergency by the PBMC, the PBMC may take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it, and exercise such control over the Project Works or give such directions to the Contractor as may be deemed necessary; provided that the exercise of such overriding powers by the PBMC shall be of no greater scope and of no longer duration than is reasonably required in the circumstances which caused the exercise of such overriding power by the PBMC. For the avoidance of doubt, it is agreed that the consequences of such action shall be dealt in accordance with the provisions of respective clause of Force Majeure. It is also agreed that the Contractor shall comply with such instructions as the PBMC and shall provide assistance and cooperation to the PBMC, on a best effort basis, for performance of its obligations hereunder.

32.14. During the Construction protection and safeguard against any vandalism shall be contractors' scope and contractor need to cost appropriately. No extra claim shall be admissible.

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Government eProcurement System
Created By: avinash kumar singh
Created Date/Time: 07-Jul-2022 04:05 PM
Tender Title: Marine Esplanade
Tender ID: 2022_PMBC_5883_1

Tender Inviting Authority : EXECUTIVE ENGINEER-III (WORKS), PBMC

Name of Work: Marine Esplanade : Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping

RFP No: 02/05-02/SE/EE-III/WKS/SWM/MC/22-23.

SCHEDULE OF WORK / ITEM(S)

Sl.No	Description of Work / Item(s)	No.of Qty	Units	Estimated Rate	Surendra Infrastructure Pvt. Ltd.(GSTN-NA)		L1 Amount	L1 Vendor
					Rate	Amount		
1.00	Marine Esplanade : Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping (Including all Taxes, Cess, Levies etc)	1.00	lumpsum		163990000.000	163990000.000	163990000.000	Surendra Infrastructure Pvt. Ltd.

Total in Figures	163990000.000

Lowest Amount Quoted BY: Surendra Infrastructure Pvt. Ltd.(163990000.000)

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CORRIGENDUM

Name of Work: Marina road restructuring with uniform carriage way walking track street lighting street furniture service core trenching and landscaping.

e-Tender ID No.: 2022_PMBC_5883_1, Reference No. 02/05-02/SE/EE-III/WKS/SWM/

S. N.	Section	Existing Description	Modified Description
1	Time of Completion of Project In RFP documents	The time of Completion may be read as 12 months from the date of Commencement.	**The time of Completion may be read as 18 months from the date of Commencement**
2	16.1 of ITB Tender fee	All the bidder shall submit tender fee in the form of Online payment/ Demand Draft from any Nationalized/ Scheduled Bank against Tender fee for an amount of Rs.25,000/-(Rupees Twenty Five Thousand only) in favour of "Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101". Original Demand draft against Tender Fee to be submitted in the office of Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101, India on or before the bid due (deadline) date and time of submission of bid	All the bidder shall submit tender fee in the form of Online payment/ Demand Draft from any Nationalized/ Scheduled Bank against Tender fee for an amount of **Rs.15,000/-(Rupees Fifteen Thousand only)** in favour of "Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101". Original Demand draft against Tender Fee to be submitted in the office of Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101, India on or before the bid due (deadline) date and time of submission of bid and upload a scanned copy of the same in e-procurement

EXECUTIVE ENGINEER-III
(WORKS & SWM)

CORRIGENDUM

S. N.	Section	Existing Description	Modified Description
		and upload a scanned copy of the same in e-procurement website. Copy of the DD to be scanned and uploaded in e-procurement website. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the tender fee. Name, beneficiary details are below : PORT BLAIR MUNICIPAL COUNCIL, Account no.- 916010026296152 IFSC:UTIB0000157.	website. Copy of the DD to be scanned and uploaded in e-procurement website. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the tender fee. Name, beneficiary details are below : PORT BLAIR MUNICIPAL COUNCIL, Account no.- 916010026296152 IFSC:UTIB0000157.
3	1.2 of Qualification **Particular Construction Experience**	**Particular Construction Experience** The Bidder shall provide documentary evidence that it has successfully/satisfactorily completed works during the last 7 years ending previous day of last date of submission of tenders: At least **one work of similar nature** costing at least **80% of the estimated cost by sole bidder.** **OR** **Two works of similar nature** costing at least **60% of** the estimated cost of work	

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

CORRIGENDUM

S. N.	Section	Existing Description	Modified Description
		put to tender **by sole bidder/ One by the Sole bidder.** **OR** **Three works** of similar nature costing at least **40% of** the Estimated Cost of work put to tender **by sole bidder/ One by the sole bidder.** 'cost of work' shall mean gross value of the completed work including the cost of materials supplied by the Employer /Client but excluding those supplied free of cost. Works should have been carried out for Central/State Governments, Public Sector Enterprises, and any other Government undertaking only. **Similar work means: Design, Construction of Marine drives. The works shall include components such as sea wall of minimum length of 400 meters , walkways, beautification, landscape, street scape.**	**Particular Construction Experience** The Bidder shall provide documentary evidence that it has successfully/satisfactorily completed works during the last 7 years ending previous day of last date of submission of tenders: At least **one work of similar nature** costing at least **80% of the estimated cost by sole bidder.** **OR** **Two works of similar nature** costing at least **60% of** the estimated cost of work put to tender **by sole bidder/ One by the Sole bidder.** **OR** **Three works** of similar nature costing at least **40% of** the Estimated Cost of work **OR** Design, Construction of Marine drives. The works shall include components such as sea wall of minimum length of 400 meters, walkways, beautification, landscape, street scape. The above work shall meet **by sole bidder**

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

CORRIGENDUM

S. N.	Section	Existing Description	Modified Description
4	**Clause 19 Insurance Cover of Conditions of Contract**	**19.12. Evidence of Insurance Cover** All insurances obtained by the Contractor in accordance with this Clause 19 shall be maintained with insurers on terms consistent with Good Industry Practice. Within 15 (Fifteen) days from the Commencement Date, the Contractor shall furnish to the Employer true copies of the certificate(s) of insurance, copies of insurance policies and premium payment receipts in respect of such insurance, and no such insurance shall be canceled, modified, or allowed to expire or lapse until the expiration of at least 45 (forty-five) days after notice of such proposed cancellation, modification or non-renewal has	'cost of work' shall mean gross value of the completed work including the cost of materials supplied by the Employer /Client but excluding those supplied free of cost. Works should have been carried out for Central/State Governments, Public Sector Enterprises, and any other Government undertaking only.

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

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S. N.	Section	Existing Description	Modified Description
		been delivered by the Contractor to the Employer. The Contractor shall act in accordance with the directions of the Employer. Provided that the Contractor shall produce to the Employer the insurance policies in force and the receipts for payment of the current premium. The Contractor shall ensure the adequacy of the insurances at all times in accordance with the provisions of this Agreement.	**19.12. Evidence of Insurance Cover** The Contactor Shall Submit undertaking in the form of Non-Judicial Bond for all the insurances cover in accordance with Clause 19, within 15days of Commencement of Work

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

CORRIGENDUM

S. N.	Section	Existing Description	Modified Description
5	Scope of work Page no. 5/18 of Scope of Work	**Pre-Construction Phase**	The works under Contract comprises the external development works for excavation and filling works, hardscape including various types of paving and cladding, softscape including garden and lawn planting, site furniture, lighting, play areas & equipment, construction of a few building blocks, guard / ticket rooms and other activities, yoga deck, drinking water facility and toilet block etc. Other works may include installation or restoration / shifting of existing water, electrical power and other utilities which are defined or implied in the plans and specifications or are required to be carried out in order to execute the specified works. **The above lines may be treated as Deleted**
6	Clause 16.2 of ITB Tender Fee & Bid Security	All bids must be supported by a Bid Security. Bid Security in the form of BG/FDR/Demand Draft for an amount as specified in the NIT from any Nationalized/Scheduled Bank having a branch in Port Blair shall be submitted along with the bid. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the Bid Security. Name, beneficiary details are below : PORT BLAIR MUNICIPAL COUNCIL, Account no.-916010026296152 IFSC:UTIB0000157.	All bids must be supported by a Bid Security. Bid Security in the form of BG/FDR/Demand Draft for an amount as specified in the NIT from any Nationalized/Scheduled Bank having a branch in Port Blair shall be submitted along with the bid. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the Bid Security. Name, beneficiary details are below: PORT BLAIR MUNICIPAL COUNCIL, Account no.-916010026296152 IFSC: UTIB0000157. In addition to the above as per Rule 170 of GFR--- "Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy

Surendra Infrastructure Pvt. Ltd. Port Blair

EXECUTIVE ENGINEER (WORKS & SWM) Municipal Council

CORRIGENDUM

S. N.	Section	Existing Description	Modified Description
			issued by Department of Micro, Small and Medium Enterprises (MSME)" are exempt from submission of EMD (Bid security). Bidders claiming exemption of EMD under this rule(170 of GFR) are however required to submit a signed Bid securing declaration accepting that if they withdraw or modify their Bids during the period of validity, or if they are awarded the contract and they fail to sign the contract, or to submit a performance security before the deadline defined in the request for bids document, they will be suspended for the period of 12 months from being eligible to submit Bids for tenders with PBMC.
	Clause 16.1 of ITB Tender Fee & Bid Security	All the bidder shall submit tender fee in the form of Online payment/ Demand Draft from any Nationalized/ Scheduled Bank against Tender fee for an amount of Rs.15,000/-(Rupees Fifteen Thousand only) in favour of "Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101". Original Demand draft against Tender Fee to be submitted in the office of Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101, India on or before the bid due (deadline) date and time of submission of bid and upload a scanned copy of the same in e-procurement website. Copy of the DD to be scanned and uploaded in e-procurement	All the bidder shall submit tender fee in the form of Online payment/ Demand Draft from any Nationalized/ Scheduled Bank against Tender fee for an amount of Rs.15,000/-(Rupees Fifteen Thousand only) in favour of "Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101". Original Demand draft against Tender Fee to be submitted in the office of Secretary, PORT BLAIR MUNICIPAL COUNCIL, Indira Bhavan, Mohanpura, Port Blair-744101, India on or before the bid due (deadline) date and time of submission of bid and upload a scanned copy of the same in e-procurement website. Copy of the DD to be scanned and uploaded in e-procurement website. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the tender fee. Name,

Andhra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

CORRIGENDUM

S. N.	Section	Existing Description	Modified Description
		website. Alternatively, bidder may also use NEFT/RTGS/Net banking facility to submit the tender fee. Name, beneficiary details are below : PORT BLAIR MUNICIPAL COUNCIL, Account no.- 916010026296152 IFSC:UTIB0000157.	beneficiary details are below : PORT BLAIR MUNICIPAL COUNCIL, Account no.- 916010026296152 IFSC:UTIB0000157. In addition to the above -- As per MSME policy circular dt 23rd March 2012, MSEs registered under UAM scheme will be provided tender cost free of cost. Bidders are required to submit valid UAM certificate and their claim for free tender cost will be considered for the service/category for which they are registered as per UAM certificate.
7.	1.4 Financial Capability	1.4.1 Availability of Cash Credit Facility 1.4.1 Availability of Cash Credit Facility The bidder shall demonstrate by submitting along with its bid Evidence of access to line (s) of credit and availability of other financial resources facilities in terms of cash credit of minimum value of INR 6.25 cr certified by the approved Bankers (not more than 12 months old).	1.4.1 Availability of Cash Credit Facility The bidder shall demonstrate by submitting along with its bid Evidence of access to line (s) of credit and availability of other financial resources facilities in terms of cash credit of minimum value of **INR 1.5 cr** certified by the approved Bankers (not more than 12 months old). **OR** 1.4.2 Solvency Certificate The bidder shall demonstrate by submitting along with its bid a Solvency Certificate minimum value of **INR 1.5 cr** certified by the approved Bankers (not more than 12 months old). **OR**

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER
(WORKS & SWM)
Municipal Council

CORRIGENDUM

S. N.	Section	Existing Description	Modified Description
		1.4.2 Solvency Certificate The bidder shall demonstrate by submitting along with its bid a Solvency Certificate minimum value of INR 3.75 cr certified by the approved Bankers (not more than 12 months old).	Inclusive of both shall have at least INR 1.5 **cr** .

Subhadra Infrastructure Pvt. Ltd. PORT BLAIR

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Suryatara Infrastructure Pvt. Ltd.
PORT BLAIR

OFFICE OF THE MUNICIPAL COUNCIL
PORT BLAIR

No.02/SE/PBMC/PBSPL/2021-2022/ 155 Dated: 23 /02/2023

To,

M/s. Surendra Infrastructure (P) Ltd.,
Govt. Contractor
V.I.P Road, Junglighat,
Port Blair

Name of Work: - **Marine Esplanade: Marine Road restructuring with uniform carriage way, walking track, street lighting, street furniture, Service core trenching and landscaping.**

S.W: - **Strengthening & Construction of Sea Wall.**

Your Tender for the work mentioned above has been accepted on behalf of the Secretary, Municipal Council at your Tendered Amount of ₹.16,39,90,000.00 *(***Rupees Sixteen Crore Thirty Nine Lakhs Ninety Thousand Only***)*, which is 9.38% above the Estimated cost of ₹.14,99,24,878.00 **(Rupees Fourteen Crore Ninety Nine Lakhs Twenty Four Thousand Eight Hundred Seventy Eight Only).**

You are requested to submit the PERFORMANCE SECURITY/ GUARANTEE of ₹. 49, 19,700.00 **(Rupees Forty Nine Lakhs Nineteen Thousand Seven Hundred Only***)* within **15 days** from issue of this letter. This Performance Guarantee shall be in the prescribed form as provided in clause 1 of the General Conditions of Contract for CPWD works, and shall be valid up to **31st May 2024.**

Contractor should submit EPFO certificate and GST registration copy along with performance guarantee.

On receipt of the prescribed performance guarantee, necessary letter to commence the work shall be issued, and the said of work handed over to you thereafter.

Please note that the time allowed for carrying out the work as entered in the tender will be reckoned from the date of issue of award letter.

Executive Engineer-III (Works)
Municipal Council

Copy to:

1. The Accounts Officer, Municipal Council.
2. The Assistant Engineer-III (Road Works/SWM), Municipal Council.
3. The Junior Engineer-III (Road Works).Municipal Council.
4. The Accountant-II, Municipal Council.

Executive Engineer-III (Works)
Municipal Council

EXECUTIVE ENGINEER
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

Surendra Infrastructure (P) Ltd.

19/1, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, ✆ : 233517, FAX: 03192 – 231781
Email – sursalepb@yahoo.com

262/PB/840 28th Feb'2023

Executive Engineer-III (Works)
Municipal Council
Port Blair
Email: swmpbmc@gmail.com
avipbmc@gmail.com

SUB: BANK GUARANTEE IN LIEU OF PERFORMANCE GUARANTEE

REF: AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155 DTD. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING. S.W: STRENGHENING & CONSTRUCTIION OF SEA WALL.

Dear Sir,

With reference to your letter No.02/SE/PBMC/PBSPL/2020-21/155 dtd. 23rd Fe'2023, please be informed that our Yes Bank Ltd, Ground Floor, 16, N.S. Road, Kolkata-700001 Branch has submitted Directly BG No.786BG01230590001 dated 28th Feb'2022 for Rs.49,19,700/- (Rupees Forty Nine Lakhs Nineteen Thousand Seven Hundred only) valid upto 31st May'2024 (Xerox copy enclosed).

Please acknowledge receipt.

Thanking you

Sincerely yours,
SURENDRA INFRASTRUCTURE PVT. LTD
Surendra Infrastruture Pvt. Ltd

Director / Authorised Signatory

Encl: Xerox copy Bank Guarantee (07 sheets)

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

9, EZRA STREET, CALCUTTA 700001, INDIA. ✆: 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Infrastructure Pvt. Ltd.
PORT BLAIR

YES BANK

28-FEB-23

EXECUTIVE ENGINEER-III (WORKS),
MUNICIPAL COUNCIL, PORT BLAIR - 744103

Our reference	: 786BG01230590001
Issue date	: 28-FEB-23
Applicant	: SURENDRA INFRASTRUCTURE PRIVATE LIMITED
Guarantee amt.	: INR 4,919,700.00
Amt. in words	: INDIAN RUPEES FOUR MILLION NINE HUNDRED NINETEEN THOUSAND SEVEN HUNDRED ONLY
Stated Expiry date	: 31-MAY-24
Stated Claim Expiry date	: 31-MAY-24

Dear Sir/ Madam,

Please find enclosed the captioned guarantee duly issued by YES Bank ("the Bank").

The beneficiary of this guarantee is entitled to confirm the authenticity of this guarantee directly by contacting the issuing branch or any of below controlling office:

YES Bank Limited
Yes Bank House,
Off western express highway,
Santacruz east,
Mumbai 400055.

YES Bank Limited,
NOC Gurgaon BG desk,
DLF Cyber City, 3rd floor,
Building No. 8 A,
Gurgaon 122002.

YES Bank Limited
NOC Chennai BG desk,
One Indiabulls Park,
4th Floor, Tower B,
Plot No. 14, 3rd Main Road,
Ambattur Estate,
Chennai - 600 058.

This guarantee is to be returned immediately post its expiry. Please note that any communication/demand under this guarantee should be specifically made by the official who is authorised under the guarantee and should be made in writing to the issuing branch unless otherwise specified in the enclosed guarantee.

It is confirmed that

1) Mr. PRADIP KUMAR SINGH

2) Mr. ANIRBAN CHATTERJEE

who have signed the above guarantee, are authorised to sign the same on behalf of the Bank.

For YES Bank Limited
Moitrayee Chatterjee
(Authorised Signatories) MCE6176003
MOITRAYEE CHATTERJEE
DATE : 28-FEB-23
PLACE : YES BANK LTD

YES BANK LTD. * 763, Kolkata, Dalhousie *

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

BANK GUARANTEE NO: 786BG01230590001 ISSUANCE DATE: 28-FEB-2023

PERFORMANCE SECURITY BANK GUARANTEE

Bank Guarantee No. : 786BG01230590001 Issued on : 28.02.2023

Place of Execution : Port Blair Valid upto: 31st May 2024

Stamp Paper for : Rs.100/- Name of State: A&N Islands.

TO,
EXECUTIVE ENGINEER-III (WORKS),
MUNICIPAL COUNCIL, PORT BLAIR - 744103

1. In consideration of the President of India acting through Executive Engineer-III (Works), Municipal Council, Port Blair (hereinafter called "Government") having offered to accept the terms and conditions of the proposed agreement between Executive Engineer-III (Works), Municipal Council, Port Blair and M/s. Surendra Infrastructure Pvt. Ltd., 19/1, VIP Road, Junglighat, Port Blair-744103 (hereinafter called "the said contractor(s)") for the work of "Marine Esplanade: Marine Road restructuring with uniform carriage way, walking track, street lighting, street furniture, Service core trenching and landscaping. SW: Strengthening & Construction of Sea Wall" (hereinafter called "the said Agreement") having agreed to production of a irrevocable Bank Guarantee for Rs.49,19,700/- (Rupees Forty Nine Lakhs Nineteen Thousand Seven Hundred Only) as a security/ guarantee from the contractor(s) for compliance of his obligation in accordance with the terms and conditions in the said agreement. We Yes Bank Limited, a company incorporated and registered under Companies Act 1956 and a banking company within the meaning of section 5 (c) of the Banking Regulation Act 1949 and having its registered office at YES Bank House,Off Western Express Highway,Santacruz East, Mumbai – 400055, India & a branch office inter alia at Ground Floor, 16 N.S Road, Kolkata-700001 (hereinafter referred to as "the Bank") hereby undertake to pay to the Government an amount not exceeding Rs.49,19,700/- (Rupees Forty Nine Lakhs Nineteen Thousand Seven Hundred Only) on demand by Government.

2. We, Yes Bank Limited do hereby undertake to pay the amounts due and payable under this guarantee without any the demure, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.49,19,700/- (Rupees Forty Nine Lakhs Nineteen Thousand Seven Hundred Only).

3. We the said bank further undertakes to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto. Our liability under this present being absolute and unequivocal. This payments so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

For YES BANK LIMITED

Authorised Signatories

PRADIP KUMAR SINGH
AVP
ID-3429004

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

For YES BANK LIMITED

Authorised Signatories

ANIRBAN CHATTERJEE
BRANCH SERVICE LEADER
CUST ID-7432931
EMP ID-ACE4993005

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

BANK GUARANTEE NO: 786BG01230590001 ISSUANCE DATE: 28-FEB-2023

4. We, **Yes Bank Limited** further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till the Engineer in charge on behalf of the Government certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee or till 31st May 2024 (expiry date), whichever is earlier.

5. We, **Yes Bank Limited** further agree with the Government that, the Government shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time from time to time any of the powers exercisable by the Government against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relived from our liability by reason of any such variation, or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of the Government or any indulgence by the Government to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to guarantee would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We, Yes Bank Limited lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.

8. This guarantee shall be valid upto 31st May'2024 Notwithstanding anything mentioned above our liability against this guarantee is restricted to Rs.49,19,700/- (Rupees Forty Nine Lakhs Nineteen Thousand Seven Hundred Only) and unless a claim in writing is lodged with us within the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Notwithstanding anything contained herein.

1. Our liability under this guarantee shall not exceed Rs.49,19,700/- (Rupees Forty Nine Lakhs Nineteen Thousand Seven Hundred Only).

2. This Bank Guarantee shall be valid upto 31st May'2024

3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if a written claim or demand, served by you in accordance with the terms of this bank guarantee, is received by us on or before 5 P.M on or before 31st May 2024 at **Yes Bank Limited Ground Floor, 16 N.S Road, Kolkata-700001.** Thereafter, all your rights under this bank guarantee shall be forfeited and we shall be relieved from all our liabilities hereunder irrespective of whether the original bank guarantee has been returned to us or not.

For YES BANK LIMITED

Authorised Signatories

PRADIP KUMAR SINGH
AVP
D-3429004

EXECUTIVE ENGINEER
(WORKS & SWM)
Municipal Council

Sujana Infrastructure Pvt. Ltd. PORT BLAIR

YES BANK LTD. Kolkata, Dalhousie-II

For YES BANK LIMITED

Authorised Signatories

ANIRBAN CHATTERJEE
BRANCH SERVICE LEADER
CUST ID-7432931
EMP ID-ACE4993005

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

BANK GUARANTEE NO: 786BG01230590001 ISSUANCE DATE: 28-FEB-2023

For Yes Bank Limited

Authorized Signatory
Place:
Date:
Name: PRADIP KUMAR SINGH
Designation: AVP
ID-3429004

For Yes Bank Limited

Authorized Signatory
Place:
Date:
Name: ANIRBAN CHATTERJEE
Designation: BRANCH SERVICE LEADER
CUST ID-7432931
EMP ID-ACE4993005

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

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Surguja Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council



पश्चिमबंग पश्चिम बंगाल WEST BENGAL AM 296218

This Non-Judicial Stamp Paper forms an integral part of this Bank Guarantee Number 786BG01230590001 dated 28-FEB-23 issued by us in favor of the EXECUTIVE ENGINEER-III (WORKS), ~~PRIVATE LIMITED~~ on behalf of SURENDRA INFRASTRUCTURE ~~PRIVATE~~ LIMITED.

For YES Bank Limited

For YES Bank Limited

Authorised Signatories

PRADIP KUMAR SINGH
AVP
ID-3429004

Authorised Signatories

ANIRBAN CHATTERJEE
BRANCH SERVICE LEADER
CUST ID-7432931
EMP ID-ACE4993005

Date: 28-FEB-23
Place: YES BANK LTD

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

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Surana Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council



पश्चिमबङ्गा पश्चिम बंगाल WEST BENGAL

AM 296219

This Non-Judicial Stamp Paper forms an integral part of this Bank Guarantee Number 786BG01230590001 dated 28-FEB-23 issued by us in favor of the EXECUTIVE ENGINEER-III (WORKS), ~~PRIVATE LIMITED~~ on behalf of SURENDRA INFRASTRUCTURE ~~PRIVATE~~ LIMITED.

For YES Bank Limited

Authorised Signatories

PRADIP KUMAR SINGH
AVP
D-3429004

For YES Bank Limited

Authorised Signatories

ANIRBAN CHATTERJEE
BRANCH SERVICE LEADER
CUST ID-7432931
EMP ID-ACE4993005

Date: 28-FEB-23
Place: YES BANK LTD

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd.
PORT BLAIR

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council



पश्चिमबंग पश्चिम बंगाल WEST BENGAL AM 296220

This Non-Judicial Stamp Paper forms an integral part of this Bank Guarantee Number 786BG01230590001 dated 28-FEB-23 issued by us in favor of the EXECUTIVE ENGINEER-III (WORKS), ~~PRIVATE LIMITED~~ on behalf of SURENDRA INFRASTRUCTURE PRIVATE LIMITED.

YES BANK LTD. 786, Kolkata, Dalhousie

For YES Bank Limited

Authorised Signatories

PRADIP KUMAR SINGH
AVP
D-3429004

YES BANK LTD. 786, Kolkata, Dalhousie-II

For YES Bank Limited

Authorised Signatories

ANIRBAN CHATTERJEE
BRANCH SERVICE LEADER
CUST ID-7432931
EMP ID-ACE4993005

Date: 28-FEB-23
Place: YES BANK LTD

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

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EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

29,K.K. ... Apollo Hospital

EXECUTIVE ENGINEER-II
(WORKS & SWM)
Municipal Council

केनरा बैंक Canara Bank

डी.पी. कूट
D.P. Code :

क्रमांक
Sl. No. KK 0831294

प्रधान कार्यालय, 112, जे सी रोड, बेंगलूर
HEAD OFFICE : 112. J.C. ROAD, BANGALORE

जमा रसीद
Deposit Receipt

KAMADHENU DEPOSIT GENERAL

Received From
1. Messrs.SECRETARY PB MUNICIPAL COUNCIL
2.
3.
AC SURENDRA INFRASTRUCTURE PVT LTD
PORT BLAIR
PORT BLAIR
PORT BLAIR

the sum of (in words) RUPEES TWENTY FOUR LAKH NINETY NINE THOUSAND TWO HUNDRED FIFTY ONLY

Condition of Repayment:

Branch	: PORT BLAIR-1185
Date of Deposit	: 27/05/2022
Customer ID	: 310355555
Account No	: 140048157781 / 1
DOB (if minor)	:
Nomination Regd	: NO
Nominee ID	:
Nominee	:
Annualised interest Yield	4.53%

Value Date	Deposit Amount	Deposit Period	Rate of Interest (%) p.a	Total Interest	Maturity Date	Maturity Amount
27/05/2022	INR24,99,250.00	6 Months 0 Days	4.50%	INR56,550.00	27/11/2022	INR25,55,800.00

The total interest payable and maturity value amount/part withdrawal mentioned herein are subject to TDS, as applicable from time to time. The FCNR deposits will be automatically renewed only once.

Please see on reverse for important information.

Prepared By

Supervisor

For Canara Bank

Authorised Signatory

-263-

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EXECUTIVE ENGINEER
(WORKS & SWM)
Municipal Council

OFFICE OF THE MUNICIPAL COUNCIL,
PORT BLAIR.

No. 02/SE/PBMC/PBSPL/2021-22/1760 Dated: 17 /03/2023

To,

M/s. Surendra Infrastructure (P) Ltd.,
Govt. Contractor
VIP Road, Junglighat,
Port Blair.

Sub: - **Marine Esplanade: Marine Road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping.**
S.W: - Strengthening & Construction of Sea Wall.

Ref: 1. Performance Security / Guarantee amounting to **₹.49,19,700.00/-** Submitted by you vide letter No. AA/PBMC/22-23/117, dated. 06.02.2023, for the above work.
2. This Office letter of intent/acceptance of your tender vide No. **02/SE/PBMC/PBSPL/2021-22/155, dated 23.02.2023**.

Dear Sir (s),

1. You are requested to contact the Assistant Engineer-III (Road Works/SWM), Municipal Council, Port Blair for taking possession of site and starting the work at once.
2. Considering the fact that the tender is on EPC model and hence the date of commencement will be counted after 30 days from the date of issue of letter or the submission of approved design from the Engineering Colleges/ IIT's whichever is earlier.
3. In continuation to the letters referred to above, kindly find enclosed a copy of agreement you are also requested to attend this office formal agreement within fifteen days from the date of issue of this letter.

Yours Faithfully,

Executive Engineer-III (Works),
Municipal Council,

Copy to:
1. The Chairperson, Municipal Council.
2. The Chairperson, WTP & I Sub-Committee, Municipal Council.
3. The Chairperson, FTA. Sub-Committee, Municipal Council.
4. The Secretary, Municipal Council for information.
5. The Superintending Engineer, Municipal Council for information.
6. The Accounts Officer, Municipal Council.
7. The Accountant, Municipal Council.
8. The Assistant Engineer-III (Road Works/ SWM), Municipal Council
9. The Junior Engineer, In-charge through AE-III (Road Works), Municipal council

Executive Engineer-III (Works),
Municipal Council

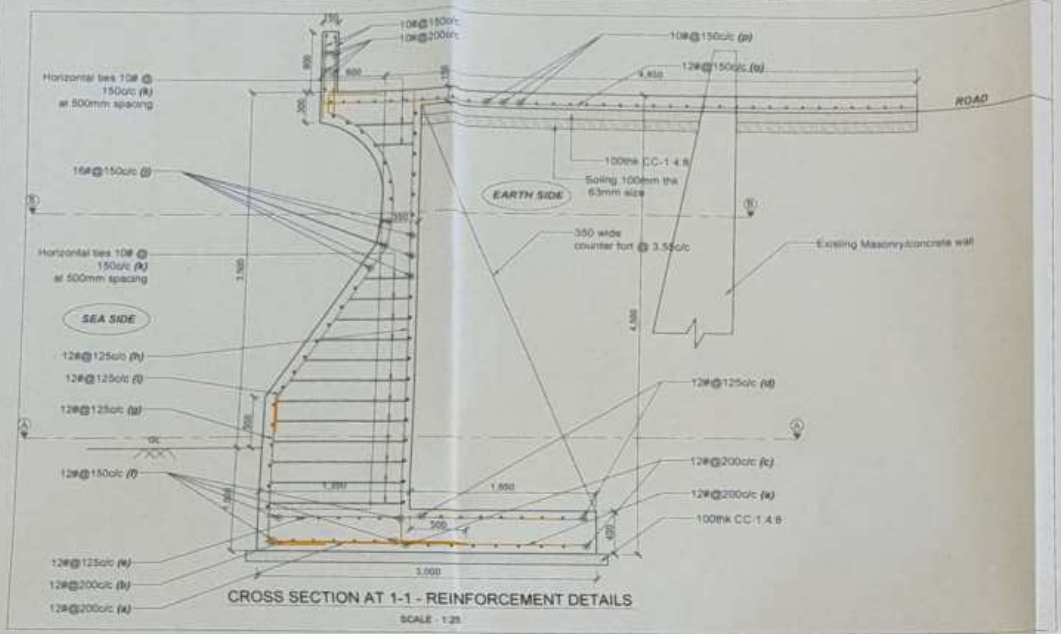
EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR

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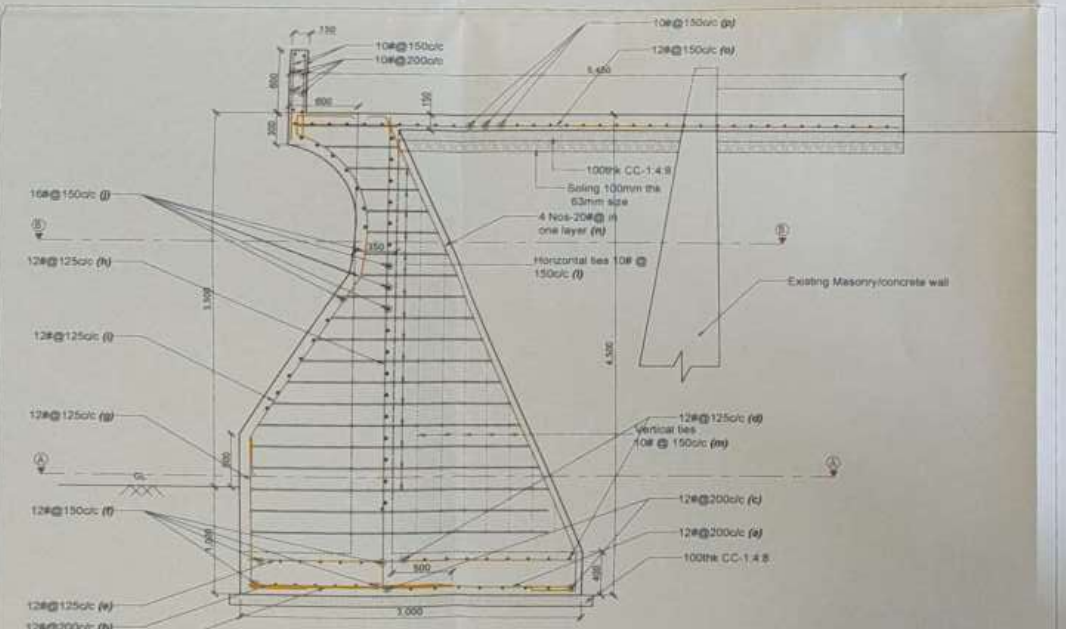
EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Surendra Infrastructure Pvt. Ltd. PORT BLAIR



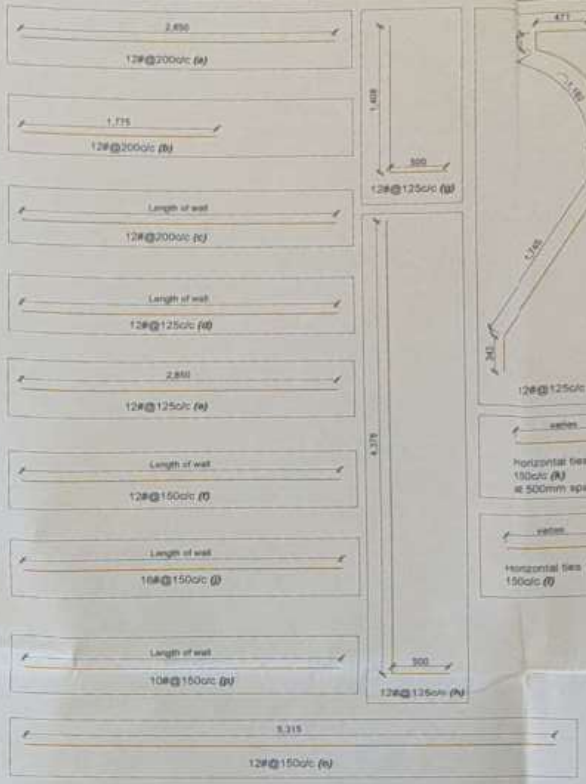
CROSS SECTION AT 1-1 - REINFORCEMENT DETAILS

SCALE - 1:25



CROSS SECTION AT 2-2 - REINFORCEMENT DETAILS

SCALE - 1:25



Checked & Verified

Dr S P Singh
Professor of Civil Engineering
Dr B R Ambedkar National Institute of Technology
PO-NIEC

EXECUTIVE ENGINEER (I)
(WORKS & SWM)
Municipal Council

SL NO.	DATE	DESCRIPTION
		REVISION

DRAWING NO. - GL/22-23/112-2	SHEET NO. 2/3
REVISION NO. 0	
ISSUE DATE - MAR'2022	SCALE - 1:25.

CLIENT:

SURENDRA INFRASTRUCTURE PVT. LTD.
(FOR PBMC, PORT BLAIR)

PROJECT:

PROPOSED CONSTRUCTION OF SEA WALL IN FRONT OF JNRM COLLEGE TO FLAG POINT.

SW: PROVIDING AND SUPPLYING DESIGN AND DRAWING.

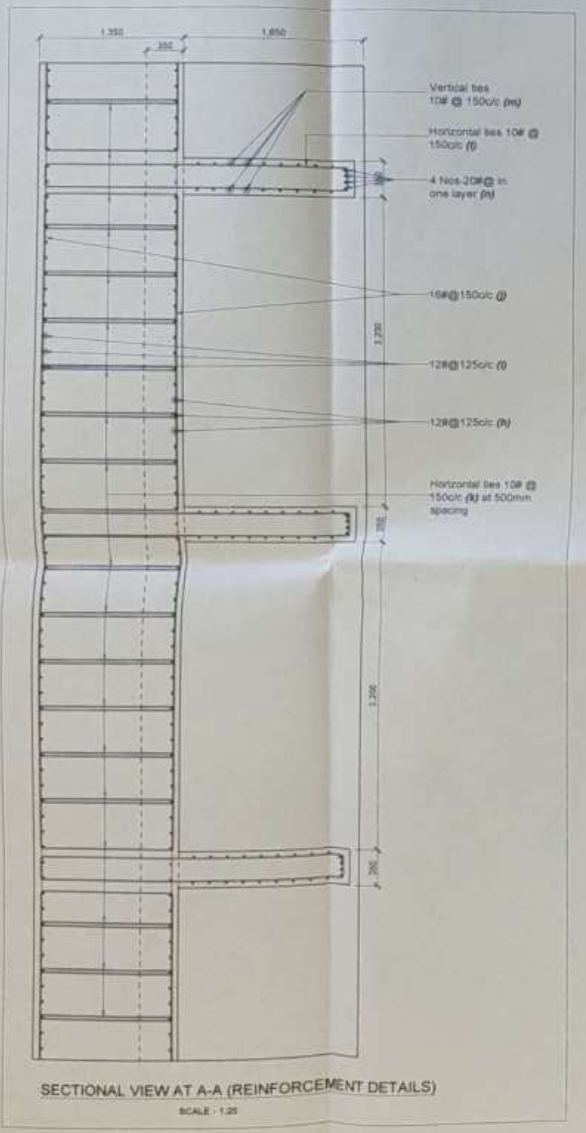
DRAWING TITLE:

Structural Details - Cross section at 1-1 & 2-2 (Reinforcement details) and bar bending schedule.

DEALT BY:

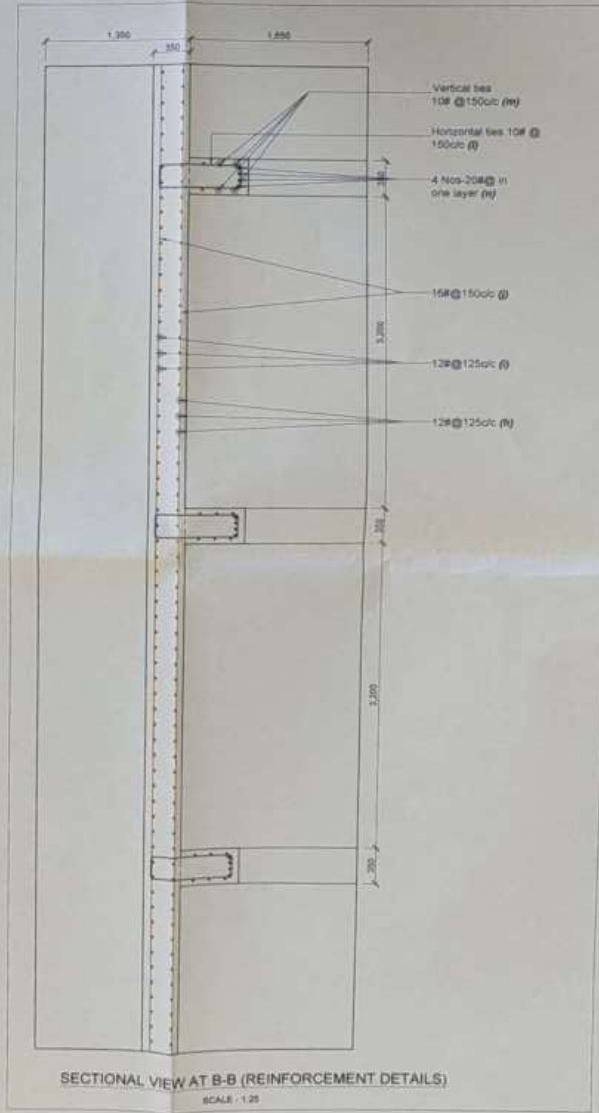
GLOBE CONSULTANCIES
(Civil Engineering Consultants)
2nd Floor, Common Service Centre Building
ATR Main Road, Bathukunthi,
Guiachermia, Port Blair
Tele/Fax: 03192 - 251171, Mobile:9434280874
Email:globethoppo@gmail.com

Consulting Civil Engineer
Chartered Engineer



SECTIONAL VIEW AT A-A (REINFORCEMENT DETAILS)

SCALE - 1:25



SECTIONAL VIEW AT B-B (REINFORCEMENT DETAILS)

SCALE - 1:25

Approved

EXECUTIVE ENGINEER-III
(WORKS & SWM)
Municipal Council

Checked & Verified

Dr S P Singh
Professor of Civil Engineering
Dr B R Ambedkar National Institute of Technology
PO-NIT
Jalandhar-144011 (Pb) India

SL NO.	DATE	DESCRIPTION
REVISION		

DRAWING NO. - GL/22-23/112-3	SHEET NO.
REVISION NO. 0	3/3
ISSUE DATE - MAR'2022	SCALE - 1:25.

CLIENT:

SURENDRA INFRASTRUCTURE PVT. LTD.
(FOR PBMC, PORT BLAIR)

PROJECT:

PROPOSED CONSTRUCTION OF SEA WALL IN FRONT OF JNRM COLLEGE TO FLAG POINT.

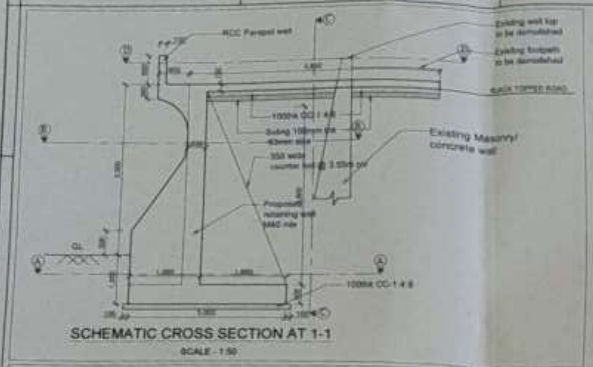
SW: PROVIDING AND SUPPLYING DESIGN AND DRAWING.

DRAWING TITLE:

Structural Details - Sectional View at A-A (Reinforcement details), Sectional view at B-B (Reinforcement details).

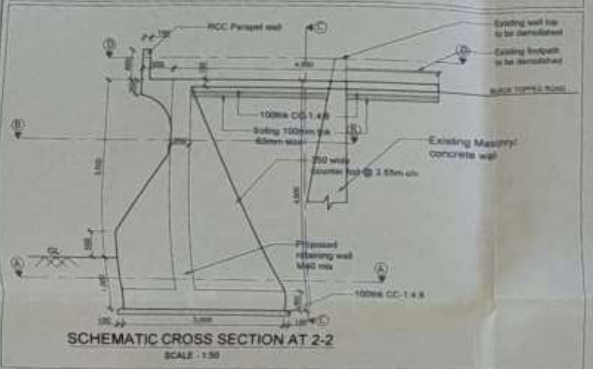
DEALT BY:

GLOBE CONSULTANCIES



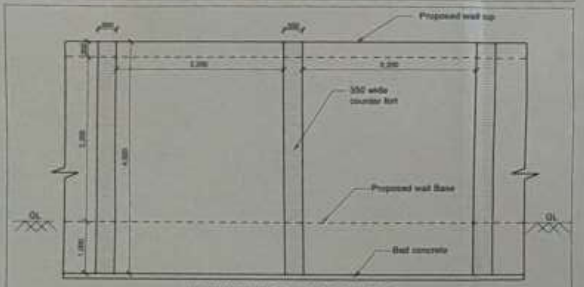
SCHEMATIC CROSS SECTION AT 1-1

SCALE - 1:50



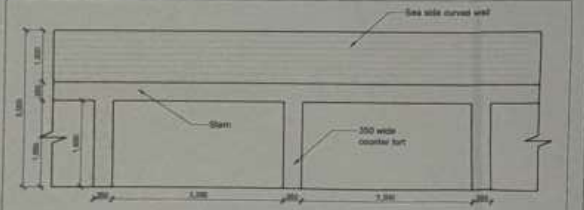
SCHEMATIC CROSS SECTION AT 2-2

SCALE - 1:50



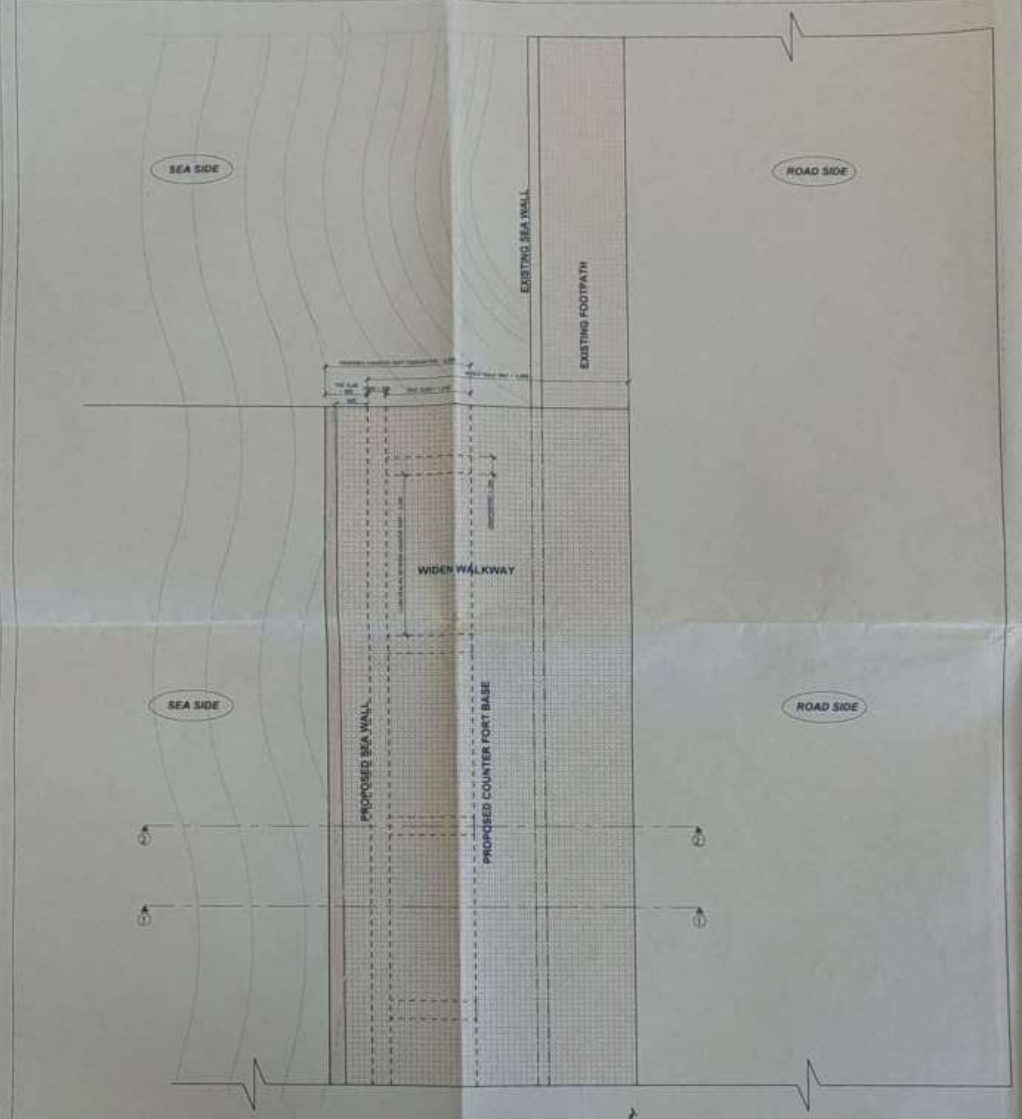
SCHEMATIC VIEW FROM C-C

SCALE - 1:50



SCHEMATIC VIEW FROM D-D / PLAN

SCALE - 1:50



SCHEMATIC TOP PLAN

SCALE - 1:50

NOTES:

1. Mix for all Rcc work shall be M40.Cement used shall conform to IS 8112 or IS 12269.
2. HYSD Bars of Fe500 (EQR) conforming to IS 1786 or TMT Bars shall be used as Reinforcement. The same is denoted as #.
3. The coarse Aggregates used shall be of 20mm nominal size.
4. A lean concrete of mix CC 1:4 :8 shall be provided below Base slab.
5. The SBC of the soil has been adopted as 120KN/Sqm at 1m depth for calculation.
6. The effective cover for reinforcement shall be:
   a) Base Slab - 75mm
   b) Wall Earth face - 60mm
   c) Wall Outer face - 75mm
   d) Counter fort - 60mm
7. The Lap length/Development length for Bars shall be - 57 Dia.
8. All RCC works shall be adequately vibrated to ensure proper compaction.
9. Figured dimensions only shall be followed.
10. The following assumptions have been assumed:
    a) Unit weight of soil - 18KN/Cum
    b) Angle of repose - 30deg
    c) Slope of back fil - Level
    d) Coefficient of friction - 0.5
11. Suitable admixture for quick setting of cement as per manufacture specification shall be used.

Checked & Verified

EXECUTIVE ENGINEER-III (WORKS & SWM) Municipal Council

Dr S P Singh
Professor of Civil Engineering
Dr B R Ambedkar National Institute of Technology
PO-NIT
Jalandhar-144011 (Punjab) India

Sl. NO.	DATE	DESCRIPTION
REVISION		

DRAWING NO. - GL/22-23/112-1	SHEET NO.
REVISION NO. 0	1/3
ISSUE DATE - MAR'2022	SCALE - 1:50.

CLIENT:

SURENDRA INFRASTRUCTURE PVT. LTD.
(FOR PBMC, PORT BLAIR)

PROJECT:

PROPOSED CONSTRUCTION OF SEA WALL IN FRONT OF JNRM COLLEGE TO FLAG POINT.

SW: PROVIDING AND SUPPLYING DESIGN AND DRAWING.

DRAWING TITLE:

Structural Details - Schematic top plan, Schematic Cross section at 1-1 & 2-2, Schematic View at C-C & View at D-D.

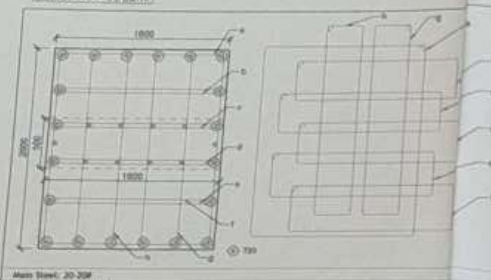
DEALT BY:

GLOBE CONSULTANCIES
Civil Engineering Consultants
2nd Floor, Islanders Service Centre Building
ATR Main Road, Bathalabatti,
Ganeshamitu,Post Box
Tele/Fax: 03192 - 232270, Mobile:9434280874
Emailglobeconsult@gmail.com

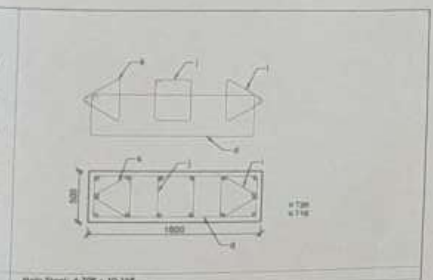
VIJAYA RAMACHANDRAN B.E., M.I.E.
Consulting Civil Engineer
Chartered Engineer
Approved Valuer, F - 17918
Registered Engineer (PBMC)- 15/5

CONSULTANT

DETAILS OF COLUMN

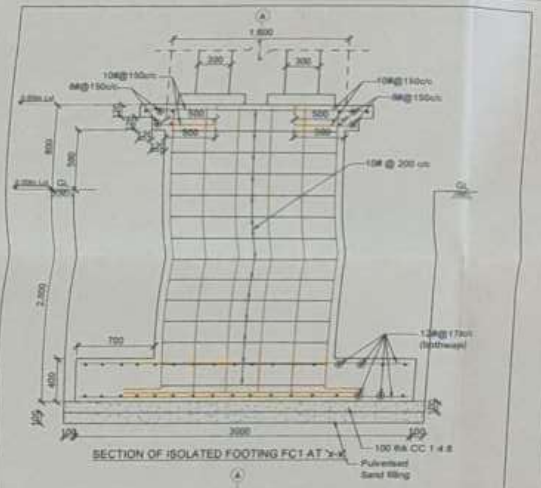


Main Steel: 20-20#
Column Size:1600x2000
Fleeting to 0.8m lvl
TIES:10# @ 200 C/C -(IN MID HEIGHT)
TIES:10# @ 100 C/C -(IN BEAM COL JUNCTION AS PER DUCTILE DETAILING)

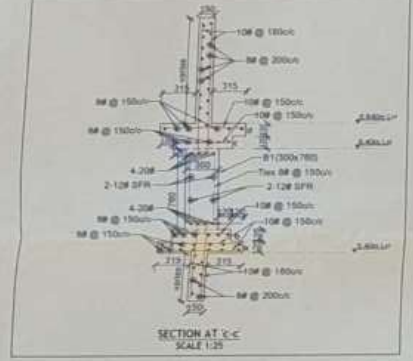


Main Steel: 4-20# + 10-16#
Column Size:1600x500
0.80m lvl to 6.40m lvl
TIES:10# @ 200 C/C -(IN MID HEIGHT)
TIES:10# @ 100 C/C -(IN BEAM COL JUNCTION AS PER DUCTILE DETAILING)

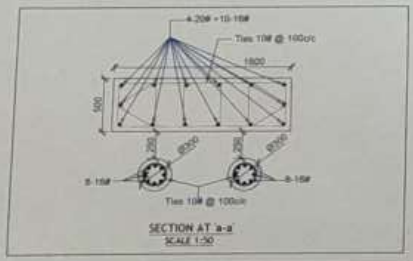
DET OF COL C1
SCALE 1:25



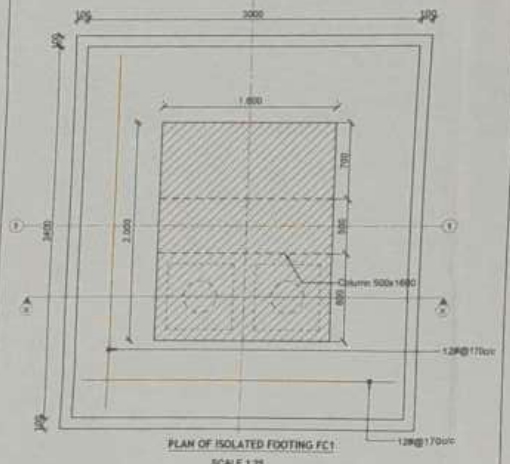
SECTION OF ISOLATED FOOTING FC1 AT 'x-x'



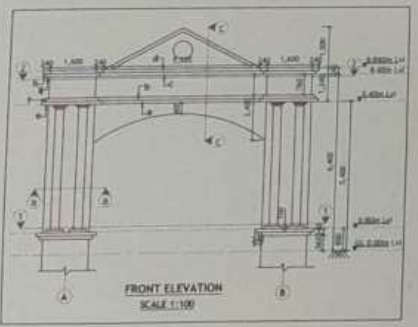
SECTION AT 'c-c'
SCALE 1:25



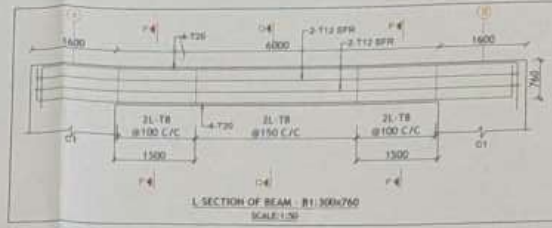
SECTION AT 'a-a'
SCALE 1:50



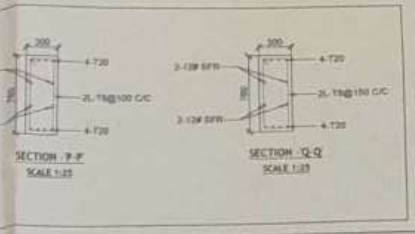
PLAN OF ISOLATED FOOTING FC1
SCALE 1:25



FRONT ELEVATION
SCALE 1:100

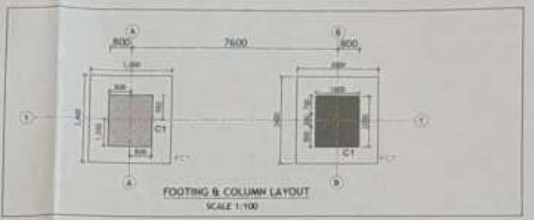


L SECTION OF BEAM - B1:300x760
SCALE 1:50

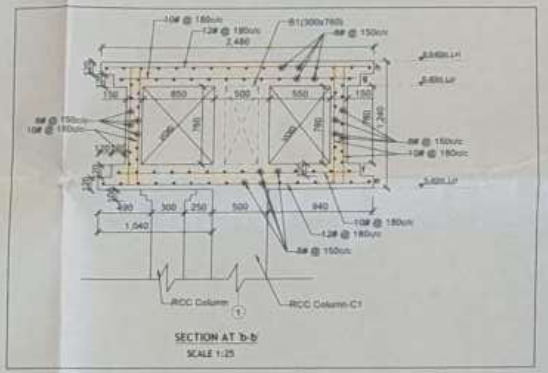


SECTION 'P-P'
SCALE 1:25

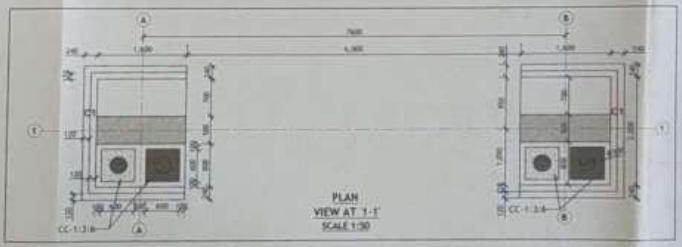
SECTION 'Q-Q'
SCALE 1:25



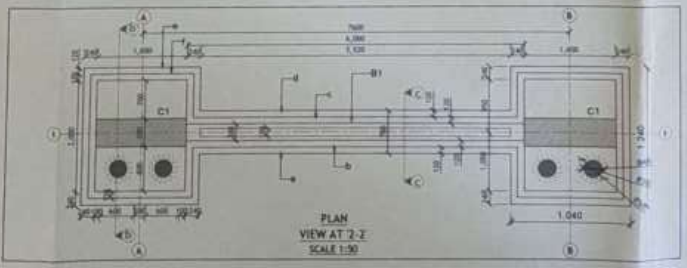
FOOTING & COLUMN LAYOUT
SCALE 1:100



SECTION AT 'b-b'
SCALE 1:25



PLAN
VIEW AT '1-1'
SCALE 1:50



PLAN
VIEW AT '2-2'
SCALE 1:50

NOTES:

1. Mix for all Rcc work shall be M40.Cement used shall conform to IS 8112 or IS 12269.
2. HYSD Bars of Fe500 (EQR) conforming to IS 1786 or TMT Bars shall be used as Reinforcement. The same is denoted as #.
3. The coarse Aggregates used shall be of 20mm nominal size.
4. A lean concrete of mix CC 1:4 :8 shall be provided below Base slab.
5. The SBC of the soil has been adopted as 100KN/Sqm at 2m depth for calculation.
6. The nominal cover for reinforcement shall be
   a) Footing -75mm
   b) Column -45mm
   c) Beam -35mm
   d) Slab -20mm
7. The Lap length/Development length for Bars shall be - 36 Dia.
8. All RCC works shall be adequately vibrated to ensure proper compaction.
9. Figured dimensions only shall be followed.

Checked & Verified

Dr S P Singh
Professor of Civil Engineering
Dr S R Ambedkar National Institute of Technology
PO-REC
Silachar, Assam (Pin) 788

EXECUTIVE ENGINEER (I)

SL NO.	DATE	DESCRIPTION
		REVISION

DRAWING NO. - GL/23-24/4		SHEET NO.
REVISION NO.	0	1/1
ISSUE DATE - APRIL'2023		SCALE - 1:100, 1:50, 1:25.

CLIENT:

SURENDRA INFRASTRUCTURE PVT. LTD.
(FOR PBMC, PORT BLAIR)

PROJECT:

PROPOSED CONSTRUCTION OF ENTRANCE ARCH GATE AT MARINA PARK , PORT BLAIR.

SW: PROVIDING AND SUPPLYING DESIGN AND DRAWING.

DRAWING TITLE:

Structural Details - Footing & Column Layout, Details of Footing & Column, L-Section of Beam-B1, Front Elevation and Details of Sections.

DEALT BY:

GLOBE CONSULTANCIES
(Civil Engineering Consultants)
2nd Floor, Common Service Centre Building
ATR Main Road, Bathubasthi,
Garacharma,Port Blair
Tele/Fax: 03192 - 251270, Mobile:9434280874
Email:philothomas@gmail.com

Consulting Civil Engineer
Chennai Region
Approved Valuer - I
Registered Valuer - I

Division:- Executive Engineer-III (SWM/MC), Port Blair Municipal Council, Port Blair

(1st R.A BILL)

COMPUTERIZED MEASUREMENT BOOK

(DETAILS OF ABSTRACT)

CMB No:- 105/EE-III/SWM/MC/2023-24

Name of Work: - Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping, Strengthening & Construction of Sea Wall

Name of Contractor: - M/s. Surendra Infrastructure (P) Ltd.

Agreement No.: - 01(PBSPL) of 2022-2023

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

Scanned with OKEN Scanner

Certified that this Computerized measurement book bearing no. 105/EE-III/SWM/MC/2023-24 contains **06** leaves serially numbered from pages 01 to 06 and two blank pages without any damage.

Signature of
Contractor

Signature of
Assistant Engineer

Signature of
Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

Scanned with OKEN Scanner

Details of 1st RA Bill					
Mobalization Advance					
Name of Work	Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scaping. Strengthening & Constructrion of Sea Wall				
Agreement No:- 02/SE/PBMC/PBSPL/2021-2022					
Agency : M/s Surendra Infrastructure (p) Ltd.					
Date of Commencement of Work :23.02.2023					
Date of Completion : In Progress					
CMB No.					
S.No	BGB NO.	Date of Issue	Valid upto	BGB Amount	Remarks
1	116401100017911	03.07.2023	02.07.2024	Rs. 6,01,300.00	
2	116401100017912	03.07.2023	02.07.2024	Rs. 6,01,300.00	
3	116401100017913	03.07.2023	02.07.2024	Rs. 6,01,300.00	
4	116401100017914	03.07.2023	02.07.2024	Rs. 6,01,300.00	
5	116401100017915	03.07.2023	02.04.2024	Rs. 6,01,300.00	
6	116401100017916	03.07.2023	02.04.2024	Rs. 6,01,300.00	
7	116401100017917	03.07.2023	02.04.2024	Rs. 6,01,300.00	
8	116401100017918	03.07.2023	02.04.2024	Rs. 6,01,300.00	
9	116401100017919	03.07.2023	02.01.2024	Rs. 6,01,300.00	
10	116401100017920	03.07.2023	02.01.2024	Rs. 6,01,300.00	
11	116401100017921	03.07.2023	02.01.2024	Rs. 6,01,300.00	
12	116401100017922	03.07.2023	02.01.2024	Rs. 6,01,300.00	
13	116401100017923	03.07.2023	02.10.2023	Rs. 6,01,300.00	
14	116401100017924	03.07.2023	02.10.2023	Rs. 6,01,300.00	
15	116401100017925	03.07.2023	02.10.2023	Rs. 6,01,300.00	
	Total Amount of BGB			Rs. 90,19,500.00	

Signature of the Contractor

Signature of the AE

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

Scanned with OKEN Scanner

YARD STICK PERCENTAGES

NAME OF WORK :	Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
CA NO	01 (PBSPL) of 2022-2023
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% APPROVED	% EXECUTED	AMOUNT
1	2	3	4	5
1	STAGE-I :Preparation of Architectural and structural drawings and strucrural design claculation is approval by MIT/IIT	5.00	5.00	81,99,500.00
2	STAGE-II :Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	45.00	0.00	0.00
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	10.00	0.00	0.00
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	12.00	0.00	0.00
5	STAGE-V :RCC Paraphet Wall .6m ht ,RCCdeck slabshuttering and steel Reinforcement soling 100mm tk, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.00	0.00	0.00
6	STAGE-VI : Gate column ,Earth work Excavation, rcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.50	0.00	0.00
7	STAGE-VII : CABLE DUCTCum Drain-465.6m,pole foundation-24 nos Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 in Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.50	0.00	0.00
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench tles	6.00	0.00	0.00
9	STAGE-IX : Mislaneous Claning & Handing Over	1.00	0.00	0.00
	TOTAL	100.00	5.00	81,99,500.00

NOTE The Total Wall Upto Flag Point is for a length of 465.6 RM Covering 32 Spans of 14.55 RM each.
Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Executive Engineer

Junior Engineer

Assistant Engineer

contractor

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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LT'

YARD STICK PERCENTAGES

NAME OF WORK :	Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
CA NO	01 (PBSPL) of 2022-2023
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% OVER STAGE WISE	% RECOMMENDED
	2	4	5
1	STAGE-I :Preparation of Architectural and structural drawings and structural design calculation is approval by MIT/IIT	7.00	5%
2	STAGE-II : Dismantling of old concrete,Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M40 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	46.55	45.00
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	8.59	10.00
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	8.68	12.00
5	STAGE-V :RCC Paraphet Wall ,6m ht ,RCCdeck slabshuttering and steel Reinforcement soiing 100mm tk, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.50	15.00
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.68	2.50
7	STAGE-VII ; CABLE DUCTCum Drain-465.6m,pole foundation-24 nos-Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 in Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.00	3.50
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench ties	5.00	6.0
9	STAGE-IX:Mislaneous cleaning &Handing over	1.00	1.0
	TOTAL	100.00	

Note: The total wall upto Flag Point is for a length of 465.6 RM covering 32 spans of 14.55 RM each. Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Junior Engineer

Executive Engineer

Assistant Engineer

Contractor

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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L+C

Abstract of 1st RA Bill

Mobalization & Secured Advance

Name of Work	Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture Service Core Trenching and Land Scaping, Strengthening & Constructrion of Sea Wall

Agreement No:- 02/SE/PBMC/PBSPL/2021-2022

Agency : M/s Surendra Infrastructure (p) Ltd.

Date of Commencement of Work :23.02.2023

Date of Completion : In Progress

CMB No.

Mobalization advance @ 10% of Agreement Amount	=	10% of Rs. 16,39,90,000.00
	=	Rs. 1,63,99,000.00
Paid in 1st installment of mobalization advance @ 5% (A)	=	Rs. 81,99,500.00
Paid in Materials Laying at site (steel) (B)	=	Rs. 93,52,026.00
Stage One Of Approved Yard Stick (Preparation of Architectural and structural drawings & design)	=	Rs. 81,99,500.00
Total	=	Rs. 2,57,51,026.00
Total Work Done	=	Rs. 81,99,500.00
Security deposit @ 2.5% on Total Work Done	=	Rs. 2,04,987.50 2,04,988/-
GST @ 2% on Total Total Work Done (₹=1,75,51,526/-)	=	Rs. 1,63,990.00 ~~81,995~~ 3,51,031/-
IT @ 2% on Total Work Done (₹=1,75,51,526/-)	=	Rs. 1,63,990.00 3,51,031/-
Labour Welfare Cess @ 1% on Total Done	=	Rs. 81,995.00
Net Work Done (C)	=	Rs. 75,84,537.50 9,89,045/-
Payable Net Amount (A+B+C)	=	Rs. 2,51,36,063.50
(Say)	=	Rs. 2,51,36,064.00 2,47,61,981/-

(Rupees -Two Crore ~~Fifty One~~ Lakhs ~~Thirty Six~~ Thousand ~~Sixty Four~~ Only)

fifty seven sixty one nine hundred eighty one

Assistant Engineer

Junior Engineer

Contractor

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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MATERIAL LAYING AT SITE

Agreement No: 02/SE/PBMC/PBSPL/2021-2022

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting Street Furniture, Service Core

Name of Contractor : M/s Surendra Infrastructure (P) Ltd.

Ser No	Sch Ref No.	Description of Item of work	A/U	Qty Brought at Site	Rate as per CA	Rate as per Justfication	Rate Aliowed %	Rate Allowed	Amount	Remark
1	As per Design	10 mm dia TMT Bars	Kgs	69920.00	-	70.32	65%	45.71	3195903.36	
2	As per Design	12 mm dia TMT Bars	Kgs	79600.00	-	70.32	65%	45.71	3638356.80	
3	As per Design	16 mm dia TMT Bars	Kgs	50300.00	-	70.32	65%	45.71	2299112.40	
4	As per Design	20 mm dia TMT Bars	Kgs	5020.00	-	67.01	65%	43.56	218653.63	
								Total	9352026.19	

Total Qty = 204840.00

Say Rs 93,52,026.00

Contractor

Engineer-In-Charge

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Certified that:-

1. The work has been executed as per terms and conditions of the agreement.
2. No material and T & P has been issued from the Department.
3. Own arrangements for water has been made.
4. No Labour Complaints has been received.
5. Requisite technical staff has been employed as per agreement.
6. Up to date recoveries have been effected in this bill.
7. All Mandatory Test have been conducted.

Signature of the Contractor

Signature of the AE

Signature of the EE (Works)

Certificate

i) The quantities of material for which the advance are made actually been brought to site.

ii) Full quantities of the materials, for which advance is to be made are required by the contractor for use on items of work for which rates for finished work have been agreed upon

iii) The quality of materials is as per the specifications.

A.E.-II (K/w)

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Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Ref - Page No: 01 to 06 of TE/MB.

Authority :- 01 (PBSPL) of 2022-2023

N.O.W :- Marine Esplande : Marine Road restructing with Uniform carriage way walking track, Street lighting, Street furniture Service core trenching and landscaping.

S-work → Strengthening & Construction of sea wall.

Agency → M/s Surendra Infrastructure (P) Ltd.

Gross value of work done → 2,57,51,026/-

Deal (i) S/deposit @ 2.5% on (₹=81,99,500/-) → 2,04,988/-

(ii) I Tax @ 2% on secured advance & Stage-I (i.e ₹= 1,75,51,526/-) → 3,51,031/-

(iii) Labour cess @ 1% on (₹=81,99,500/-) → 81,995/-

(iv) TDS on GST @ 2% on secured advance & Stage-I i.e (Rs. 1,75,51,526/-) → 3,51,031/-

Total Deduction → 9,89,045/-

net payable Amount → 2,47,61,981/-

1st RA Bill in respect of M/s Surendra Infrastructure (P) Ltd. against Agr. No: 01(PBSPL) of 2022-2023 is passed for ₹ 2,57,51,026/- (Rupees Two crores fifty seven lakhs fifty one thousand and twenty six only)

Executive Engineer - III (Works)
Municipal Council
Port Blair

payment released for ₹ 2,47,61,981/-

लेखा अधिकारी
ACCOUNTS OFFICER
नगरपालिका परिषद
Municipal Council

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Division:- Executive Engineer-III (Works) PBSPL,
Port Blair Municipal Council, Port Blair

(2nd R.A BILL)

COMPUTERIZED MEASUREMENT BOOK

(ABSTRACT)

CMB No:- 125/EE-III/Works/SWM/MC/2023-24

Name of Work: - Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and landscaping.

Name of Contractor: - M/s. Surendra Infrastructure (P) Ltd.

Agreement No.: - 01 (PBSPL) of 2023-2023

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Under RTI Act 2005
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SVPMC

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Certified that this Computerized measurement book bearing No. /25/EE-III/Works/SWM/MC/2023-24 contains 06 leaves serially numbered from pages 01 to 06 and two blank pages without any damage.

Signature of
Contractor

Signature of
Assistant Engineer

Signature of
Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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REVIEW NOTES

Date	Pages of recording measurements subjected to test checks	Value of measurement checked	Result of the exercise checked	Dated initials and designation of the checking officer
3/10/23	(3)	9231033.00	Satisfactory	3/10/23
3/10/23	(3)	1846207.00	"	03/10/2023

Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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YARD STICK PERCENTAGES

2nd RA Bill

NAME OF WORK :	Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
CA NO	01 (PBSPL) of 2022-2023
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% APPROVED	% EXECUTED		AMOUNT
			As per last RA bill	Upto This RA bill	
1	2	3	4		5
1	STAGE-I :Preparation of Architectural and structural drawings and strucrural design claculation is approval by MIT/IIT	5.00	5.00	5.00	8,199,500.00
2	STAGE-II :Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	45.00	0.00	8.00	13,119,200.00
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	10.00	0.00	0.00	0.00
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	12.00	0.00	0.00	0.00
5	STAGE-V :RCC Paraphet Wall ,6m ht ,RCCdeck slabshuttering and steel Reinforcement soling 100mm tk, pcc 1:4:8 below Decl slab,paver block,FRB hand rail	15.00	0.00	0.00	0.00
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.50	0.00	0.00	0.00
7	STAGE-VII : CABLE DUCTCum D.Main-465.6m,pole foundation-24 nos-Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 in Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.50	0.00	0.00	0.00
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench ties	6.00	0.00	0.00	0.00
9	STAGE-IX : Mislaneous Claning & Handing Over	1.00	0.00	0.00	0.00
	TOTAL	100.00	5.00	13.00	21,318,700.00

NOTE The Total Wall Upto Flag Point is for a length of 465.6 RM Covering 32 Spans of 14.55 RM each.
Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Executive Engineer

Junior Engineer

Assistant Engineer

contractor

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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YARD STICK PERCENTAGES

NAME OF WORK :	Marine esplanade: Marine road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
CA NO	01 (PDSPL) of 2022-2023
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% OVER STAGE WISE	% RECOMMENDED
	2	1	3
1	STAGE-I :Preparation of Architectural and structural drawings and structural design calculation is approval by MIT/IIT	7.00	5%
2	STAGE-II : Dismantling of old concrete,Earth work Excavation for Foundation , Pcc 1:4:8, RCC M40 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	48.55	45.0
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	8.59	10.0
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	8.68	12.0
5	STAGE-V :RCC Parapet Wall ,6m ht ,RCCdeck slabshuttering and steel Reinforcement soling 100mm th, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.50	15.0
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.68	2.50
7	STAGE-VII : CABLE DUCTCum Drain-465.6m,nale foundation-24 nos-Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 in Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.00	3.50
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Pench tles	5.00	6.0
9	STAGE-IX:Mislaneous cleaning&Handing over	1.00	1.0
	TOTAL	100.00	

Note: The total wall upto Flag Point is for a length of 465.6 RM covering 32 spans of 14.55 RM each. Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Junior Engineer

Executive Engineer

Assistant Engineer

Contractor

(2)

Information Revealed
Under RTI Act 2005
P.O. Executive Engineer
SVPMC

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Abstract of 2nd RA Bill

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scaping, Strengthening & Constructrion of Sea Wall

Agreement No:- 01 (PBSPL) OF 2022-23

Agency : M/s Surendra Infrastructure (p) Ltd.

Date of Commencement of Work : 17.03.2023

Date of Completion : In Progress

CMB No. 125/EE-III/Works/SWM/MC/23-24

Stage -I		
Preparation of Architectural and structural drawings & design		8,199,500.00
Stage -II		
Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement (footing ,wall , counter fort)		13,119,200.00
	Total Work Done Amount =	**21,318,700.00**
	Paid in Materials Laying at site (steel)	9,352,026.00
	Total Gross Value =	**30,670,726.00**
Less amount already paid 1st RA Bill (-)		17,551,526.00
	(A) =	**13,119,200.00**
Mobalization Advance		
Mobalization advance @ 10% of Agreement Amount		1,63,99,000.00
2nd Installment of Mobalization Advance @ 5% (-)		81,99,500.00
	(B)=	**8,199,500.00**
	Total Amount of This Bill (A)+(B) =	**21,318,700.00**

RECOVERY DETAILS			
i)	Security Deposit (Gross Amount of work done amount) @ 2.5% on Rs. **2,13,18,700.00**	532,968.00	
	Less already recovered on 1st RAR	204,988.00	
	Now to be recovered	***327,980.00***	***327,980.00***
ii)	Income Tax (Gross Amount of work done amount) @ 2% on Rs. ~~2,13,18,700.00~~	426,374.00	
	Less already recovered on 1st RAR	351,031.00	
	Now to be recovered	***75,343.00***	***75,343.00***
iii)	Labour welfare cess (Gross Amount of work done amount)@ 1% on Rs. **2,13,18,700.00**	213,187.00	
	Less already recovered on 1st RAR	81,995.00	
	Now to be recovered	***131,192.00***	***131,192.00***
iv)	GST @ 2% on Base Value of Gross Amount		
	UTGST @ 1% on **2,13,18,700.00**	213,187.00	
	CGST @ 1% on **2,13,18,700.00**	213,187.00	
	Less already recovered on 1st RAR	351,031.00	
	Now to be recovered	***75,343.00***	***75,343.00***
v)	Material Laying at Site (Recovery)		
	Now to be recovered	***606,875.00***	***606,875.00***

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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vi)	Mobilization advance (Recovery)		
	1st Due (Against BGB No. 11640100017925 BGB Amount : 6,01,300.00)	546,634.00	
	2nd Due (Against BGB No. 11640100017924 BGB Amount : 6,01,300.00)	546,634.00	
	2nd Due (Against BGB No. 11640100017923 BGB Amount : 6,01,300.00)	546,634.00	
	Now to be recovered	*1,639,902.00*	*1,639,902.00*
	Total Recovery		3206441.00
	Net Total.....		2,856,634.00
	Net Amount Payable		*18,462,066.00*
	Net Amount in Words	*Rs.*	*18,462,066.00*
		(Rupees One Crore Eighty Four Lakhs Two Thousand Sixty Six only)	one crore eighty two lakhs sixty two thousand only 18112259.00

Certified that :

1. The work has been executed as per specification, terms and condtions of the agreement
2. No T&P has been isued from the Department
3. Own arrangements for water has been made by the contractor
4. Requisite Technical staff has been employed as per agreement
5. Upto date recoveries have been effected in this bill
6. All mandatory test have been conducted & result found satisfactory
7. No labour complaint received till date of preparation of this bill

Signature of Contractor

Signature of Assistant Engineer

Signature of Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC.

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Details of 2nd RA Bill					
Mobalization Advance					
Name of Work	Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scaping. Strengthening & Constructrion of Sea Wall				
Agreement No:- 01 (PBSPL) OF 2022-23					
Agency : M/s Surendra Infrastructure (p) Ltd.					
Date of Commencement of Work :23.02.2023					
Date of Completion : In Progress					
CMB No. 125/EE-III/Works/SWM/MC/23-24					
S.No	BGB NO.	Date of Issue	Valid upto	BGB Amount	Remarks
1	11640100018442	20.09.2023	19.09.2024	Rs. 6,01,300.00	
2	11640100018443	20.09.2023	19.09.2024	Rs. 6,01,300.00	
3	11640100018444	20.09.2023	19.09.2024	Rs. 6,01,300.00	
4	11640100018446	20.09.2023	19.09.2024	Rs. 6,01,300.00	
5	11640100018447	20.09.2023	19.08.2024	Rs. 6,01,300.00	
6	11640100018449	20.09.2023	19.08.2024	Rs. 6,01,300.00	
7	11640100018450	20.09.2023	19.08.2024	Rs. 6,01,300.00	
8	11640100018451	20.09.2023	19.08.2024	Rs. 6,01,300.00	
9	11640100018452	20.09.2023	19.05.2024	Rs. 6,01,300.00	
10	11640100018453	20.09.2023	19.05.2024	Rs. 6,01,300.00	
11	11640100018454	20.09.2023	19.05.2024	Rs. 6,01,300.00	
12	11640100018455	20.09.2023	19.05.2024	Rs. 6,01,300.00	
13	11640100018456	20.09.2023	19.12.2023	Rs. 6,01,300.00	
14	11640100018457	20.09.2023	19.12.2023	Rs. 6,01,300.00	
15	11640100018458	20.09.2023	19.12.2023	Rs. 6,01,300.00	
	Total Amount of BGB			Rs. 9,019,500.00	

Signature of the Contractor

Signature of the AE

(5)

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Details of 1st RA Bill

Mobalization Advance

Name of Work	Marina Road Restructuring with Uniform Carringe Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land scaping. Strengthening &Construction of Sea Wall

Agreement No.:- 02/SE/PBMC/PBSPL/ 2021-2022

Agency: M/s Surendra Infrastructure (P) Ltd.

Date of Commencement of work : 23. 02. 2023

Date of Completion : In Progress

CMB No.

S.No	BGB NO.	Date of Issue	Valid upto	BGB Amount	Remarks
01	11640100017911	03.07.2023	02.07.2024	₹ 6,01,300.00	
02	11640100017912	03.07.2023	02.07.2024	₹ 6,01,300.00	
03	11640100017913	03.07.2023	02.07.2024	₹ 6,01,300.00	
04	11640100017914	03.07.2023	02.07.2024	₹ 6,01,300.00	
05	11640100017915	03.07.2023	02.04.2024	₹ 6,01,300.00	
06	11640100017916	03.07.2023	02.04.2024	₹ 6,01,300.00	
07	11640100017917	03.07.2023	02.04.2024	₹ 6,01,300.00	
08	11640100017918	03.07.2023	02.04.2024	₹ 6,01,300.00	
09	11640100017919	03.07.2023	02.01.2024	₹ 6,01,300.00	
10	11640100017920	03.07.2023	02.01.2024	₹ 6,01,300.00	
11	11640100017921	03.07.2023	02.01.2024	₹ 6,01,300.00	
12	11640100017922	03.07.2023	02.01.2024	₹ 6,01,300.00	
13	11640100017923	03.07.2023	02.10.2023	₹ 6,01,300.00	
14	11640100017924	03.07.2023	02.10.2023	₹ 6,01,300.00	
15	11640100017925	03.07.2023	02.10.2023	₹ 6,01,300.00	
			Total Amount of BGB	₹ 90,19,500.00	

Signature of the Contractor

Signature of the AE

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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MATERIAL LAYING AT SITE (2nd RA Bill)

Agreement No: 02/SE/PBMC/PBSPL/2021-2022

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting Street Furniture, Service Core

Name of Contractor : M/s Surendra Infrastructure (P) Ltd.

Ser No	Sch Ref No.	Description of Item of work	A/U	Qty Brought at Site	Qty Consumption (upto 2nd RA Bill)	Balance Qty at site	Rate as per CA	Rate as per Justfication	Rate Allowed %	Rate Allowed	Amount	Remark
1	As per Design	10 mm dia TMT Bars	Kg	69920.00	3045.00	66875.00	-	70.32	65%	45.71	3056722.50	
2	As per Design	12 mm dia TMT Bars	Kg	79600.00	5760.00	73840.00	-	70.32	65%	45.71	3375078.72	
3	As per Design	16 mm dia TMT Bars	Kg	50300.00	3910.00	46390.00	-	70.32	65%	45.71	2120394.12	
4	As per Design	20 mm dia TMT Bars	Kg	5020.00	590.00	4430.00	-	67.01	65%	43.56	192955.30	
		Total Qty =		204840.00	13305.00	₹ 191535.00				Total	8745150.64	

Say Rs 8,745,151.00

Contractor

Engineer-In-Charge

Information Revealed Under RTI Act 2005 PIO, Executive Engineer SVPMC

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Ref-page no: 01 to 04 of TCNB

Authority :- 01 (PBSPL) of 2022-2023.

N.O.W :- Marine Esplanade : Marine Road restructing with Uniform carriage way, walking track Street lighting Street furniture Service core trenching and landscaping.

Agency :- M/s Surendra Infrastructure (P) Ltd.

Total Gross value of work done	→	4,70,69,786/-
Already paid in 1st RA Bill	→	2,57,51,086/-
Gross value of- 2nd RA Bill	→	2,13,18,700/-

Ded/ (i) S/deposit @ 2.5% on GIV (213187 00) → 5,32,968/-
Already deducted in 1st RA Bill → 2,04,988/-
Now to be deducted → 3,27,980/-

(ii) I/Tax @ 2% on secured advance (Stage-I & Stage-II less Rs. 606875/- Adjusted from secured advance paid (9352026 (-) 606875 + 8199500 + 13119200 = Rs. 30063851.00 Excluding mobilization advance) → 6,01,277/-
Already deducted in 1st RA Bill → 3,51,031/-
Now to be deducted → 2,50,246/-

(iii) Labour cess @ 1% on GIV → 2,13,187/-
Already deducted in 1st RA Bill → 81,995/-
Now to be deducted → 1,31,192/-

Cont-II

Information Revealed Under RTI Act 2005
PIO, Executive Engineer SVPMC
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(iv) TDS on GST @ 2% on secured advance @ Stage I & Stage II less Rs 606875/- Adjusted from secured advance paid (9359026 (-) 606875 + 8199500 + 13119200 = Rs. 30063851.00) Excluding mobilization advance → 6,01,277/-

Already deducted in 1st RA Bill → 351031/-

Now to be deducted → 250246/-

(v) Recovery material lying at site → 606875/-

(vi) mobilization advance recovery (8199500/15BG1 = Rs. 546634.00x3) → 1639902/-

Total deduction → 3206441/-

Net payable Amount → 18112359/-

2nd RA Bill in respect of M/s Surendra Infrastructure (P) Ltd. against Agr. No: 01 (PBSPL) of 2022-2023 is passed for ₹ = 2,13,18,700/- (Rupees Two ~~lakhs~~ crores thirteen lakhs eighteen thousand Seven hundred only).

Executive Engineer III (NKS)
Municipal Council
Port Blair

payment released for ₹ = 18112359/-

ACCOUNTS OFFICER
Municipal Council
Port Blair

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC.

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Division:- Executive Engineer-III (SWM/MC), Port Blair Municipal Council, Port Blair

(3rd R.A BILL)

COMPUTERIZED MEASUREMENT BOOK

(ABSTRACT)

CMB No:- 130/EE-III/SWM/MC/2022-24

Name of Work: - Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scalping. Strengthening & Construction of Sea Wall.

Name of Contractor: - M/s. Surendra Infrastructure (P) Ltd.

Agreement No.: - ~~02/SE(PB)/MC/PBSPL/ of 2021-2022~~ 01 (PBSPL) OF 22-23

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Certified that this Computerized measurement book bearing no. 130/EE-III/SWM/MC/2023-24 contains 06 leaves serially numbered from pages 01 to 06 and two blank pages without any damage.

Signature of Contractor	Signature of Assistant Engineer	Signature of Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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REVIEW NOTES

Date	Pages of recording measurements subjected to test checks	Value of measurement checked	Result of the exercise checked	Dated initials and designation of the checking officer
3/11/23	(1)	14038000.00	Satisfactory	3/11/23
			"	
3/11/23	(1)	2807600.00	"	

Information Revealed
Under RTI Act 2005
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SVPMC

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Abstract of 3rd RA Bill

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scaping, Strengthening & Constructrion of Sea Wall

Agreement No:- ~~02/SE/RDMC/PBSPL/2021-2022~~ 01(PBSPL) OF 22-23

Agency : M/s Surendra Infrastructure (p) Ltd.

Date of Commencement of Work : 23.02.2023

Date of Completion : In Progress

CMB No. 130/EE-III/SWM/MC/23-24

Total Work Done Amount	
Stage -I	
Preparation of Architectural and structural drawings & design	81,99,500.00
Stage -II	
Earth work Exacavation for Foundation . Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement (footing ,wall , counter fort) @ 10% deduction TC Rajl 13/11/2023	2,76,65,113.00
Stage -III	
RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	61,49,625.00
Stage -IV	
RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	73,79,550.00
Total Work Done Amount =	**4,93,93,788.00**
Paid in Materials Laying at site (steel)	93,52,026.00
Total Gross Value =	**5,87,45,814.00**
Less amount already paid 1st RA Bill (-)	1,75,51,526.00
Less amount already paid 2nd RA Bill (-)	1,31,19,200.00
Amount of This Bill =	*2,80,75,088.00*

RECOVERY DETAILS			
i)	Security Deposit (Gross Amount of work done amount) @ 2.5% on Rs. 4,93,93,788.00	12,34,844.00	1234845/-
	Less already recovered on 1st RAR	2,04,988.00	532408/-
	Less already recovered on 2nd RAR	3,27,980.00	
	Now to be recovered	*7,01,876.00*	(7,01,876.00) 701877/-
ii)	Income Tax (Gross Amount of work done amount) @ 2% on Rs.4,93,93,788.00	9,87,876.00	1111862/- 601233/-
	Less already recovered on 1st RAR	3,51,031.00	
	Less already recovered on 2nd RAR	2,50,246.00	(3,86,599.00)
	Now to be recovered	*3,86,599.00*	510585/-
iii)	Labour welfare cess (Gross Amount of work done amount)@ 1% on Rs. 4,93,93,788.00	4,93,938.00	
	Less already recovered on 1st RAR	81,995.00	213187/-
	Less already recovered on 2nd RAR	1,31,192.00	
	Now to be recovered	*2,80,751.00*	*2,80,751.00*

(4)

Information Revealed Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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iv)	GST @ 2% on Base Value of Gross Amount UTGST @ 1% on 4,93,93,788.00		
	Less already recovered on 1st RAR	4,93,938.00	111862/-
	Less already recovered on 2nd RAR	1,75,515.50	60122/-
	Now to be recovered	1,25,123.00	
		1,93,299.50	*1,93,299.50*
v)	CGST @ 1% on 4,93,93,788.00		10585/-
	Less already recovered on 1st RAR	4,93,938.00	
	Less already recovered on 2nd RAR	1,75,515.50	
	Now to be recovered	1,25,123.00	
		1,93,299.50	*1,93,299.50*
vi)	Material Laying at Site (Recovery)	*31,52,715.00*	
	Less already recovered on 2nd RAR	*6,06,875.00*	
	Now to be recovered	*25,45,840.00*	*25,45,840.00*
vii)	Mobilization advance (Recovery)		
	1st Due (Against BGB No. 11640100017925 BGB Amount : 6,01,300.00)	5,46,634.00	
	2nd Due (Against BGB No. 11640100017924 BGB Amount : 6,01,300.00)	5,46,634.00	
	2nd Due (Against BGB No. 11640100017923 BGB Amount : 6,01,300.00)	5,46,634.00	
	Now to be recovered	*16,39,902.00*	*16,39,902.00*
	Total Recovery	6189540/-	~~59,41,567.00~~
	Net Total.....	21855548/-	~~2,21,33,521.00~~
	Net Amount Payable	*Rs.*	~~*2,21,33,521.00*~~
	Net Amount in Words	**(Rupees Two Crore Twenty One Lakhs Thirty three Thousand Five Hundred Twenty One only**	

Certified that :

1 The work has been executed as per specification, terms and condtions of the agreement
2 No T&P has been isued from the Department
3 Own arrangements for water has been made by the contractor
4 Requisite Technical staff has been employed as per agreement
5 Upto date recoveries have been effected in this bill
6 All mandatory test have been conducted & result found satisfactory
7 No labour complaint received till date of preparation of this bill

Signature of Contractor

Signature of A/E

Signature of E/E

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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YARD STICK PERCENTAGES

3rd RA Bill

NAME OF WORK :	Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
CA NO	01 (PBSPL) of 2022-2023
CA AMOUNT	16,39,90,000.00
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% APPROVED	% EXECUTED AS LAST PER RAR	% EXECUTED AS PER THIS RAR	AMOUNT
1	2	3	4		5
1	STAGE-I :Preparation of Architectural and structural drawings and strucrural design claculation is approval by MIT/IIT	5.00	5.00	5.00	81,99,500.00
2	STAGE-II :Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	45.00	8.00	16.87	2,76,65,113.00
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	10.00	0.00	3.75	61,49,625.00
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	12.00	0.00	4.50	73,79,550.00
5	STAGE-V :RCC Paraphet Wall ,6m ht ,RCCdeck slabshuttering and steel Reinforcement soling 100mm tk, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.00	0.00	0.00	0.00
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.50	0.00	0.00	0.00
7	STAGE-VII : CABLE DUCTCum Drain-465.6m,pole foundation-24 nos-Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 in Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.50	0.00	0.00	0.00
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench ties	6.00	0.00	0.00	0.00
9	STAGE-IX : Mislaneous Clraning & Handing Over	1.00	0.00	0.00	0.00
	TOTAL	100.00	13.00	30.12	4,93,93,788.00

NOTE The Total Wall Upto Flag Point is for a length of 465.6 RM Covering 32 Spans of 14.55 RM each. Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Executive Engineer

Junior Engineer

Assistant Engineer

contractor

(6)

Information
Under RT
PIO, Executive Engineer
SVPMC

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Analysis for percentage of Work done (3rd RA Bill)

1.0 Stage- II

Approved percentage
(For 32 No., of Span of Sea Wall) = 45%

Total No., of Span Work done upto 3rd RA Bill = 12

Percentage of Work Done for 3rd RA Bill Under Stage -II = 45%

2.0 Stage- II

Total No., of Steel Reinforcement fabricated for Sea Wall = 20

Total No., of Span Work done upto 2nd RA Bill = 5

Percentage of Work Done for 2nd RA Bill Under Stage -II = $\frac{45\%}{32} \times 12 = 16.875\ \%$

2.0 Stage- III

Approved percentage
(For 32 No., of Span of Sea Wall) = 10%

Total No., of Span Work done upto 3rd RA Bill = 12

Percentage of Work Done for 3rd RA Bill Under Stage -III = $\frac{10\%}{32} \times 12 = 3.750\ \%$

3.0 Stage- IV

Approved percentage
(For 32 No., of Span of Sea Wall) = 12%

Total No., of Span Work done upto 3rd RA Bill = 12

Percentage of Work Done for 3rd RA Bill Under Stage -IV = $\frac{12\%}{32} \times 12 = 4.500\ \%$

Junior Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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YARD STICK PERCENTAGES

NAME OF WORK: Marine esplanade Marina road restructuring with uniform carriage way walking track, street lighting, street furniture, service core trenching and land scaping.

CA NO: 01 (PDSPL) of 2022-2023

NAME OF CONTRACTOR: M/s. Surender Infrastructure (P) Ltd.

Sl NO	DESCRIPTION OF WORK	% OVER STAGE WISE	% APPROACHED TO
1	STAGE-I :Preparation of Architectural and structural drawings and structural design calculation & approval by MIT/III	7.00	
2	STAGE-II : Dismantling of old concrete,Earth work Excavation for foundation , Pcc 1:4:8, RCC M40 in footing,RCC Wall upto 1.2m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	40.55	5.1
3	STAGE-III:RCC Wall upto 1.2m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	8.50	10.0
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall ,counter fort)	8.00	12.0
5	STAGE-V :RCC Parapet Wall ,6in ht ,RCCdeck slab(shuttering and steel Reinforcement soling 100mm th, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.50	15.0
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcement,plastering , painting ,MS GATE	2.00	2.5
7	STAGE-VII : CAULE DUCT(Rain Drain-405.6m,Hole foundation-24 nos-Earth work Excavation for Foundation , Pcc 1:2:6, RCC M15 in Footing,RCC Wall benches Foundation ,12mm plaster in cm 1:4	3.00	3.50
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench tiles	5.00	6.0
9	STAGE-IX:Miscellaneous cleaning &Handing over	1.00	1.0
	TOTAL	100.00	

Note: The total wall upto Ring Point is for a length of 405.6 RM covering 32 spans of 14.98 RM each. Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Junior Engineer

Executive Engineer

Assistant Engineer

Contractor

Information Revealed Under RTI Act 2005 PIO, Executive Engineer SVPMC

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MATERIAL LAYING AT SITE (3rd RA Bill)

Agreement No: ~~VMC/EPC/RBSPL/2021-2022~~ 01(PBSPL) OF 22-23

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting Street Furniture, Service Core

Name of Contractor : M/s Surendra Infrastructure (P) Ltd.

Ser No	Sch Ref No.	Description of Item of work	A/U	Qty Brought at Site	Qty Consumption (upto Last RA Bill)	Qty Consumption (upto 3rd RA Bill)	Balance Qty at site	Rate as per CA	Rate as per Justfication	Rate Allowed %	Rate Allowed	Amount	Remark
1	As per Design	10 mm dia TMT Bars	Kg	69920.00	3045.00	14441.00	52434.00	-	70.32	65%	45.71	2396653.27	
2	As per Design	12 mm dia TMT Bars	Kg	79600.00	5760.00	23770.00	50070.00	-	70.32	65%	45.71	2288599.56	
3	As per Design	16 mm dia TMT Bars	Kg	50300.00	3910.00	15157.00	31233.00	-	70.32	65%	45.71	1427597.96	
4	As per Design	20 mm dia TMT Bars	Kg	5020.00	590.00	2445.00	1985.00	-	67.01	65%	43.56	86459.65	
		Total Qty =		204840.00	13305.00	55813.00	135722.00				Total	6199310.45	
											Say Rs	61,99,311.00	

Contractor

Junior Engineer

Assistant Engineer

Engineer-In-Charge

Information Revealed Under RTI Act 2005 PIO, Executive Engineer CVPMC

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Ref. Page no: 14 to 19 of TCMS

Authority: Agr. no: 01/PBS/PD 0/2022-2023

NOW: - Marine Esplanade: Minor Road restructuring with bituminous carriage way, walking track, Street lighting, Street furniture, services core, trenching and landscaping.
S/o: Strengthening & construction of sea wall.

Agency: M/s. Surendra Infrastructure (P) Ltd.

Gross value of work done — 5,87,45,814/-
Already Paid upto 2nd RA — 3,06,70,726/-
NOW 3rd RA Bill Gross — 2,80,75,088/-

Ded:

(i) S/o @ 2.5% on Rs. 49393788/- → 1234845/-
Already ded upto 2nd RA → 532968/-
NOW to be ded → 701877/- ✓

(ii) IT @ 2% on Secure Advance for Stage I, II, III & IV less Rs. 2545840/- → 1111862/-
Already ded upto 2nd RA → 601277/-
NOW to be ded → 510585/- ✓

(iii) L/C @ 1% on Rs. 49393788/- → 493938/-
Already ded 2nd RA → 213187/-
NOW to be ded → 280751/- ✓

(iv) TDS on ANO @ 2% on S/Advance 2nd Stage I, II, III & IV Item Rs. 2545840/- → 1111862/-
Already ded upto 2nd RA → 601277/-
NOW to be ded → 510585/-

d/w.

Information Revealed
Under RTI Act 2005
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SVPMC

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(V) Recovery material lying at site → 2545840/-

(VI) Mobilization Advance recovery → 1639902/-

→ 6189540/-

Total Recovery → 21885548/-

Net Pay

3rd RA Bill no. required to be submitted. Smt. Surendra Information

(IV) Bill is passed for Rs. 28075088/- (Rupees Two Crores Eighty lakhs seventy five thousand and Eighty eight only)

Executive Engineer - III (WKS)
Municipal Council
Port Blair

Payment release for Rs. 21885548/-

लेखा अधिकारी
Accounts Officer - III
नगरपालिका परिषद
Municipal Council
पोर्ट ब्लेयर/Port Blair

Information Revealed
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SVPMC

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Division:- Executive Engineer-III (SWM/MC), Port Blair Municipal Council, Port Blair

(4th R.A BILL)

COMPUTERIZED MEASUREMENT BOOK

(ABSTRACT)

CMB No:-144/EE-III/SWM/MC/2023-24.

Name of Work: - Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scalping. Strengthening & Construction of Sea Wall.

Name of Contractor: - M/s. Surendra Infrastructure (P) Ltd.

Agreement No.: - 01(PBSPL) of 2022-2023

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Certified that this Computerized measurement book bearing no. 144 /EE-III/SWM/MC/2023-24 contains 06 leaves serially numbered from pages 01 to 06 and two blank pages without any damage.

Signature of Contractor	Signature of Assistant Engineer	Signature of Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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REVIEW NOTES

Date	Pages of recording measurements subjected to test checks	Value of measurement checked	Result of the exercise checked	Dated initials and designation of the checking officer
15/2/24	(4)	10301032.00	Satisfactory	15/2/24
15/02/2024	(4)	21,00,000.00	Satisfactory	15/02/2024

Information Revealed
Under RTI Act 2005
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SVPMC

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Abstract of 4th RA Bill

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scaping, Strengthening & Constructrion of Sea Wall

Agreement No:- 01(PBSPL) of 2022-2023

Agency : M/s Surendra Infrastructure (p) Ltd.

Date of Commencement of Work : 17.03.2023

Date of Completion : In Progress

CMB No. /EE-III/SWM/MC/2023-24

Total Work Done Amount		
Stage -I		
Preparation of Architectural and structural drawings & design		81,99,500.00
Stage -II		
Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement (footing ,wall , counter fort) T/check @ 50% work done		4,61,13,988.00
Stage -III		
RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)		66,62,913.70
Stage -IV		
RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort) T/C @ 100% work done 15/04/24		73,79,550.00
Stage -VI		
STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE		16,39,900.00
		6,99,95,851.70
	Total Work Done Amount =	6,99,95,852.00
	Paid in Materials Laying at site (steel)	93,52,026.00
	Total Gross Value =	7,93,47,878.00
Less amount already paid 1st RA Bill (-)		1,75,51,526.00
Less amount already paid 2nd RA Bill (-)		1,31,19,200.00
Less amount already paid 3rd RA Bill (-)		2,80,75,088.00
	Amount of This Bill =	*2,06,02,064.00*

RECOVERY DETAILS			
i)	Security Deposit (Gross Amount of work done amount) @ 2.5% on Rs.6,99,95,852.00	17,49,896.00	
	Less already recovered on 1st RAR	2,04,988.00	
	Less already recovered on 2nd RAR	3,27,980.00	
	Less already recovered on 3rd RAR	7,01,876.00	
	Now to be recovered	*5,15,052.00*	*5,15,052.00*
ii)	Income Tax (Gross Amount of work done amount) @ 2% on Rs.6,99,95,852.00	13,99,918.00	
	Less already recovered on 1st RAR	3,51,031.00	
	Less already recovered on 2nd RAR	2,50,246.00	
	Less already recovered on 3rd RAR	3,86,599.00	
	Now to be recovered	*4,12,042.00*	*4,12,042.00*

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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iii)	Labour welfare cess (Gross Amount of work done amount)@ 1% on Rs. 6,99,95,852.00	6,99,959.00	
	Less already recovered on 1st RAR	81,995.00	
	Less already recovered on 2nd RAR	1,31,192.00	
	Less already recovered on 3rd RAR	2,80,751.00	
	Now to be recovered	*2,06,021.00*	*2,06,021.00*
iv)	GST @ 2% on Base Value of Gross Amount UTGST @ 1% on 6,99,95,852.00		
	Less already recovered on 1st RAR	6,99,959.00	
	Less already recovered on 2nd RAR	1,75,515.50	
	Less already recovered on 3rd RAR	1,25,123.00	
	Now to be recovered	1,93,299.50	
		2,06,021.00	*2,06,021.00*
v)	CGST @ 1% on 7,00,04,051.20		
	Less already recovered on 1st RAR	6,99,959.00	
	Less already recovered on 2nd RAR	1,75,515.50	
	Less already recovered on 3rd RAR	1,25,123.00	
	Now to be recovered	1,93,299.50	
		2,06,021.00	*2,06,021.00*
vi)	Material Laying at Site (Recovery)		
	Less already recovered on 2nd RAR	*38,59,508.00*	
	Less already recovered on 3rd RAR	*6,06,875.00*	
	Now to be recovered	*25,45,840.00*	
		7,06,793.00	*7,06,793.00*
vii)	Mobilization advance (Recovery)		
	3rd Due (Against BGB No. 11640100017919 BGB Amount : 6,01,300.00)	5,46,634.00	
	3rd Due (Against BGB No. 11640100018458 BGB Amount : 6,01,300.00)	5,46,634.00	
	3rd Due (Against BGB No. 11640100018457 BGB Amount : 6,01,300.00)	5,46,634.00	
	3rd Due (Against BGB No. 11640100018456 BGB Amount : 6,01,300.00)	5,46,634.00	
	Now to be recovered	*21,86,536.00*	*21,86,536.00*
	Total Recovery		44,38,486.00
	Net Total.....		1,61,63,578.00
	Net Amount Payable	*Rs.*	*1,61,63,578.00*
	Net Amount in Words	**(Rupees One Crore Sixty OneLakhs Sixty Three Thousand Five Hundred Seventy Eight only)**	

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

Scanned with OKEN Scanner

Certified that :

1 The work has been executed as per specification, terms and condtions of the agreement
2 No T&P has been isued from the Department
3 Own arrangements for water has been made by the contractor
4 Requisite Technical staff has been employed as per agreement
5 Upto date recoveries have been effected in this bill
6 All mandatory test have been conducted & result found satisfactory
7 No labour complaint received till date of preparation of this bill

Signature of Contractor

Signature of A/E

Signature of E/E

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

Scanned with OKEN Scanner

YARD STICK PERCENTAGES

4th RA Bill

NAME OF WORK	Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
CA NO	01 (PBSPL) of 2022-2023
CA AMOUNT	16,39,90,000.00
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% APPROVED	% EXECUTED AS LAST PER RAR	% EXECUTED AS PER THIS RAR	AMOUNT
1	2	3	4		5
1	STAGE-I :Preparation of Architectural and structural drawings and strucrural design claculation is approval by MIT/IIT	5.00	5.00	5.00	81,99,500.00
2	STAGE-II :Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	45.00	16.820	28.120	4,61,13,988.00
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	10.00	3.750	4.063	66,62,913.70
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	12.00	4.50	4.500	73,79,550.00
5	STAGE-V :RCC Paraphet Wall .6m ht ,RCCdeck slabshuttering and steel Reinforcement soiing 100mm tk, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.00	0.00	0.00	0.00
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.50	0.00	1.00	16,39,900.00
7	STAGE-VII : CABLE DUCTCum Drain-465.6m,pole foundation-24 nos-Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 in Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.50	0.00	0.00	0.00
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench ties	6.00	0.00	0.00	0.00
9	STAGE-IX : Mislaneous Ciraning & Handing Over	1.00	0.00	0.00	0.00
	TOTAL	100.00	30.07	42.68	6,99,95,851.70

NOTE The Total Wall Upto Flag Point is for a length of 465.6 RM Covering 32 Spans of 14.55 RM each. Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Executive Engineer

Junior Engineer

Assistant Engineer

Contractor

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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500

Analysis for percentage of Work done (4th RA Bill)

1.0 Stage- II

Approved percentage
(For 32 No., of Span of Sea Wall) = 45%

Total No., of Span Work done upto 4th RA Bill = 20

Percentage of Work Done for 4th RA Bill Under Stage -II = 45%

2.0 Stage- II

Total No., of Steel Reinforcement fabricated for Sea Wall = 25

Total No., of Span Work done upto 4th RA Bill = 20 x 20 = 28.120 %

Percentage of Work Done for 4th RA Bill Under Stage -II = $\frac{45\%}{32}$ x 32

2.0 Stage- III

Approved percentage
(For 32 No., of Span of Sea Wall) = 10%

Total No., of Span Work done upto 4th RA Bill = 13

Percentage of Work Done for 4th RA Bill Under Stage -III = $\frac{10\%}{32}$ x 13 = 4.063 %

3.0 Stage- IV

Approved percentage
(For 32 No., of Span of Sea Wall) = 12%

Total No., of Span Work done upto 4th RA Bill = 12

Percentage of Work Done for 4th RA Bill Under Stage -IV = $\frac{12\%}{32}$ x 12 = 4.500 %

Contractor

Engineer-In-Charge

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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MATERIAL LAYING AT SITE (4th RA Bill)

Agreement No: 01(PBSPL) of 2022-2023

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting Street Furniture, Service Core

Name of Contractor : M/s Surendra Infrastructure (P) Ltd.

Ser No	Sch Ref No.	Description of Item of work	A/U	Qty Brought at Site	Qty Consumption (upto Last RA Bill)	Qty Consumption (upto 4th RA Bill)	Balance Qty at site	Rate as per CA	Rate as per Justfication	Rate Allowed %	Rate Allowed	Amount	Remark
1	As per Design	10 mm dia TMT Bars	Kg	69920.00	14441.00	7285.00	48194.00	-	70.32	65%	45.71	2202851.35	
2	As per Design	12 mm dia TMT Bars	Kg	79600.00	23770.00	12305.00	43525.00	-	70.32	65%	45.71	1989440.70	
3	As per Design	16 mm dia TMT Bars	Kg	50300.00	15157.00	7945.00	27198.00	-	70.32	65%	45.71	1243166.18	
4	As per Design	20 mm dia TMT Bars	Kg	5020.00	2445.00	1265.00	1310.00	-	67.01	65%	43.56	57059.02	
		Total Qty =		204840.00	55813.00	28800.00	120227.00				Total	5492517.25	
											Say Rs	54,92,518.00	

Contractor

Engineer-In-Charge

Information Revealed Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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500

Ref. Page No: 01 to 06 of TCMB.

Authority:- 01 (PBSPL) of 2022-23.

N.O.W :- Marina Road. Resurfacing, with Uniform carriage way, walking track, Street lighting Street furniture, Service core trenching and landscaping.

S.W:- Strengthening & c/p/ sea wall.

Agency :- M/S Surendra Infrastructure (P) Ltd.

Total Gross value of work done → 7,93,47,878/-
Already paid upto 3rd RA Bill → 587,45,814/-
Gross value of- 4th RA Bill → 206,02,064/-

Deal

(i) S/deposit @ 2.5% on (69995852) → 17,49,897/-
Already deducted upto 3rd RA Bill → 12,34,845/-
Now to be deducted → 515052/-

(ii) I/Tax @ 2% on Secured Adv. Stage-I II, III, IV & VI less Rs 31,52,715/- Adj. from secured Adv. paid (6199311 (-) 706793) + (8199500) + 46113988 + 6662914 + 7379550 + 1639900 = 75488370/- excluding mob Advance → 15,09,767/-

Already deducted upto 3rd RA Bill → 11,11,862/-
Now to be deducted → 397905/-

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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(iii) Labour cess @ 1% on (6999585 2) → 699959/-
Already deducted upto 3rd RA Bill → 493938/-
Now to be deducted → 206021/-

(iv) IDS on GST @ 2% on Secured Adv. & Stage-I, II, III, IV & VI Jobs Rs. 31,52,715/- Adj. from Secured Adv. paid (6199311 (-) 706793) + (8199500) + 4611 3988 + 6662914 + 4379550 + 1639900 = 75488370/- excluding mobilization Adv. → 1509767/-

Already deducted upto 3rd RA Bill → 1111862/-
Now to be deducted → 397905/-

(v) Recovery material lying at site → 706793/-

(vi) Mobilization Advance recovery → 2186536/-
(8199500/15BG = Rs. 546634.00 x 4)

4410212/-

Total Deduction → ~~4093934~~ 16191852/-

Net payable Amount → ~~11127624~~/-

4th RA Bill in respect of M/s Surendra Infrastructure (P) Ltd against Agr. No: 1 (PBSPL) of 2022-23 is passed for ₹ = 20602064/- (Rupee Two crores six Lakhs two thousand and sixty four only)

Executive Engineer - III (Works)
Municipal Council
Port Blair

payment released for ₹ = ~~11127624~~/- 16191852/-

लेखा अधिकारी
ACCOUNTS OFFICER - III
नगरपालिका परिषद
Municipal Council
पोर्ट ब्लेयर / Port Blair

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Division:- Executive Engineer-III (SWM/MC), Port Blair Municipal Council, Port Blair

(5th R.A BILL)

COMPUTERIZED MEASUREMENT BOOK

(ABSTRACT)

CMB No:- 155 /EE-III/SWM/MC/2023-24.

Name of Work: - Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scalping. Strengthening & Construction of Sea Wall.

Name of Contractor: - M/s. Surendra Infrastructure (P) Ltd.

Agreement No.: - 01(PBSPL) of 2022-2023

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Certified that this Computerized measurement book bearing no. 155/EE-III/SWM/MC/2023-24 contains 06 leaves serially numbered from pages 01 to 06 and two blank pages without any damage.

Signature of Contractor	Signature of Assistant Engineer	Signature of Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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REVIEW NOTES

Date	Pages of recording measurements subjected to test checks	Value of mensurement checked	Result of the exercise checked	Dated initials and designation of the checking officer
27/3/24	(4)			
27/3/24	(4)	9279374.00	Satisfactory	27/3/24
27/03/24	(20)	18,60,000.00	satisfactory	27/03/24

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Abstract of 5th RA Bill

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scaping, Strengthening & Constructrion of Sea Wall

Agreement No:- 01(PBSPL) of 2022-2023

Agency : M/s Surendra Infrastructure (p) Ltd.

Date of Commencement of Work : 17.03.2023

Date of Completion : In Progress

CMB No. 155 /EE-III/SWM/MC/2023-24

Total Work Done Amount	
Stage -I	
Preparation of Architectural and structural drawings & design	81,99,500.00
Stage -II	
Earth work Exacavation for Foundation . Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement (footing ,wall , counter fort)	5,53,46,625.00
Stage -III	
RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	1,22,99,250.00
Stage -IV	
RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	1,10,69,325.00
Stage -VI	
STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	16,39,900.00
T/checked @ 50% of work done T/C @ 100% of work done 27/05/24	**8,85,54,600.00**
Total Work Done Amount =	**8,85,54,600.00**
27/5/24 Paid in Materials Laying at site (steel)	93,52,026.00
Total Gross Value =	**9,79,06,626.00**
Less amount already paid 1st RA Bill (-)	1,75,51,526.00
Less amount already paid 2nd RA Bill (-)	1,31,19,200.00
Less amount already paid 3rd RA Bill (-)	2,80,75,088.00
Less amount already paid 4th RA Bill (-)	2,06,02,064.00
Amount of This Bill =	***1,85,58,748.00***

RECOVERY DETAILS			
i)	Security Deposit (Gross Amount of work done amount) @ 2.5% on Rs.**8,85,54,600.00**	22,13,865.00	
	Less already recovered on 1st RAR	2,04,988.00	
	Less already recovered on 2nd RAR	3,27,980.00	
	Less already recovered on 3rd RAR	7,01,877.00	4,63,969/-
	Less already recovered on 4th RAR	5,15,052.00	
	Now to be recovered	*4,63,968.00*	*4,63,968.00*

Information Revealed Under RTI Act 2005 PIO, Executive Engineer SVPMC

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ii)	Income Tax (Gross Amount of work done amount) @ 2% on Rs.8,85,54,600.00	18,59809/= 17,71,092.00	
	Less already recovered on 1st RAR	3,51,031.00	
	Less already recovered on 2nd RAR	2,50,246.00	
	Less already recovered on 3rd RAR	5,10,585.00	
	Less already recovered on 4th RAR	397907 4,12,042.00	350042/=
	Now to be recovered	*2,47,188.00*	*2,47,188.00*
iii)	Labour welfare cess (Gross Amount of work done amount)@ 1% on Rs. 8,85,54,600.00	8,85,546.00	
	Less already recovered on 1st RAR	81,995.00	
	Less already recovered on 2nd RAR	1,31,192.00	
	Less already recovered on 3rd RAR	2,80,751.00	
	Less already recovered on 4th RAR	2,06,021.00	
	Now to be recovered	*1,85,587.00*	*1,85,587.00*
iv)	GST @ 2% on Base Value of Gross Amount	18,59809/=	
	UTGST @ 1% on 8,85,54,600.00	8,85,546.00	
	Less already recovered on 1st RAR	1,75,515.50	
	Less already recovered on 2nd RAR	1,25,123.00	
	Less already recovered on 3rd RAR	2,55,292.50	
	Less already recovered on 4th RAR	397907 2,06,021.00	350042/=
	Now to be recovered	*1,23,594.00*	*1,23,594.00*
v)	CGST @ 1% on 8,85,54,600.00	8,85,546.00	
	Less already recovered on 1st RAR	1,75,515.50	
	Less already recovered on 2nd RAR	1,25,123.00	
	Less already recovered on 3rd RAR	2,55,292.50	
	Less already recovered on 4th RAR	2,06,021.00	
	Now to be recovered	*1,23,594.00*	*1,23,594.00*
vi)	Material Laying at Site (Recovery)	*49,16,155.00*	
	Less already recovered on 2nd RAR	*6,06,875.00*	
	Less already recovered on 3rd RAR	*25,45,840.00*	
	Less already recovered on 4th RAR	*7,06,793.00*	
	Now to be recovered	*10,56,647.00*	*10,56,647.00*
vii)	Mobilization advance (Recovery)		
	4th Due (Against BGB No. 11640100017918 BGB Amount : 6,01,300.00)	5,46,634.00	
	4th Due (Against BGB No. 11640100017917 BGB Amount : 6,01,300.00)	5,46,634.00	
	4th Due (Against BGB No. 11640100017916 BGB Amount : 6,01,300.00)	5,46,634.00	
	4th Due (Against BGB No. 11640100017915 BGB Amount : 6,01,300.00)	5,46,634.00	
	Now to be recovered	*21,86,536.00*	*21,86,536.00*

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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4592823/-

Total Recovery		43,87,114.00
Net Total.....		1,41,71,634.00
Net Amount Payable	*Rs.*	*1,41,71,634.00*
Net Amount in Words	(Rupees One Crore Thirty Fourty One Lakhs Seventy One Thousand Six Hundred Thirty Four only)	

Certified that :

1 The work has been executed as per specification, terms and condtions of the agreement
2 No T&P has been isued from the Department
3 Own arrangements for water has been made by the contractor
4 Requisite Technical staff has been employed as per agreement
5 Upto date recoveries have been effected in this bill
6 All mandatory test have been conducted & result found satisfactory
7 No labour complaint received till date of preparation of this bill

Signature of Contractor

Signature of AE

Signature of EE

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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YARD STICK PERCENTAGES

5th RA Bill

NAME OF WORK :	Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
CA NO	01 (PBSPL) of 2022-2023
CA AMOUNT	16,39,90,000.00
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% APPROVED	% EXECUTED AS LAST PER RAR	% EXECUTED AS PER THIS RAR	AMOUNT
1	2	3	4		5
1	STAGE-I :Preparation of Architectural and structural drawings and strucrural design claculation is approval by MIT/IIT	5.00	5.00	5.00	81,99,500.00
2	STAGE-II :Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	45.00	28.120	33.750	5,53,46,625.00
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	10.00	4.063	7.500	1,22,99,250.00
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	12.00	4.50	6.750	1,10,69,325.00
5	STAGE-V :RCC Paraphet Wall .6m ht ,RCCdeck slabshuttering and steel Reinforcement soiing 100mm tk, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.00	0.00	0.00	0.00
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.50	1.00	1.00	16,39,900.00
7	STAGE-VII : CABLE DUCTCum Drain-465.6m,pole foundation-24 nos Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 in Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.50	0.00	0.00	0.00
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench ties	6.00	0.00	0.00	0.00
9	STAGE-IX : Mislaneous Clraning & Handing Over	1.00	0.00	0.00	0.00
	TOTAL	100.00	42.68	54.00	8,85,54,600.00

NOTE The Total Wall Upto Flag Point is for a length of 465.6 RM Covering 32 Spans of 14.55 RM each. Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Contractor | Junior Engineer | Assistant Engineer | Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Analysis for percentage of Work done (5th RA Bill)

1.0 Stage- II

Approved percentage
(For 32 No., of Span of Sea Wall) = 45%

2.0 Stage- II

Total No., of Steel Reinforcement fabricated for Sea Wall = 30

Total No., of Span Work done upto 5th RA Bill = 24

Percentage of Work Done for 5th RA Bill Under Stage -II = $\frac{45\%}{32} \times 24$ = 33.750 %

2.0 Stage- III

Approved percentage
(For 32 No., of Span of Sea Wall) = 10%

Total No., of Span Work done upto 5th RA Bill = 24

Percentage of Work Done for 5th RA Bill Under Stage -III = $\frac{10\%}{32} \times 24$ = 7.500 %

3.0 Stage- IV

Approved percentage
(For 32 No., of Span of Sea Wall) = 12%

Total No., of Span Work done upto 5th RA Bill = 20

Percentage of Work Done for 5th RA Bill Under Stage -IV = $\frac{12\%}{32} \times 18$ = 6.750 %

Contractor

Engineer-In-Charge

Information Re
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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MATERIAL LAYING AT SITE (5th RA Bill)

Agreement No: 01(PBSPL) of 2022-2023

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting Street Furniture, Service Core

Name of Contractor : M/s Surendra Infrastructure (P) Ltd.

Ser No	Sch Ref No.	Description of Item of work	A/U	Qty Brought at Site	Qty Consumption (upto Last RA Bill)	Qty Consumption (5th RA Bill)	Balance Qty at site	Rate as per CA	Rate as per Justfication	Rate Allowed %	Rate Allowed	Amount	Remark
1	As per Design	10 mm dia TMT Bars	Kg	69920.00	21726.00	9843.60	38350.40	-	70.32	65%	45.71	1752920.08	
2	As per Design	12 mm dia TMT Bars	Kg	79600.00	36075.00	5828.76	37696.24	-	70.32	65%	45.71	1723019.74	
3	As per Design	16 mm dia TMT Bars	Kg	50300.00	23102.00	6355.80	20842.20	-	70.32	65%	45.71	952655.28	
4	As per Design	20 mm dia TMT Bars	Kg	5020.00	3710.00	1142.96	167.04	-	67.01	65%	43.56	7275.68	
		Total Qty =		204840.00	84613.00	23171.12	97055.88				Total	4435870.78	
											Say Rs	44,35,871.00	

Contractor

Engineer-In-Charge

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Ref:- page NO: 01 to 03 of TCNB

Authority :- 01(PBSPL.) of 2022-2023

N.o.W :- Marina Road restructuring with uniform cassion way walking track Street lighting, Street furniture, Service core trenching and landscape.

S.W: Strengthening & c/o Sea wall.

Agency :- M/s Surendra Infrastructure (P) Ltd.

Gross value of work done → 9,79,06,626/=

Already paid upto 4th RA Bill → 7,93,47,878/=

Gross value of 5th RA Bill → 1,85,58,748/=

Ded

(i) S/ deposit @ 25% on(8855400) → 2213866/=

Already deducted upto 4th RA Bill → 1749897/-

Now to be deducted → 463969/=

(ii) I/Tax @ 2% on Secured Adv. & Stage I, II, III, IV & VI less ₹= 38,59,508/- Adj. from Secured adv. paid (5492518 (-) 1056647) + (899500) + 5534625 + 12299250 + 11069325 + 1639900 = ₹= 92990471.00) excluding mobi. Adv. → 18,59,809/=

Already deducted upto 4th RA Bill → 1509767/=

Now to be deducted → 350042/=

(iii) Labour cess @ 1% on ₹= 8855400 → 885546/=

Already deducted upto 4th RA Bill → 699959/=

Now to be deducted → 185587/-

Information Revealed Under RTI Act 2005 PIO, Executive Engineer SVPMC

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(iv) TDS on GST @ 2% on Secured Adv. Stage I, II, III, IV & VI less ₹ = 38,59,508/-
Adj from secured adv. paid (5499258(-) 1056647) + (8199500) + 5534665 + 12299250 + 1106932.5 + 1639960 = 9399047/- excluding mobilization advance → 18,59,809/-

Already deducted upto 4th RA Bill → 1509767/-

Now to be deducted → 3,50,042/-

(v) Recovery material lying at site → 10,56,647/-

(vi) Mobilization Advance recovery → 3,186,536/-
(8199500/1536 = Rs. 546634.00 x 4)

Total Deduction → 4598833/-

Net payable Amount → 13965925/- = ~~3186536/-~~

5th RA Bill in respect of M/S Surendra Infrastructure (P) Ltd against Agt. No: 01 (PBSPL) of 2022-2023 is passed for ₹ = 1,85,58,748/- (Rupees One Crore eighty five thousand seven hundred and forty eight only) eight thousand seven hundred and forty eight only

Executive Engineer - III (WORKS)
Municipal Council
Port Blair

payment released for ₹ = 1,39,65,925/-

लेखा अधिकारी
ACCOUNTS OFFICER - III
नगरपालिका परिषद
Municipal Council
पोर्ट ब्लेयर / Port Blair

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Division:- Executive Engineer-III (SWM/MC), Port Blair Municipal Council, Port Blair

(6th R.A BILL)

COMPUTERIZED MEASUREMENT BOOK

(ABSTRACT)

CMB No:- /EE-III/SWM/MC/2023-24.

Name of Work: - Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scalping. Strengthening & Construction of Sea Wall.

Name of Contractor: - M/s. Surendra Infrastructure (P) Ltd.

Agreement No.: - 01(PBSPL) of 2022-2023

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

Scanned with OKEN Scanner

Certified that this Computerized measurement book bearing no. /EE-III/SWM/MC/2023-24 contains 06 leaves serially numbered from pages 01 to 06 and two blank pages without any damage.

Signature of Contractor	Signature of Assistant Engineer	Signature of Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

Scanned with OKEN Scanner

REVIEW NOTES

Date	Pages of recording measurements subjected to test checks	Value of measurement checked	Result of the exercise checked	Dated initials and designation of the checking officer
23/4/24	(4)	5278838.00	Satisfactory	23/4/24
23/4/24	(4)	10,55,767.60	Satisfactory	

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Abstract of 6th RA Bill

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scaping, Strengthening & Constructrion of Sea Wall.

Agreement No:- 01(PBSPL) of 2022-2023

Agency : M/s Surendra Infrastructure (p) Ltd.

Date of Commencement of Work : 17.03.2023

Date of Completion : In Progress

CMB No. 183 /EE-III/SWM/MC/2024-25

Total Work Done Amount		
Stage -I		
Preparation of Architectural and structural drawings & design		81,99,500.00
Stage -II		
Footing,RCC Wall upto 1.7m ht from footing shuttering and steel		5,99,59,663.70
Stage -III		
RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel		1,33,24,187.50
Stage -IV		
RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel		1,59,89,025.00
Stage -VI		
STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE		16,39,900.00
		- 9,91,12,276.20
	Total Work Done Amount =	9,91,12,276.00
	Paid in Materials Laying at site (steel)	93,52,026.00
	Total Gross Value =	10,84,64,302.00
Less amount already paid 1st RA Bill (-)		1,75,51,526.00
Less amount already paid 2nd RA Bill (-)		1,31,19,200.00
Less amount already paid 3rd RA Bill (-)		2,80,75,088.00
Less amount already paid 4th RA Bill (-)		2,06,02,064.00
Less amount already paid 5th RA Bill (-)		1,85,58,748.00
	Amount of This Bill =	***1,05,57,676.00***

RECOVERY DETAILS			
i)	Security Deposit (Gross Amount of work done	24,77,806.00	
	Less already recovered on 1st RAR	2,04,988.00	
	Less already recovered on 2nd RAR	3,27,980.00	
	Less already recovered on 3rd RAR	7,01,877.00	
	Less already recovered on 4th RAR	5,15,052.00	
	Less already recovered on 5th RAR	4,63,968.00	
	Now to be recovered	*2,63,941.00*	*2,63,941.00*

T/checked @ 50% of work done
Checked @ 100%
23/9/24

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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ii)	Income Tax (Gross Amount of work done amount)	19,82,246.00	
	Less already recovered on 1st RAR	3,51,031.00	
	Less already recovered on 2nd RAR	2,50,246.00	
	Less already recovered on 3rd RAR	5,10,585.00	
	Less already recovered on 4th RAR	4,12,042.00	
	Less already recovered on 5th RAR	2,47,188.00	
	Now to be recovered	*2,11,154.00*	*2,11,154.00*

iii)	Labour welfare cess (Gross Amount of work done amount)@ 1% on Rs. 9,91,12,276.00	9,91,123.00	
	Less already recovered on 1st RAR	81,995.00	
	Less already recovered on 2nd RAR	1,31,192.00	
	Less already recovered on 3rd RAR	2,80,751.00	
	Less already recovered on 4th RAR	2,06,021.00	
	Less already recovered on 5th RAR	1,85,587.00	
	Now to be recovered	*1,05,577.00*	*1,05,577.00*

iv)	GST @ 2% on Base Value of Gross Amount		
	UTGST @ 1% on 9,91,12,276.00	8,39,935.00	
	Less already recovered on 1st RAR	1,75,515.50	
	Less already recovered on 2nd RAR	1,25,123.00	
	Less already recovered on 3rd RAR	2,55,292.50	
	Less already recovered on 4th RAR	2,06,021.00	
	Less already recovered on 5th RAR	-11,489.00	
	Now to be recovered	*89,472.00*	*89,472.00*

v)	CGST @ 1% on 9,91,12,276.00	8,39,935.00	
	Less already recovered on 1st RAR	1,75,515.50	
	Less already recovered on 2nd RAR	1,25,123.00	
	Less already recovered on 3rd RAR	2,55,292.50	
	Less already recovered on 4th RAR	2,06,021.00	
	Less already recovered on 5th RAR	-11,489.00	
	Now to be recovered	*89,472.00*	*89,472.00*

vi)	Material Laying at Site (Recovery)	*53,66,828.00*	
	Less already recovered on 2nd RAR	*6,06,875.00*	
	Less already recovered on 3rd RAR	*25,45,840.00*	
	Less already recovered on 4th RAR	*7,06,793.00*	
	Less already recovered on 5th RAR	10,56,647.00	
	Now to be recovered	*4,50,673.00*	*4,50,673.00*

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vii)	Mobilization advance (Recovery)		
	5th Due (Against BGB No. 11640100018452 BGB Amount : 6,01,300.00)	5,46,634.00	
	5th Due (Against BGB No. 11640100018453 BGB Amount : 6,01,300.00)	5,46,634.00	
	5th Due (Against BGB No. 11640100018454 BGB Amount : 6,01,300.00)	5,46,634.00	
	5th Due (Against BGB No. 11640100018455 BGB Amount : 6,01,300.00)	5,46,634.00	
	Now to be recovered	*21,86,536.00*	*21,86,536.00*
	Total Recovery		33,96,825.00
	Net Total.....		71,60,851.00
	Net Amount Payable	*Rs.*	*71,60,851.00*
	Net Amount in Words	**(Rupees Seventy One Lakhs Sixty Thousand Eight Hundred Fifty One only)**	

Certified that :

1 The work has been executed as per specification, terms and condtions of the agreement
2 No T&P has been isued from the Department
3 Own arrangements for water has been made by the contractor
4 Requisite Technical staff has been employed as per agreement
5 Upto date recoveries have been effected in this bill
6 All mandatory test have been conducted & result found satisfactory
7 No labour complaint received till date of preparation of this bill

Signature of Contractor

Signature of AE

Signature of EE

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YARD STICK PERCENTAGES

6th RA Bill

NAME OF WORK :	Marine esplanade: Marine road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
RA NO	01 (PBSPL) of 2022-2023
RA AMOUNT	16,39,90,000.00
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% APPROVED	% EXECUTED AS LAST PER RAR	% EXECUTED AS PER THIS RAR	AMOUNT
1	2	3	4		5
1	STAGE-I :Preparation of Architectural and structural drawings and strucrural design claculation is approval by MIT/IIT	5.00	5.00	5.00	81,99,500.00
2	STAGE-II :Earth work Excavation for Foundation , Pcc 1:4:8, RCC M30 In Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	45.00	33.750	36.563	5,99,59,663.70
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	10.00	7.500	8.125	1,33,24,187.50
4	STAGE-IV :RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	12.00	6.75	9.750	1,59,89,025.00
5	STAGE-V :RCC Paraphet Wall .6m ht ,RCCdeck slabshuttering and steel Reinforcement soling 100mm tk, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.00	0.00	0.00	0.00
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.50	1.00	1.00	16,39,900.00
7	STAGE-VII : CABLE DUCTCum Drain-465.6m,pole foundation-24 nos Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 In Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.50	0.00	0.00	0.00
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench tles	6.00	0.00	0.00	0.00
9	STAGE-IX : Mislaneous Ciraning & Handing Over	1.00	0.00	0.00	0.00
	TOTAL	100.00	54.00	60.44	9,91,12,276.20

NOTE The Total Wall Upto Flag Point is for a length of 465.6 RM Covering 32 Spans of 14.55 RM each. Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Contractor | Junior Engineer | Assistant Engineer (Road/SWM) | Executive Engineer-III (Road/SWM)

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Analysis for percentage of Work done (6th RA Bill)

1.0 Stage- II

Approved percentage
(For 32 No., of Span of Sea Wall) = 45%

2.0 Stage- II

Total No., of Steel Reinforcement fabricated for Sea Wall = 30

Total No., of Span Work done upto 5th RA Bill = 26

Percentage of Work Done for 6th RA Bill Under Stage -II = $\frac{45\%}{32} \times 26$ = 36.563 %

2.0 Stage- III

Approved percentage
(For 32 No., of Span of Sea Wall) = 10%

Total No., of Span Work done upto 5th RA Bill = 26

Percentage of Work Done for 5th RA Bill Under Stage -III = $\frac{10\%}{32} \times 26$ = 8.125 %

3.0 Stage- IV

Approved percentage
(For 32 No., of Span of Sea Wall) = 12%

Total No., of Span Work done upto 5th RA Bill = 26

Percentage of Work Done for 5th RA Bill Under Stage -IV = $\frac{12\%}{32} \times 26$ = 9.750 %

Contractor

Engineer-In-Charge

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Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Agreement No: 01(PBSPL) of 2022-2023

MATERIAL LAYING AT SITE (6th RA Bill)

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting Street Furniture, Service Core

Name of Contractor : M/s Surendra Infrastructure (P) Ltd.

Ser No	Sch Ref No.	Description of Item of work	A/U	Qty Brought at Site	Qty Consumption (upto Last RA Bill)	Qty Consumption (6th RA Bill)	Balance Qty at site	Rate as per CA	Rate as per Justfication	Rate Allowed %	Rate Allowed	Amount	Remark
1	As per Design	10 mm dia TMT Bars	Kg	69920.00	31569.60	2564.37	35786.03	-	70.32	65%	45.71	1635707.86	
2	As per Design	12 mm dia TMT Bars	Kg	79600.00	41903.76	4396.63	33299.61	-	70.32	65%	45.71	1522058.57	
3	As per Design	16 mm dia TMT Bars	Kg	50300.00	29457.80	2739.65	18102.55	-	70.32	65%	45.71	827431.40	
4	As per Design	20 mm dia TMT Bars	Kg	5020.00	4852.96	167.04	0.00	-	67.01	65%	43.56	0.00	
		Total Qty =		**204840.00**	**107784.12**	**9867.69**	**87188.19**				Total	3985197.83	
											Say Rs	39,85,198.00	

Contractor

Engineer-In-Charge

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Ref page No: 01 to 06 of TCMB.

Authority :→ 01 (PBSPL) of 2022-2023
W.O. No :- Mantra road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core, trenching and land scaping
& Strengthening & construction of Seawall

Agency :- M/S Surendra Infrastructure (P) Ltd.

Total Gross value of work done → 10,84,64,303/-
paid up to 5th RA Bill → 97906626/-

Gross value of 6th RA Bill → 1,05,57,676/-

Ded
(i) S/deposit @ 2.5% on 99,11,276/- → 2477808/-
Already deducted up 5th RA Bill → 2213866/-
Now to be deducted → 263942/-

(ii) I Tax @ 2% on Secured adv. & Stage- I, II, III, IV & VI less Rs 4916155/- Adj. from secured Adv. paid (4435871 (-) 450673) + (8199500 + 59959663-70 + 13324187·50 + 15989025 + 16399150 = ₹ 1,03,97,474/-) excluding Mob-Adv. → 2061949/-
Already deducted up to 5th RA Bill → 1859809/-
Now to be deducted → 202140/-

(iii) Labour cess @ 1% on ₹ = 99,11,276/- → 991123/-
Already deducted up to 5th RA Bill → 885546/-
Now to be deducted → 105577/-

Cont-II

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(iv) TDS on (GST @ 2)- on Secured Adv. for Stage-I, II, III, IV & IV less ₹=4916155/- Adj- from secured Adv paid (14435971 (-)450673)+(8109500+59959663.70+ 13324187.50+15989025+1639400= ₹=10309747400) excluding Mob. Adv. → 2061949/-

Already deducted upto 5th RA Bill → 1859809/-

Now to be deducted → 202140/-

(v) Recovery material lying at site → 450673/-

(vi) Mobilization advance recovery (8109500/15 Bill- Rs 5466840.00x4) → 2186536/-

Total deduction ₹= 3411058/-

Net payable Amount ₹= 7146668/-

6th RA Bill in respect of M/s Swastika Infrastructure (P) Ltd against Agr. No: 01(PBSPL) of 2022-2023 is passed for ₹= 1,05,57,676/- (Rupees one crore five lakhs fifty seven thousand six hundred seventy six only)

Executive Engineer -III (Works)
Municipal Council
Port Blair

payment released for ₹= 7146668/-

ACCOUNTS OFFICER -III
नगरपालिका परिषद
Municipal Council
पोर्ट ब्लेयर / Port Blair

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Under RTI Act 2005
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Division:- Executive Engineer-III (SWM/MC), Port Blair Municipal Council, Port Blair

(7th R.A BILL)

COMPUTERIZED MEASUREMENT BOOK

(ABSTRACT)

CMB No:- 209 /EE-III/SWM/MC/2024-25.

Name of Work: - Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scalping. Strengthening & Construction of Sea Wall.

Name of Contractor: - M/s. Surendra Infrastructure (P) Ltd.

Agreement No.: - 01(PBSPL) of 2022-2023

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SVPMC

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Certified that this Computerized measurement book bearing no.209/EE-III/SWM/MC/2024-25 contains 06 leaves serially numbered from pages 01 to 06 and two blank pages without any damage.

Signature of
Contractor

Signature of
Assistant Engineer

Signature of
Executive Engineer

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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REVIEW NOTES

Date	Pages of recording measurements subjected to test checks	Value of measurement checked	Result of the exercise checked	Dated initials and designation of the checking officer
28/06/24	(4)	1,34,42,325	Satisfactory	
28/06/24	(4)	32,79,800.00	Satisfactory	

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Abstract of 7th RA Bill

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Land Scaping. Strengthening & Constructrion of Sea Wall.

Agreement No:- 01(PBSPL) of 2022-2023

Agency : M/s Surendra Infrastructure (p) Ltd.

Date of Commencement of Work : 17.03.2023

Date of Completion : In Progress

CMB No. 209 /EE-III/SWM/MC/2024-25

Total Work Done Amount	
Stage -I	
Preparation of Architectural and structural drawings & design	81,99,500.00
Stage -II	
Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement (footing ,wall , counter fort)	7,37,95,500.00
Stage -III	
RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	1,63,99,000.00
Stage -IV T/checked 50% of this bill	
RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	1,59,89,025.00
Stage -V	
RCC Paraphet Wall .6m ht ,RCCdeck slabshuttering and steel Reinforcement soiing 100mm tk, pcc 1:4;8 below Deck slab,paver 50% Checked	65,59,600.00
Stage -VI	
STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	16,39,900.00
	12,25,82,525.00
Total Work Done Amount =	**12,25,82,525.00**
Paid in Materials Laying at site (steel)	93,52,026.00
Paid in Materials Laying at site (Electrical)	34,14,400.00
Total Gross Value =	**13,53,48,951.00**
Less amount already paid 1st RA Bill (-)	1,75,51,526.00
Less amount already paid 2nd RA Bill (-)	1,31,19,200.00
Less amount already paid 3rd RA Bill (-)	2,80,75,088.00
Less amount already paid 4th RA Bill (-)	2,06,02,064.00
Less amount already paid 5th RA Bill (-)	1,85,58,748.00
Less amount already paid 6th RA Bill (-)	1,05,57,676.00
Amount of This Bill =	*2,68,84,649.00*

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Information Received Under RTI Act 2005 PIO, Executive Engineer SVPMC

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	RECOVERY DETAILS		
i)	Security Deposit (Gross Amount of work done	30,64,563.00	30,64,564/-
	Less already recovered on 1st RAR	2,04,988.00	
	Less already recovered on 2nd RAR	3,27,980.00	
	Less already recovered on 3rd RAR	7,01,877.00	
	Less already recovered on 4th RAR	5,15,052.00	
	Less already recovered on 5th RAR	4,63,968.00	463969/-
	Less already recovered on 6th RAR	2,63,941.00	263942/-
	Now to be recovered	*5,86,757.00*	*5,86,757.00*
ii)	Income Tax (Gross Amount of work done amount)	24,51,651.00	2560294/-
	Less already recovered on 1st RAR	3,51,031.00	
	Less already recovered on 2nd RAR	2,50,246.00	
	Less already recovered on 3rd RAR	5,10,585.00	
	Less already recovered on 4th RAR	4,12,042.00	397905/-
	Less already recovered on 5th RAR	2,47,188.00	350042/-
	Less already recovered on 6th RAR	2,11,154.00	202140/-
	Now to be recovered	*4,69,405.00*	*4,69,405.00*
iii)	Labour welfare cess (Gross Amount of work done amount)@ 1% on Rs.13,93,91,500.00	12,25,826.00	1225825/-
	Less already recovered on 1st RAR	81,995.00	
	Less already recovered on 2nd RAR	1,31,192.00	
	Less already recovered on 3rd RAR	2,80,751.00	991123/-
	Less already recovered on 4th RAR	2,06,021.00	
	Less already recovered on 5th RAR	1,85,587.00	
	Less already recovered on 6th RAR	1,05,577.00	234702/-
	Now to be recovered	*2,34,703.00*	*2,34,703.00*
iv)	GST @ 2% on Base Value of Gross Amount		
	UTGST @ 1% on 13,93,91,500.00	10,38,835.00	2560294/-
	Less already recovered on 1st RAR	1,75,515.50	
	Less already recovered on 2nd RAR	1,25,123.00	
	Less already recovered on 3rd RAR	2,55,292.50	
	Less already recovered on 4th RAR	2,06,021.00	
	Less already recovered on 5th RAR	-11,489.00	2061949/-
	Less already recovered on 6th RAR	89,472.00	
	Now to be recovered	*1,98,900.00*	*1,98,900.00*
v)	CGST @ 1% on 13,93,91,500.00	10,38,835.00	
	Less already recovered on 1st RAR	1,75,515.50	
	Less already recovered on 2nd RAR	1,25,123.00	
	Less already recovered on 3rd RAR	2,55,292.50	
	Less already recovered on 4th RAR	2,06,021.00	
	Less already recovered on 5th RAR	-11,489.00	
	Less already recovered on 6th RAR	89,472.00	498345/-
	Now to be recovered	*1,98,900.00*	*1,98,900.00*

586756/-

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Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC
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vi)	Material Laying at Site (Recovery)		
	Less already recovered on 2nd RAR	73,34,237.00	
	Less already recovered on 3rd RAR	6,06,875.00	
	Less already recovered on 4th RAR	25,45,840.00	
	Less already recovered on 5th RAR	7,06,793.00	
	Less already recovered on 6th RAR	10,56,647.00	
	Now to be recovered	4,50,673.00	
		19,67,409.00	*19,67,409.00*
vii)	Mobilization advance (Recovery)		
	6th Due (Against BGB No. 11640100017911 BGB Amount : 6,01,300.00)	5,46,636.00	
	6th Due (Against BGB No. 11640100017912 BGB Amount : 6,01,300.00)	5,46,636.00	
	6th Due (Against BGB No. 11640100017913 BGB Amount : 6,01,300.00)	5,46,636.00	
	6th Due (Against BGB No. 11640100017914 BGB Amount : 6,01,300.00)	5,46,636.00	
	Now to be recovered	*21,86,544.00*	*21,86,544.00*
	Total Recovery	5972101/-	58,42,618.00
	Net Total.....	20912548/-	2,10,42,031.00
	Net Amount Payable	*Rs.* Nine	*2,10,42,030.00*
	Net Amount in Words	**(Rupees Two Crore ~~Ten~~ Lakhs ~~Forty Two~~ Thousand Thirty ~~One~~ only)** Two, nine five hundred forty eight only.	

Certified that :

1 The work has been executed as per specification, terms and condtions of the agreement
2 No T&P has been isued from the Department
3 Own arrangements for water has been made by the contractor
4 Requisite Technical staff has been employed as per agreement
5 Upto date recoveries have been effected in this bill
6 All mandatory test have been conducted & result found satisfactory
7 No labour complaint received till date of preparation of this bill

Signature of Contractor **Signature of AE**

Signature of EE

Information Revealed Under RTI Act 2005 PIO, Executive Engineer SVPMC

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YARD STICK PERCENTAGES

7th RA Bill

NAME OF WORK :	Marine esplanade: Marina road restructuring with uniform carriage way, walking track, street lighting, street furniture, service core trenching and land scaping.
R/A NO	01 (PBSPL) of 2022-2023
R/A AMOUNT	16,39,90,000.00
NAME OF CONTRACTOR	M/s. Surendra Infrastructure (P) Ltd.

SL NO	DESCRIPTION OF WORK	% APPROVED	% EXECUTED AS LAST PER RAR	% EXECUTED AS PER THIS RAR	AMOUNT
1	2	3	4		5
1	STAGE-I Preparation of Architectural and structural drawings and structural design claculation is approval by MIT/IIT	5.00	5.00	5.00	81,99,500.00
2	STAGE-II Earth work Exacavation for Foundation , Pcc 1:4:8, RCC M30 in Footing,RCC Wall upto 1.7m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	45.00	36.563	45.000	7,37,95,500.00
3	STAGE-III:RCC Wall upto 1.7m to 2.9m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	10.00	8.125	10.000	1,63,99,000.00
4	STAGE-IV RCC Wall upto 2.9m to 4.1m ht from footing shuttering and steel Reinforcement(footing ,wall , counter fort)	12.00	9.75	9.750	1,59,89,025.00
5	STAGE-V :RCC Paraphet Wall ,6m ht ,RCCdeck slabshuttering and steel Reinforcement soiing 100mm tk, pcc 1:4:8 below Deck slab,paver block,FRB hand rail	15.00	0.00	4.00	65,59,600.00
6	STAGE-VI : Gate column ,Earth work Excavation, pcc column shuttering and reinforcemnt,plastering , painting ,MS GATE	2.50	1.00	1.00	16,39,900.00
7	STAGE-VII : CABLE DUCTCum Drain-465.6m,pole foundation-24 nos-Earth work Excavation for Foundation , Pcc 1:4:8, RCC M15 in Footing,RCC Wall ,benches Foundation ,12mm plaster in cm 1:4	3.50	0.00	0.00	-
8	STAGE-VIII : Electric poles, Smart poles , laying of cables with DWC pipe, Bench ties	6.00	0.00	0.00	-
9	STAGE-IX : Mislaneous Clraning & Handing Over	1.00	0.00	0.00	-
	TOTAL	100.00	60.44	74.75	12,25,82,525.00

NOTE The Total Wall Upto Flag Point is for a length of 465.6 RM Covering 32 Spans of 14.55 RM each. Thus for one span the Yard Stick percentage will accordingly get divided for total length divided by number of span.

Contractor

Junior Engineer

Assistant Engineer (Road/SWM)

Executive Engineer-III (Road/SWM)

Information Revealed Under RTI Act 2005 PIO, Executive Engineer SVPMC

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Analysis for percentage of Work done (7th RA Bill)

.0 Stage- II

Approved percentage
(For 32 No., of Span of Sea Wall) = 45%

.0 Stage- II

Total No., of Steel Reinforcement fabricated for Sea Wall = 32

Total No., of Span Work done upto 5th RA Bill = 32

Percentage of Work Done for 6th RA Bill Under Stage -II = $\frac{45\%}{32} \times 32$ = 45.000 %

2.0 Stage- III

Approved percentage
(For 32 No., of Span of Sea Wall) = 10%

Total No., of Span Work done upto 5th RA Bill = 32

Percentage of Work Done for 5th RA Bill Under Stage -III = $\frac{10\%}{32} \times 32$ = 10.000 %

3.0 Stage- IV

Approved percentage
(For 32 No., of Span of Sea Wall) = 12%

Total No., of Span Work done upto 5th RA Bill = 26

Percentage of Work Done for 5th RA Bill Under Stage -IV = $\frac{12\%}{32} \times 26$ = 9.750 %

Contractor

Engineer-In-Charge

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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MATERIAL LAYING AT SITE (7th RA Bill)

Agreement No: 01(PBSPL) of 2022-2023

Name of Work : Marina Road Restructuring with Uniform Carriage Way, Walking Track, Street Lighting Street Furniture, Service Core

Name of Contractor : M/s Surendra Infrastructure (P) Ltd.

Ser No	Sch Ref No.	Description of Item of work	A/U	Qty Brought at Site	Qty Consumption (upto Last RA Bill)	Qty Consumption (7th RA Bill)	Balance Qty at site	Rate as per CA	Rate as per Justfication	Rate Allowed %	Rate Allowed	Amount	Remark
1	As per Design	10 mm dia TMT Bars	Kg	69920.00	34133.97	11465.00	24321.03	-	70.32	65%	45.71	1111665.64	
2	As per Design	12 mm dia TMT Bars	Kg	79600.00	46300.39	18879.00	14420.61	-	70.32	65%	45.71	659137.24	
3	As per Design	16 mm dia TMT Bars	Kg	50300.00	32197.45	12699.00	5403.55	-	70.32	65%	45.71	246985.46	
4	As per Design	20 mm dia TMT Bars	Kg	5020.00	5020.00	0.00	0.00	-	67.01	65%	43.56	0.00	
											Total	2017788.34	
		Total Qty =		204840.00	117651.81	43043.00	44145.19				Say Rs	20,17,789.00	

Engineer-In-Charge

Contractor

Information Under RTI Act, 2005
PIO, Executive Engineer
SVPMC

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MATERIAL LAYING AT SITE (ELECTRICAL)

Agreement No: 01/SE/PBMC/PBSPL/2021-2022

Name of Work : Marine esplanade : Marina road restructuring with uinform carriage way , walking track, street lighting, street furniture, service core trenching and landscaping.

Name of Contractor : M/s Surendra Infrastructure (P) Ltd.

Ser No	Sch Ref No.	Description of Item of work	A/U	Qty Brought at Site	Rate as per CA	Rate as per Justfication	Rate Allowed%	Rate Allowed	Amount	Remark
1	1.09	SOP CID 8 M BOD	Nos	25.00	-	90000.00	65%	58500.00	1462500.00	
2	1.09	SLE PT 75W-VEGA (TM) VI	Nos	25.00	-	57000.00	65%	37050.00	926250.00	
3	1.09	SLE PT 40W-VEGA (TM) VI	Nos	25.00	-	48750.00	65%	31687.50	792187.50	
4	1.09	4 CORE X16 SQMM A2XFY	Mtr	496.00	-	399.00	65%	259.35	128637.60	
4	1.09	DWC PIPE 50MM/38MM	Mtr	504.00	-	320.00	65%	208.00	104832.00	
								Total	3414407.10	
								Say Rs	34,14,400.00	

Contractor

Engineer-In-Charge

Information Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Ref. Page No. 01 to 03 of THB.

Authority :- 01 (PBSPL) of 2022-2023.

N.O.W :- Marina, Road Restructuring with Uniform Carriage way walking Track, Street Lighting, Street Furniture Service cone Trenching and Land Scalping Strengthening & construction of Sea wall.

Agency :- 01 (PBSPL) of 2022-2023.

Total Gross value of work done	→	13,53,48,951/-
Already paid up-to 6th RA Bill	→	10,84,64,302/-
Gross value of 7th RA Bill	→	2,68,84,649/-

Deal

(i) S/deposit @ 2.5% on (12,25,82,525/-) → 30,64,564/-
Already deducted up-to 6th RA Bill → 24,77,808/-
Now to be deducted (Rs. 2,34,70,249/-) → 5,86,756/-
(2,68,84,69.00 (-) 34,14,400.00) (i.e Gross Amount of 7th RA Bill - Secured Adv. for material Laying at site (Electrical)

(ii) I Tax @ 2% on Secured Adv (for Steel) Secured Adv. (for electrical) & Stage-I, Stage-II Stage-III, Stage-IV Stage-V, & Stage-VI less ₹ 5366828/- Adjusted from Secured adv. paid (3985198 (-) 1967409) + (3199500 + 13795500 + 16399000 + 1598925 + 6559600 + 1639900 + 3414400) = 1280,14,714.00) excluding mobilization Advance. → 25,60,294/-
Already deducted up-to 6th RA Bill → 20,61,949/-
Now to be deducted in 7th RA Bill → 498,345/-
Adj. of ₹ 29,348/- towards TDS Secured Adv. (steel) received in this bill (i.e Rs. 534,693/- (-) 29,348/-

Information Furnished Under RTI Act 2005
PIO, Executive Engineer SVPMC
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(iii) Labour cess @ 1% on (12,25,89,595/-) → 12,25,825/-
Already deducted upto 6th RA Bill → 9,91,183/-
Now to be deducted in 7th RA Bill → 2,34,702/-
on ₹ = 2,34,70,249/- (Rs. 26884699 (-) 34,14,400) (ie Gross Amount of 7th RA Bill - Secured Adv. For material laying at-Site (Electrical))

(iv) TDS on GST @ 2% on Secured Adv. → 85,60,294/-
(for Steel) Secured Adv. (for Electrical)
Stage-I, Stage-II, Stage-III, Stage-IV
Stage-V & Stage-VI less ₹ = 5366888/-
Adj - from Secured Advance Paid.
(3985198 (-) 1967409) + (81,99,500 +
4,37,95,500 + 16399000 + 15989025 +
65,59,600 + 16399000 + 3444400)
= Rs. 12,80,14,714) excluding
mobilization Advance.
Already deducted upto 6th RA Bill → 80,61,949/-
Now to be recovered in 7th RA → 4,98,345/-
Bill (less Adjustment of ₹ 39,348/- towards TDS on GST from Secured Adv. (For Steel) recovered in this bill ie Rs. 537693/- (-) Rs. 39,348/-

(v) Recovery of material laying at-Site (Steel) → 1,967,409/-

(vi) mobilization Advance Recovery → 21,86,544/-
(81,99,500/- 15% = Rs. 5466375 × 4)

Total Deduction → 59,72,101/-

Net payable Amount → 2,09,12,548/-

Information Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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4th RA Bill in respect of M/s Surendra Infrastructure (P) Ltd. against Agr. No. 01 (PBSPL) of 2022-2023 is passed for ₹= 2,68,84,649/- (Rupees Two crores sixty eight lakhs eighty four thousand six hundred forty nine only).

Executive Engineer – III (NOC)
Municipal Council
Port Blair

payment released for ₹= 20912548/-

12/9/23

लेखा अधिकारी
ACCOUNTS OFFICER – III
नगरपालिका परिषद
Municipal Council
पोर्ट ब्लेयर / Port Blair

Information Revealed
Under RTI Act 2005
PIO, Executive Engineer
SVPMC

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Surendra Infrastructure (P) Ltd.

19/1, V.I.P. ROAD, JUNGLI GHAT, PORT BLAIR-744 103, ☎ : 233517, FAX: 03192 – 231781
Email – sursalepb@gmail.com

262/PB/910

12th July'2024

Assistant Engineer-III (R/Works)
Municipal Council,
Port Blair

SUB: TEST REPORTS
REF: AGREEMENT NO.: 01 (PBSPL) OF 2022-23
MARINE ESPLANADE: MARINE ROAD RESTRUCTURING WITHUNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTINGSTREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING. S.W: STRENGHENING &CONSTRUCTION OF SEA WALL.

Dear Sir,
Please find enclosed Test Reports from SM Consultants, Pathargudda, Port Blair against your following Letters.

S.No.	Your Letter No.	SM Report No.
01.	F.No:-02/SE/PBMC/PBSPL/2021-22/16 dtd.08th March'2024	SMC/PB/215 dtd.15th March'2024
02.	F.No:-02/SE/PBMC/PBSPL/2021-22/18 dtd.10th March'2024	SMC/PB/214 dtd.17th March'2024
03.	F.No:-02/SE/PBMC/PBSPL/2021-22/22 dtd.12th March'2024	SMC/PB/212 dtd.19th March'2024
04.	F.No:-02/SE/PBMC/PBSPL/2021-22/24 dtd.13th March'2024	SMC/PB/211 dtd.20th March'2024
05.	F.No:-02/SE/PBMC/PBSPL/2021-22/26 dtd.15th March'2024	SMC/PB/210 dtd.22nd March'2024
06.	F.No:-02/SE/PBMC/PBSPL/2021-22/28 dtd.22nd March'2024	SMC/PB/209 dtd.29th March'2024
07.	F.No:-02/SE/PBMC/PBSPL/2021-22/30 dtd.23rd March'2024	SMC/PB/208 dtd.30th March'2024
08.	F.No:-02/SE/PBMC/PBSPL/2021-22/32 dtd.24th March'2024	SMC/PB/207 dtd.01th May' 2024
09.	F.No:-02/SE/PBMC/PBSPL/2021-22/34 dtd.26th March'2024	SMC/PB/206 dtd 03rd May' 2024
10.	F.No:-02/SE/PBMC/PBSPL/2021-22/35 dtd.25th March'2024	SMC/PB/205 dtd 02nd May' 2024
11.	F.No:-02/SE/PBMC/PBSPL/2021-22/37 dtd.27th March'2024	SMC/PB/204 dtd 04th May' 2024
12.	F.No:-02/SE/PBMC/PBSPL/2021-22/37 dtd.29th March'2024	SMC/PB/203 dtd 06th May' 2024
13.	F.No:-02/SE/PBMC/PBSPL/2021-22/38 dtd.30th March'2024	SMC/PB/202 dtd 07th May' 2024
14.	F.No:-02/SE/PBMC/PBSPL/2021-22/42 dtd.02nd May'2024	SMC/PB/201 dtd 09th May' 2024
15.	F.No:-02/SE/PBMC/PBSPL/2021-22/43 dtd.03rd March'2024	SMC/PB/200 dtd 10th May' 2024
16.	F.No:-02/SE/PBMC/PBSPL/2021-22/44 dtd.04th March'2024	SMC/PB/199 dtd 11th May' 2024
17.	F.No:-02/SE/PBMC/PBSPL/2021-22/52A dtd.13th MAY'2024	SMC/PB/487 dtd.20th MAY'2024
18.	F.NO. :-02SE/PBMC/PBSPL/2021-22/53 dtd.14th MAY'2024	SMC/PB/488 dtd.21st MAY'2024
19.	F.NO. :-02SE/PBMC/PBSPL/2021-22/54 dtd.15th MAY'2024	SMC/PB/489 dtd.22nd MAY'2024
20.	F.NO. :-02SE/PBMC/PBSPL/2021-22/55 dtd.16th MAY'2024	SMC/PB/490 dtd.23rd MAY'2024
21.	F.NO. :-02SE/PBMC/PBSPL/2021-22/57 dtd.17th MAY'2024	SMC/PB/491 dtd.24th MAY'2024
22.	F.NO. :-02SE/PBMC/PBSPL/2021-22/58 dtd.18th MAY'2024	SMC/PB/492 dtd.25th MAY'2024
23.	F.NO :-02SE/PBMC/PBSPL/2021-22/60 dtd.25th MAY'2024	SMC/PB/493 dtd.01st june'2024
24.	F.NO :-02SE/PBMC/PBSPL/2021-22/61 dtd.27th MAY'2024	SMC/PB/494 dtd.03rd june'2024
25.	F.NO :-02SE/PBMC/PBSPL/2021-22/63 dtd.28th MAY'2024	SMC/PB/495 dtd.04th june'2024
26.	F.NO :-02SE/PBMC/PBSPL/2021-22/66 dtd.29th MAY'2024	SMC/PB/496 dtd.05th june'2024
27.	F.NO:-02SE/PBMC/PBSPL/2021-22/67 dtd.30th MAY'2024	SMC/PB/497 dtd.06th june'2024
28.	F.NO:-02SE/PBMC/PBSPL/2021-22/71 dtd. 06th June'2024	SMC/PB/498 dtd.13th june'2024
29.	F.NO:-02SE/PBMC/PBSPL/2021-22/73 dtd.07th June'2024	SMC/PB/499 dtd.14th june'2024
30.	F.NO:-02SE/PBMC/PBSPL/2021-22/76 dtd.08th June'2024	SMC/PB/500 dtd.15th june'2024
31.	F.NO:-02SE/PBMC/PBSPL/2021-22/79 dtd.12th June'2024	SMC/PB/501 dtd.19th june'2024
32.	F.NO:-02SE/PBMC/PBSPL/2021-22/82 dtd.13th June'2024	SMC/PB/502 dtd.20th june'2024
33.	F.NO:-02SE/PBMC/PBSPL/2021-22/84 dtd.14th June'2024	SMC/PB/503 dtd.21st june'2024

9, EZRA STREET, CALCUTTA 700001, INDIA ☎ : 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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Surendra Infrastructure (P

191, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, Ph : 233517, FAX: 03192 – 231791
Email – sursalepb@gmail.com

34.	F.NO:-02SE/PBMC/PBSPL/2021-22/86 dtd.15th	June'2024	SMC/PB/504 dtd.22nd
35.	F.NO:-02SE/PBMC/PBSPL/2021-22/90 dtd.27th	June'2024	SMC/PB/505 dtd.01st
36.	F.NO:-02SE/PBMC/PBSPL/2021-22/91 dtd.28th	June'2024	SMC/PB/506 dtd.05th

Kindly acknowledge receipt.

Thanking you,
Sincerely yours
SURENDRA INFRASTRUCTURE PVT LTD
Surendra Infrastructure Pvt. Ltd.

Enc:Dia Ax: Abstract(36 Sheets) Signatory

submitted to AE-III
Jungli Ghat on 15/7/2024.

...STRASTREET, CALCUTTA 700...

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SM. CONSULTANTS

o. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Scchool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
o-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
· Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

/PB/43E Date : 20/05/2024

ess of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

itioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

: 01(PBSPL) of 2022-23

ork/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

of Letter : 02/SE/PBMC/PBSPL/2021-22/52A Date: 13/05/2024

Sample : Concrete Cube

of Sample : SMC/PB/487

Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

le Received : 20/05/2024

mencement of Testing : 20/05/2024

pletion of Testing : 20/05/2024

: 07 days Compressive Strength

eference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
eawall Footing	M-40	Weight in kg	8.269	8.321	IS: 516 - (Part-1/Sec1) : 2021	---
			8.371			
			8.324			
		Compressive Strength in N/mm^2	37.45	36.77		
			35.86			
			36.99			

above tested concrete cube are casted on date 13/05/2024

tion on sampling: The sampling of above sample is not done by this laboratory.

THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

: Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Scehool, Patharguda, Garacharma, Port Blair,S.Andaman,744 105
: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
lce: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
lot No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

. SMC/PB/38C	Date : 21/05/2024
Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
:equisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
it No.	: 01(PBSPL) of 2022-23
he Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
: no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/53 Date: 14/05/2024
on of Sample	: Concrete Cube
ition of Sample	: SMC/PB/488
n of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
ample Received	: 21/05/2024
Commencement of Testing	: 21/05/2024
Completion of Testing	: 21/05/2024
sult	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
1st Lift of Seawall	M-40	Weight in kg	8.356	8.353	IS: 516 - (Part-1/Sec1) : 2021	---
			8.405			
			8.299			
		Compressive Strength in N/mm^2	36.58	37.72		
			39.12			
			37.45			

The above tested concrete cube are casted on date 14/05/2024

mation on sampling: The sampling of above sample is not done by this laboratory.
)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Seehool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
:e: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
ıt No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

SMC/PB/45C — Date : 22/05/2024

ıddress of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

quisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

:No. : 01(PBSPL) of 2022-23

e Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

no. of Letter : 02/SE/PBMC/PBSPL/2021-22/54 Date: 15/05/2024

ı of Sample : Concrete Cube

ion of Sample : SMC/PB/489

of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

mple Received : 22/05/2024

Commencement of Testing : 22/05/2024

Completion of Testing : 22/05/2024

ult : 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Ist Lift of Seawall	M-40	Weight in kg	8.327	8.318	IS: 516 - (Part-1/Sec1) : 2021	---
			8.339			
			8.287			
		Compressive Strength in N/mm^2	35.96	36.65		
			37.45			
			36.54			

ıe above tested concrete cube are casted on date 15/05/2024

ation on sampling: The sampling of above sample is not done by this laboratory.

THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

HE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

HE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

: Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
Tice: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
lot No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

. SMC/PB/46F	Date : 23/05/2024
Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
tequisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
nt No.	: 01(PBSPL) of 2022-23
he Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/55 Date: 16/05/2024
n of Sample	: Concrete Cube
tion of Sample	: SMC/PB/490
of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
ample Received	: 23/05/2024
Commencement of Testing	: 23/05/2024
Completion of Testing	: 23/05/2024
ult	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Seawall 1st Lift	M-40	Weight in kg	8.356	8.374	IS: 516 - (Part-I/Sec1) : 2021	---
			8.400			
			8.367			
		Compressive Strength in N/mm^2	37.45	37.08		
			35.94			
			37.85			

he above tested concrete cube are casted on date 16/05/2024

ating on sampling: The sampling of above sample is not done by this laboratory.
THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
e: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
t No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

SMC/PB/47F	Date : 24/05/2024
ddress of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
quisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
No.	: 01(PBSPL) of 2022-23
: Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
o. of Letter	: 02/SE/PBMC/PBSPL/2021-22/57 Date: 17/05/2024
of Sample	: Concrete Cube
on of Sample	: SMC/PB/491
of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
mple Received	: 24/05/2024
ommencement of Testing	: 24/05/2024
ompletion of Testing	: 24/05/2024
alt	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Seawall Footing	M-40	Weight in kg	8.268	8.339	IS: 516 - (Part-1/Sec1) : 2021	---
			8.351			
			8.397			
		Compressive Strength in N/mm^2	36.54	36.64		
			36.27			
			37.12			

e above tested concrete cube are casted on date 17/05/2024

ation on sampling: The sampling of above sample is not done by this laboratory.
THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
HE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
HE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

lot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
lot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
:: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
:No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

MC/PB/48H	Date : 25/05/2024
ddress of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
uisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
No.	: 01(PBSPL) of 2022-23
Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
o. of Letter	: 02/SE/PBMC/PBSPL/2021-22/58 Date: 18/05/2024
of Sample	: Concrete Cube
on of Sample	: SMC/PB/492
of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
nple Received	: 25/05/2024
ommencement of Testing	: 25/05/2024
ompletion of Testing	: 25/05/2024
ılt	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Seawall 1st Lift	M-40	Weight in kg	8.422	8.347	IS: 516 - (Part-1/Sec1) : 2021	---
			8.259			
			8.359			
		Compressive Strength in N/mm^2	37.48	37.35		
			37.69			
			36.89			

e above tested concrete cube are casted on date 18/05/2024

ining on sampling: The sampling of above sample is not done by this laboratory.

THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

HE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

HE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

lot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
lot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

MC/PB/54M — Date : 01/06/2024

Idress of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

uisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

So. : 01(PBSPL) of 2022-23

Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

o. of Letter : 02/SE/PBMC/PBSPL/2021-22/60 Date: 25/05/2024

of Sample : Concrete Cube

in of Sample : SMC/PB/493

f Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

ple Received : 01/06/2024

mmencement of Testing : 01/06/2024

mpletion of Testing : 01/06/2024

lt : 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Seawall Footing	M-40	Weight in kg	8.368	8.361	IS: 516 - (Part-1/Sec1) : 2021	---
			8.324			
			8.391			
		Compressive Strength in N/mm^2	36.58	37.83		
			37.89			
			39.02			

: above tested concrete cube are casted on date 25/05/2024

tion of sampling: The sampling of above sample is not done by this laboratory.

THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

IE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

IE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

t No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Seehool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
t No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251932
lo-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

C/PB/55P	Date : 03/06/2024
lress of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
isitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
).	: 01(PBSPL) of 2022-23
ork/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
of Letter	: 02/SE/PBMC/PBSPL/2021-22/61 Date: 27/05/2024
f Sample	: Concrete Cube
of Sample	: SMC/PB/494
Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
le Received	: 03/06/2024
mencement of Testing	: 03/06/2024
pletion of Testing	: 03/06/2024
	: 07 days Compressive Strength

eference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
awall 1st Lift	M-40	Weight in kg	8.289	8.355	IS: 516 - (Part-1/Sec1) : 2021	---
			8.401			
			8.375			
		Compressive Strength in N/mm^2	35.99	37.87		
			39.05			
			38.56			

bove tested concrete cube are casted on date 27/05/2024

n on sampling: The sampling of above sample is not done by this laboratory.
S TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
TEST RESULT RELATES ONLY TO THE ITEM TESTED.
REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

ıt No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Scchool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
ıt No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha ,Ph: (0674) 2580582 -85 ·
AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

MC/PB/56B	Date : 04/06/2024
dress of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
aisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
lo.	: 01(PBSPL) of 2022-23
Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
ı. of Letter	: 02/SE/PBMC/PBSPL/2021-22/63 Date: 28/05/2024
of Sample	: Concrete Cube
n of Sample	: SMC/PB/495
f Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
ıple Received	: 04/06/2024
ımmencement of Testing	: 04/06/2024
ımpletion of Testing	: 04/06/2024
lt	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Seawall Footing	M-40	Weight in kg	8.358	8.348	IS: 516 - (Part-1/Sec1) : 2021	---
			8.321			
			8.365			
		Compressive Strength in N/mm^2	36.89	37.85		
			39.24			
			37.41			

e above tested concrete cube are casted on date 28/05/2024

dion on sampling: The sampling of above sample is not done by this laboratory.

THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

HE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

HE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Patharguda, Garacharma, Port Blair,S.Andaman,744 105
No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
o-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

C/PB/57D — Date : 05/06/2024

ress of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

isitloner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

o. : 01(PBSPL) of 2022-23

Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

of Letter : 02/SE/PBMC/PBSPL/2021-22/66 Date: 29/05/2024

f Sample : Concrete Cube

of Sample : SMC/PB/496

Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

ple Received : 05/06/2024

mmencement of Testing : 05/06/2024

mpletion of Testing : 05/06/2024

: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
enwall 1st Lift	M-40	Weight in kg	8.425	8.376	IS: 516 - (Part-1/Sec1) : 2021	---
			8.328			
			8.376			
		Compressive Strength in N/mm^2	38.56	36.47		
			34.86			
			35.99			

above tested concrete cube are casted on date 29/05/2024

tion on sampling: The sampling of above sample is not done by this laboratory.

HIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

E TEST RESULT RELATES ONLY TO THE ITEM TESTED.

E REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
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-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

:/PB/58E	Date : 06/06/2024
ess of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
itioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
	: 01(PBSPL) of 2022-23
ork/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
of Letter	: 02/SE/PBMC/PBSPL/2021-22/68 Date: 30/05/2024
Sample	: Concrete Cube
of Sample	: SMC/PB/497
ample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
e Received	: 06/06/2024
mencement of Testing	: 06/06/2024
pletion of Testing	: 06/06/2024
	: 07 days Compressive Strength

ference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
swall Footing	M-40	Weight in kg	8.346	8.300	IS: 516 - (Part-1/Sec1) : 2021	---
			8.267			
			8.288			
		Compressive Strength in N/mm^2	36.78	36.26		
			34.96			
			37.05			

bove tested concrete cube are casted on date 30/05/2024

n sampling: The sampling of above sample is not done by this laboratory.
TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
TEST RESULT RELATES ONLY TO THE ITEM TESTED.
REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

Qr. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Seeheel, Pathargudda, Garacharma, Port Blair,S Andaman,744 105
Qr-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha ,Ph: (0674) 2580682 -85 -
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-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33095851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

:PB/64A	Date : 13/06/2024
ess of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
itioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
	: 01(PBSPL) of 2022-23
ork/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
of Letter	: 02/SE/PBMC/PBSPL/2021-22/71 Date: 06/06/2024
Sample	: Concrete Cube
of Sample	: SMC/PB/498
ample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
e Received	: 13/06/2024
mencement of Testing	: 13/06/2024
pletion of Testing	: 13/06/2024
	: 07 days Compressive Strength

ference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
rwall 1st Lift	M-40	Weight in kg	8.276	8.318	IS: 516 - (Part-1/Sec1) : 2021	---
			8.328			
			8.351			
		Compressive Strength in N/mm^2	37.16	38.38		
			39.56			
			38.43			

bove tested concrete cube are casted on date 06/06/2024

n sampling: The sampling of above sample is not done by this laboratory.

THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

TEST RESULT RELATES ONLY TO THE ITEM TESTED.

REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

o. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
o-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
· Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
I, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

PB/65B	Date : 14/06/2024
ss of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
lioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
	: 01(PBSPL) of 2022-23
rk/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
Letter	: 02/SE/PBMC/PBSPL/2021-22/73 Date: 07/06/2024
ample	: Concrete Cube
f Sample	: SMC/PB/499
mple Received	: 3 Nos of Concrete Cube has been given by Client with work order.
Received	: 14/06/2024
ncement of Testing	: 14/06/2024
letion of Testing	: 14/06/2024
	: 07 days Compressive Strength

erence of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
all 2nd Lift	M-40	Weight in kg	8.306	8.316	IS: 516 - (Part-1/Sec1) : 2021	---
			8.346			
			8.296			
		Compressive Strength in N/mm^2	38.15	36.72		
			37.14			
			34.86			

ove tested concrete cube are casted on date 07/06/2024

on sampling: The sampling of above sample is not done by this laboratory.

TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

EST RESULT RELATES ONLY TO THE ITEM TESTED.

EPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Seeheel, Pathargodda, Garacharma, Port Blair,S Andaman,744 105
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T- Remkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981 · Fax: (06782) 251982
-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

:/PB/66C	Date : 15/06/2024
ess of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
ltioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
	: 01(PBSPL) of 2022-23
ork/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
f Letter	: 02/SE/PBMC/PBSPL/2021-22/76 Date: 08/06/2024
Sample	: Concrete Cube
of Sample	: SMC/PB/500
ample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
: Received	: 15/06/2024
nencement of Testing	: 15/06/2024
pletion of Testing	: 15/06/2024
	: 07 days Compressive Strength

ference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
wall 3rd Lift	M-40	Weight in kg	8.403	8.395	IS: 516 - (Part-1/Sec1) : 2021	---
			8.372			
			8.411			
		Compressive Strength in N/mm²	39.24	38.22		
			36.42			
			38.99			

ove tested concrete cube are casted on date 08/06/2024

on sampling: The sampling of above sample is not done by this laboratory.
THE REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
EST RESULT RELATES ONLY TO THE ITEM TESTED.
EPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

So. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Patharguda, Garacherma, Port Blair,S.Andaman,744 105
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-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

:/PB/69B	Date : 19/06/2024
ess of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
itioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
	: 01(PBSPL) of 2022-23
rk/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
f Letter	: 02/SE/PBMC/PBSPL/2021-22/79 Date: 12/06/2024
ample	: Concrete Cube
f Sample	: SMC/PB/501
mple Received	: 3 Nos of Concrete Cube has been given by Client with work order.
Received	: 19/06/2024
encement of Testing	: 19/06/2024
letion of Testing	: 19/06/2024
	: 07 days Compressive Strength

erence of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
all 2nd Lift	M-40	Weight in kg	8.268	8.306	IS: 516 - (Part-1/Sec1) : 2021	---
			8.302			
			8.347			
		Compressive Strength in N/mm^2	34.86	35.98		
			35.97			
			37.11			

ove tested concrete cube are casted on date 12/06/2024

on sampling: The sampling of above sample is not done by this laboratory.
TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
ST RESULT RELATES ONLY TO THE ITEM TESTED.
PORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

t No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir School, Pathargudda, Garacharma, Port Blair,S Andaman,744 105
t No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2589682 -85 ·
AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha Ph-(06782) 251981· Fax: (06782) 251982
lo-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

C/PB/70A Date : 20/06/2024

ress of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

sitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

: 01(PBSPL) of 2022-23

'ork/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

of Letter : 02/SE/PBMC/PBSPL/2021-22/82 Date: 13/06/2024

Sample : Concrete Cube

of Sample : SMC/PB/502

ample Received : 3 Nos of Concrete Cube has been given by Client with work order.

t Received : 20/06/2024

nencement of Testing : 20/06/2024

letion of Testing : 20/06/2024

: 07 days Compressive Strength

erence of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
ull 2nd Lift	M-40	Weight in kg	8.384	8.378	IS: 516 - (Part-1/Sec1) : 2021	---
			8.369			
			8.381			
		Compressive Strength in N/mm²	37.15	37.51		
			36.92			
			38.45			

ove tested concrete cube are casted on date 13/06/2024

on sampling: The sampling of above sample is not done by this laboratory.

TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

EST RESULTS RELATES ONLY TO THE ITEM TESTED.

EPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Secheol, Pathargudda, Garacharma, Port Blair,S Andaman,744 105
No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha ,Ph: (0674) 2586682 -85 ·
AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
o-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

C/PB/71C — Date : 21/06/2024

ress of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

sitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

: 01(PBSPL) of 2022-23

'ork/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

of Letter : 02/SE/PBMC/PBSPL/2021-22/84 Date: 14/06/2024

'Sample : Concrete Cube

of Sample : SMC/PB/503

Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

le Received : 21/06/2024

mencement of Testing : 21/06/2024

pletion of Testing : 21/06/2024

: 07 days Compressive Strength

ference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
wall 2nd Lift	M-40	Weight in kg	8.359	8.379	IS: 516 - (Part-1/Sec1) : 2021	---
			8.401			
			8.377			
		Compressive Strength in N/mm²	36.57	36.56		
			37.14			
			35.97			

bove tested concrete cube are casted on date 14/06/2024

n on sampling: The sampling of above sample is not done by this laboratory.

S TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

TEST RESULT RELATES ONLY TO THE ITEM TESTED.

REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Seehool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981 · Fax: (06782) 251982
1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

/PB/72A — Date : 22/06/2024

tss of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

tioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

: 01(PBSPL) of 2022-23

rk/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

f Letter : 02/SE/PBMC/PBSPL/2021-22/86 Date: 15/06/2024

ample : Concrete Cube

f Sample : SMC/PB/504

mple Received : 3 Nos of Concrete Cube has been given by Client with work order.

Received : 22/06/2024

encement of Testing : 22/06/2024

letion of Testing : 22/06/2024

: 07 days Compressive Strength

erence of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
all 2nd Lift	M-40	Weight in kg	8.289	8.333	IS: 516 - (Part-1/Sec1) : 2021	---
			8.357			
			8.352			
		Compressive Strength in N/mm^2	37.01	36.86		
			36.58			
			36.98			

ove tested concrete cube are casted on date 15/06/2024

on sampling: The sampling of above sample is not done by this laboratory.

THE REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

ST ISSUE RELATES ONLY TO THE ITEM TESTED.

PORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

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mkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
& T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

/82A	Date : 04/07/2024
of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
ier	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
	: 01(PBSPL) of 2022-23
Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
tter	: 02/SE/PBMC/PBSPL/2021-22/90 Date: 27/06/2024
iple	: Concrete Cube
ample	: SMC/PB/505
ole Received	: 3 Nos of Concrete Cube has been given by Client with work order.
eceived	: 04/07/2024
cement of Testing	: 04/07/2024
ion of Testing	: 04/07/2024
	: 07 days Compressive Strength

nce of abe	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Concrete	M-40	Weight in kg	8.342	8.349	IS: 516 - (Part-1/Sec1) : 2021	---
			8.333			
			8.372			
		Compressive Strength in N/mm²	36.89	35.88		
			34.96			
			35.78			

e tested concrete cube are casted on date 27/06/2024

n sampling: The sampling of above sample is not done by this laboratory.

THIS REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

T RESULT RELATES ONLY TO THE ITEM TESTED.

ORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Seehool, Pathargudda, Garacharma, Port Blair,S Andaman,744 103
No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 -
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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

C/TR/S3A	Date : 05/07/2024
ress of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
sitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
.	: 01(PBSPL) of 2022-23
ork/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
of Letter	: 02/SE/PBMC/PBSPL/2021-22/91 Date: 28/06/2024
f Sample	: Concrete Cube
of Sample	: SMC/PB/506
Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
le Received	: 05/07/2024
mencement of Testing	: 05/07/2024
npletion of Testing	: 05/07/2024
	: 07 days Compressive Strength

eference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
lab Concrete	M-40	Weight in kg	8.401	8.380	IS: 516 - (Part-1/Sec1) : 2021	...
			8.354			
			8.386			
		Compressive Strength in N/mm^2	38.10	37.52		
			36.89			
			37.58			

bove tested concrete cube are casted on date 28/06/2024

n of sampling: The sampling of above sample is not done by this laboratory.
S TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
TEST RESULT RELATES ONLY TO THE ITEM TESTED.
EPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

t: Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Pathargudda, Garacharma, Port Blair,S Andaman,744 105
t: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
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15CM CEMENT CONCRETE CUBE TEST REPORT

SMC/PB/13(O)	Date : 15/04/2024
Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
tequisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ot No.	: 01(PBSPL) of 2022-23
he Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/16 Date: 08/04/2024
n of Sample	: Concrete Cube
tion of Sample	: SMC/PB/215
of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
mple Received	: 15/04/2024
ommencement of Testing	: 15/04/2024
ompletion of Testing	: 15/04/2024
ult	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Seawall Footing	M-40	Weight in kg	8.357	8.376	IS: 516 - (Part-1/Sec1) : 2021	---
			8.401			
			8.369			
		Compressive Strength in N/mm²	36.99	37.71		
			38.45			
			37.68			

e above tested concrete cube are casted on date 08/04/2024

ation on sampling: The sampling of above sample is not done by this laboratory.

THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

HE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

HE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

AN19 PORT BLAIR

Scanned with OKEN Scanner

SM. CONSULTANTS

ffice: Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Seehool, Patharguddu, Garacharma, Port Blair,S.Andaman,744 105
ffice: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
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15CM CEMENT CONCRETE CUBE TEST REPORT

No. SMC/PB/15E	Date : 17/04/2024
nd Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
f Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ent No.	: 01(PBSPL) of 2022-23
f the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
ce no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/18 Date: 10/04/2024
tion of Sample	: Concrete Cube
cation of Sample	: SMC/PB/214
on of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
Sample Received	: 17/04/2024
f Commencement of Testing	: 17/04/2024
f Completion of Testing	: 17/04/2024
esult	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
First Lift of Seawall	M-40	Weight in kg	8.299	8.350	IS: 516 - (Part-1/Sec1) : 2021	---
			8.357			
			8.394			
		Compressive Strength in N/mm^2	37.46	38.02		
			38.67			
			37.92			

The above tested concrete cube are casted on date 10/04/2024

uation on sampling: The sampling of above sample is not done by this laboratory.

)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

o. SMC/PB/17C	Date : 19/04/2024
d Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ent No.	: 01(PBSPL) of 2022-23
the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
ce no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/22 Date: 12/04/2024
tion of Sample	: Concrete Cube
cation of Sample	: SMC/PB/212
on of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
Sample Received	: 19/04/2024
f Commencement of Testing	: 19/04/2024
f Completion of Testing	: 19/04/2024
esult	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Seawall 1st Lift	M-40	Weight in kg	8.401	8.361	IS: 516 - (Part-1/Sec1) : 2021	—
			8.330			
			8.353			
		Compressive Strength in N/mm^2	37.48	36.75		
			35.99			
			36.78			

The above tested concrete cube are casted on date 12/04/2024

ormation on sampling: The sampling of above sample is not done by this laboratory.

a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

No. SMC/PB/18D	Date : 20/04/2024
nd Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ment No.	: 01(PBSPL) of 2022-23
of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
nce no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/24 Date: 13/04/2024
ption of Sample	: Concrete Cube
fication of Sample	: SMC/PB/211
tion of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
of Sample Received	: 20/04/2024
e of Commencement of Testing	: 20/04/2024
e of Completion of Testing	: 20/04/2024
t Result	: 07 days Compressive Strength

o.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
	Seawall 2nd Lift	M-40	Weight in kg	8.327	8.356	IS: 516 - (Part-1/Sec1) : 2021	---
				8.380			
				8.362			
			Compressive Strength in N/mm^2	36.86	37.12		
				37.46			
				37.05			

1. The above tested concrete cube are casted on date 13/04/2024

formation on sampling: The sampling of above sample is not done by this laboratory.

B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR · ANDAMAN & NICOBAR · TESTING

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

No. SMC/PB/19C — Date : 22/04/2024

ind Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

ment No. : 01(PBSPL) of 2022-23

of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

:nce no. of Letter : 02/SE/PBMC/PBSPL/2021-22/26 — Date: 15/04/2024

iption of Sample : Concrete Cube

ification of Sample : SMC/PB/210

ition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

of Sample Received : 22/04/2024

e of Commencement of Testing : 22/04/2024

e of Completion of Testing : 22/04/2024

t Result : 07 days Compressive Strength

o.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
	Seawall 3rd Lift	M-40	Weight in kg	8.371	8.369	IS: 516 - (Part-1/Sec1) : 2021	---
				8.395			
				8.342			
1			Compressive Strength in N/mm^2	37.15	37.34		
2				36.84			
3				38.02			

: 1. The above tested concrete cube are casted on date 15/04/2024

nformation on sampling: The sampling of above sample is not done by this laboratory.

N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

). SMC/PB/2511	Date : 29/04/2024
l Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
nt No.	: 01(PBSPL) of 2022-23
the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
e no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/28 Date: 22/04/2024
ion of Sample	: Concrete Cube
ation of Sample	: SMC/PB/209
on of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
Sample Received	: 29/04/2024
f Commencement of Testing	: 29/04/2024
f Completion of Testing	: 29/04/2024
Result	: 07 days Compressive Strength

Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
			Individual	Average		
Seawall 2nd Lift	M-40	Weight in kg	8.307	8.316	IS: 516 - (Part-1/Sec1) : 2021	---
			8.288			
			8.354			
		Compressive Strength in N/mm^2	36.68	37.16		
			37.82			
			36.99			

.. The above tested concrete cube are casted on date 22/04/2024

ormation on sampling: The sampling of above sample is not done by this laboratory.

3 a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Mice: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 -
l Office: AT- HemLapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981 - Fax. (06782) 251982
ce: Plot No-1, P & T Colony, Opposite RTA Office, Tirumalgiri, Secunderabad -500015 - Ph: (040) 33005851 Tele-Fax 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

t No. SMC/PB/26G	Date : 30/04/2024
and Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ment No.	: 01(PBSPL) of 2022-23
of the Work/Project	: Marine Esplanade; Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
ence no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/30 Date: 23/04/2024
iption of Sample	: Concrete Cube
ification of Sample	: SMC/PB/208
lition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
of Sample Received	: 30/04/2024
e of Commencement of Testing	: 30/04/2024
e of Completion of Testing	: 30/04/2024
t Result	: 07 days Compressive Strength

o.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
	Seawall 3rd Lift	M-40	Weight in kg	8.411	8.378	IS: 516 - (Part-1/Sec1) : 2021	—
				8.396			
				8.327			
			Compressive Strength in N/mm²	37.15	36.99		
2				36.82			
3				36.99			

: 1. The above tested concrete cube are casted on date 23/04/2024

nformation on sampling: The sampling of above sample is not done by this laboratory.

LB a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PVT. LTD. PORT BLAIR

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

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s: Plot No-1, P & T Colony, Opposite RTA Office, Hanmulgher, Secunderabad -500015 - Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

No. SMC/PB/27G	Date : 01/05/2024
and Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ment No.	: 01(PBSPL) of 2022-23
of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
rence no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/32 Date: 24/04/2024
ription of Sample	: Concrete Cube
tification of Sample	: SMC/PB/207
dition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
e of Sample Received	: 01/05/2024
te of Commencement of Testing	: 01/05/2024
te of Completion of Testing	: 01/05/2024
st Result	: 07 days Compressive Strength

No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.371	8.339	IS: 516 - (Part-1/Sec1) : 2021	—
A2				8.306			
A3				8.341			
A1			Compressive Strength in N/mm²	36.82	37.23		
A2				36.72			
A3				38.16			

ote: 1. The above tested concrete cube are casted on date 23/04/2024

3. Information on sampling: The sampling of above sample is not done by this laboratory.

4. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

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ce: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

No. SMC/PB/29D — Date : 03/05/2024

nd Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

f Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

nent No. : 01(PBSPL) of 2022-23

of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

nce no. of Letter : 02/SE/PBMC/PBSPL/2021-22/34 — Date: 26/04/2024

ption of Sample : Concrete Cube

fication of Sample : SMC/PB/206

ition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

of Sample Received : 03/05/2024

e of Commencement of Testing : 03/05/2024

e of Completion of Testing : 03/05/2024

t Result : 07 days Compressive Strength

lo.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Seawall 2nd Lift	M-40	Weight in kg	8.328	8.327	IS: 516 - (Part-1/Sec1) : 2021	---
2				8.365			
3				8.287			
1			Compressive Strength in N/mm²	37.01	37.15		
2				35.99			
3				38.46			

e: 1. The above tested concrete cube are casted on date 26/04/2024

Information on sampling: The sampling of above sample is not done by this laboratory.

N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

. For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

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ffice: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

t No. SMC/PB/2SD	Date : 02/05/2024
and Address of the Agency	: M/s Surendru Infrastructure (P) Ltd, Port Blair
of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
cement No.	: 01(PBSPL) of 2022-23
e of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
rence no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/35 Date: 25/04/2024
cription of Sample	: Concrete Cube
ntification of Sample	: SMC/PB/205
dition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
e of Sample Received	: 02/05/2024
ate of Commencement of Testing	: 02/05/2024
ate of Completion of Testing	: 02/05/2024
est Result	: 07 days Compressive Strength

No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.269	8.302	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.324			
A3				8.312			
A1			Compressive Strength in N/mm^2	38.12	36.60		
A2				36.57			
A3				35.11			

Note: 1. The above tested concrete cube are casted on date 25/04/2024

3. Information on sampling: The sampling of above sample is not done by this laboratory.

4. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS FOR PORT BLAIR · TESTING LABORATORY ·

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

No. SMC/PB/30C	Date : 04/05/2024
nd Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
f Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ment No.	: 01(PBSPL) of 2022-23
of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
ence no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/37 Date: 27/04/2024
ription of Sample	: Concrete Cube
ification of Sample	: SMC/PB/204
dition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
e of Sample Received	: 04/05/2024
te of Commencement of Testing	: 04/05/2024
te of Completion of Testing	: 04/05/2024
st Result	: 07 days Compressive Strength

No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.305	8.309	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.296			
A3				8.326			
A1			Compressive Strength in N/mm^2	36.86	37.18		
A2				37.64			
A3				37.05			

Note: 1. The above tested concrete cube are casted on date 27/04/2024

3. Information on sampling: The sampling of above sample is not done by this laboratory.

4. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

No. SMC/PB/31D — Date : 06/05/2024

nd Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

ment No. : 01(PBSPL) of 2022-23

of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

ence no. of Letter : 02/SE/PDMC/PBSPL/2021-22/37 — Date: 29/04/2024

ription of Sample : Concrete Cube

ification of Sample : SMC/PB/203

dition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

of Sample Received : 06/05/2024

te of Commencement of Testing : 06/05/2024

te of Completion of Testing : 06/05/2024

st Result : 07 days Compressive Strength

No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.322	8.331	IS: 516 - (Part-1/Sec1) : 2021	—
A2				8.369			
A3				8.301			
A1			Compressive Strength in N/mm²	37.16	37.07		
A2				38.06			
A3				35.99			

te: 1. The above tested concrete cube are casted on date 29/04/2024

Information on sampling: The sampling of above sample is not done by this laboratory.

N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR * ABOVE LABORATORY *

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

o. SMC/PB/321I	Date : 07/05/2024
d Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
nent No.	: 01(PBSPL) of 2022-23
f the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
nce no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/38 Date: 30/04/2024
ption of Sample	: Concrete Cube
fication of Sample	: SMC/PB/202
tion of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
f Sample Received	: 07/05/2024
of Commencement of Testing	: 07/05/2024
e of Completion of Testing	: 07/05/2024
Result	: 07 days Compressive Strength

o.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
	Seawall 3rd Lift	M-40	Weight in kg	8.267	8.306	IS: 516 - (Part-1/Sec1) : 2021	---
2				8.299			
3				8.351			
			Compressive Strength in N/mm^2	36.78	36.94		
2				36.92			
3				37.11			

: 1. The above tested concrete cube are casted on date 30/04/2024

nformation on sampling: The sampling of above sample is not done by this laboratory.

N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PVT. LTD. PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

No. SMC/PB/34B	Date : 09/05/2024
nd Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ment No.	: 01(PBSPL) of 2022-23
of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
ence no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/42 Date: 02/05/2024
ription of Sample	: Concrete Cube
ification of Sample	: SMC/PB/201
dition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
of Sample Received	: 09/05/2024
e of Commencement of Testing	: 09/05/2024
e of Completion of Testing	: 09/05/2024
t Result	: 07 days Compressive Strength

o.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Seawall 2nd Lift & Seawall 3rd Lift	M-40	Weight in kg	8.324	8.360	IS: 516 - (Part-1/Sec1) : 2021	---
2				8.401			
3				8.355			
1			Compressive Strength in N/mm^2	38.06	37.83		
2				36.98			
3				38.45			

: 1. The above tested concrete cube are casted on date 02/05/2024

Information on sampling: The sampling of above sample is not done by this laboratory.

N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

SM CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

o. SMC/PB/35D	Date : 10/05/2024
d Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
ent No.	: 01(PBSPL) of 2022-23
f the Work/Project	: Marine Esplonade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
nce no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/43 Date: 03/05/2024
ption of Sample	: Concrete Cube
fication of Sample	: SMC/PB/200
ition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
of Sample Received	: 10/05/2024
e of Commencement of Testing	: 10/05/2024
e of Completion of Testing	: 10/05/2024
t Result	: 07 days Compressive Strength

o.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Seawall 3rd Lift	M-40	Weight in kg	8.267	8.351	IS: 516 - (Part-1/Sec1) : 2021	—
2				8.412			
3				8.373			
1			Compressive Strength in N/mm²	37.12	36.98		
2				36.94			
3				36.88			

e: 1. The above tested concrete cube are casted on date 03/05/2024

Information on sampling: The sampling of above sample is not done by this laboratory.

N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/71C	Date : 21/06/2024
2.Name and Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No.	: 01(PBSPL) of 2022-23
4.Name of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/84 Date: 14/06/2024
6.Description of Sample	: Concrete Cube
7.Identification of Sample	: SMC/PB/503
8.Condition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received	: 21/06/2024
10.Date of Commencement of Testing	: 21/06/2024
11.Date of Completion of Testing	: 21/06/2024
12.Test Result	: 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.359	8.379	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.401			
A3				8.377			
A1			Compressive Strength in N/mm^2	36.57	36.56		
A2				37.14			
A3				35.97			

Note: 1. The above tested concrete cube are casted on date 14/06/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

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e Office: Plot No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

Date : 22/06/2024

1.Report No. SMC/PB/72A
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Merine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

Date: 15/06/2024

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/86
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/504
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 22/06/2024
10.Date of Commencement of Testing : 22/06/2024
11.Date of Completion of Testing : 22/06/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.289	8.333	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.357			
A3				8.352			
A1			Compressive Strength in N/mm²	37.01	36.86		
A2				36.58			
A3				36.98			

Note: 1. The above tested concrete cube are casted on date 15/06/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. N.B. THE TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

Date : 04/07/2024

1.Report No. SMC/PBS2A
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd. Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

Date: 27/06/2024

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/90
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/505
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 04/07/2024
10.Date of Commencement of Testing : 04/07/2024
11.Date of Completion of Testing : 04/07/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Slab Concrete	M-40	Weight in kg	8.342	8.349	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.333			
A3				8.372			
A1			Compressive Strength in N/mm^2	36.89	35.88		
A2				34.96			
A3				35.78			

Note: 1. The above tested concrete cube are casted on date 27/06/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. N.B. (1) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
(2) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
(3) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

Date : 05/07/2024

1.Report No. SMC/PB/506
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4.Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

Date: 28/06/2024

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/91
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/506
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 05/07/2024
10.Date of Commencement of Testing : 05/07/2024
11.Date of Completion of Testing : 05/07/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Slab Concrete	M-40	Weight in kg	8.401	8.380	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.354			
A3				8.386			
A1			Compressive Strength in N/mm²	38.10	37.52		
A2				36.89			
A3				37.58			

Note: 1. The above tested concrete cube are casted on date 28/06/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/13(O) Date : 15/04/2024

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

4. Agreement No. : 01(PBSPL) of 2022-23

4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/16 Date: 08/04/2024

6.Description of Sample : Concrete Cube

7.Identification of Sample : SMC/PB/215

8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

9.Date of Sample Received : 15/04/2024

10.Date of Commencement of Testing : 15/04/2024

11.Date of Completion of Testing : 15/04/2024

12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall Footing	M-40	Weight in kg	8.357	8.376	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.401			
A3				8.369			
A1			Compressive Strength in N/mm^2	36.99	37.71		
A2				38.45			
A3				37.68			

Note: 1. The above tested concrete cube are casted on date 08/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/15E	Date : 17/04/2024
2.Name and Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No.	: 01(PBSPL) of 2022-23
4.Name of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/18 Date: 10/04/2024
6.Description of Sample	: Concrete Cube
7.Identification of Sample	: SMC/PB/214
8.Condition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received	: 17/04/2024
10.Date of Commencement of Testing	: 17/04/2024
11.Date of Completion of Testing	: 17/04/2024
12.Test Result	: 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	First Lift of Seawall	M-40	Weight in kg	8.299	8.350	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.357			
A3				8.394			
A1			Compressive Strength in N/mm²	37.46	38.02		
A2				38.67			
A3				37.92			

Note: 1. The above tested concrete cube are casted on date 10/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/17C — Date : 19/04/2024

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

4. Agreement No. : 01(PBSPL) of 2022-23

4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landsceping.
S.W : Strengthening & Construction of Sea Wall.

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/22 — Date: 12/04/2024

6.Description of Sample : Concrete Cube

7.Identification of Sample : SMC/PB/212

8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

9.Date of Sample Received : 19/04/2024

10.Date of Commencement of Testing : 19/04/2024

11.Date of Completion of Testing : 19/04/2024

12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 1st Lift	M-40	Weight in kg	8.401	8.361	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.330			
A3				8.353			
A1			Compressive Strength in N/mm^2	37.48	36.75		
A2				35.99			
A3				36.78			

Note: 1. The above tested concrete cube are casted on date 12/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/18D — Date : 20/04/2024

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

4. Agreement No. : 01(PBSPL) of 2022-23

4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/24 — Date: 13/04/2024

6.Description of Sample : Concrete Cube

7.Identification of Sample : SMC/PB/211

8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

9.Date of Sample Received : 20/04/2024

10.Date of Commencement of Testing : 20/04/2024

11.Date of Completion of Testing : 20/04/2024

12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.327	8.356	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.380			
A3				8.362			
A1			Compressive Strength in N/mm^2	36.86	37.12		
A2				37.46			
A3				37.05			

Note: 1. The above tested concrete cube are casted on date 13/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/2511 Date : 29/04/2024

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

4. Agreement No. : 01(PBSPL) of 2022-23

4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/28 Date: 22/04/2024

6.Description of Sample : Concrete Cube

7.Identification of Sample : SMC/PB/209

8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

9.Date of Sample Received : 29/04/2024

10.Date of Commencement of Testing : 29/04/2024

11.Date of Completion of Testing : 29/04/2024

12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.307	8.316	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.288			
A3				8.354			
A1			Compressive Strength in N/mm²	36.68	37.16		
A2				37.82			
A3				36.99			

Note: 1. The above tested concrete cube are casted on date 22/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/27G — Date : 01/05/2024
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/32 — Date: 24/04/2024
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/207
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 01/05/2024
10.Date of Commencement of Testing : 01/05/2024
11.Date of Completion of Testing : 01/05/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.371	8.339	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.306			
A3				8.341			
A1			Compressive Strength in N/mm^2	36.82	37.23		
A2				36.72			
A3				38.16			

Note: 1. The above tested concrete cube are casted on date 23/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

Branch Office: Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Sechool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/28D	Date : 02/05/2024
2.Name and Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No.	: 01(PBSPL) of 2022-23
4.Name of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/35 Date: 25/04/2024
6.Description of Sample	: Concrete Cube
7.Identification of Sample	: SMC/PB/205
8.Condition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received	: 02/05/2024
10.Date of Commencement of Testing	: 02/05/2024
11.Date of Completion of Testing	: 02/05/2024
12.Test Result	: 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.269	8.302	IS: 516 - (Part-1/Sec1) : 2021	...
A2				8.324			
A3				8.312			
A1			Compressive Strength in N/mm^2	38.12	36.60		
A2				36.57			
A3				35.11			

Note: 1. The above tested concrete cube are casted on date 25/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR TESTING LABORATORY

For S.M. CONSULTANTS

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SM. CONSULTANTS

Branch Office: Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Scchool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
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Registered Office: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981- Fax: (06782) 251982
State Office: Plot No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 - Ph: (040) 33005851 Tele-Fax: 27741623
Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/19C — Date : 22/04/2024
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/26 Date: 15/04/2024
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/210
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 22/04/2024
10.Date of Commencement of Testing : 22/04/2024
11.Date of Completion of Testing : 22/04/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.371	8.369	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.395			
A3				8.342			
A1			Compressive Strength in N/mm^2	37.15	37.34		
A2				36.84			
A3				38.02			

Note: 1. The above tested concrete cube are casted on date 15/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR TESTING LABORATORY

For S.M. CONSULTANTS

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SM. CONSULTANTS

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entral Office: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha .Ph: (0674) 2580682 -85 ·
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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/16G — Date : 30/04/2024

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair

3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.

4. Agreement No. : 01(PBSPL) of 2022-23

4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/30 — Date: 23/04/2024

6.Description of Sample : Concrete Cube

7.Identification of Sample : SMC/PB/208

8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

9.Date of Sample Received : 30/04/2024

10.Date of Commencement of Testing : 30/04/2024

11.Date of Completion of Testing : 30/04/2024

12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.411	8.378	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.396			
A3				8.327			
A1			Compressive Strength in N/mm^2	37.15	36.99		
A2				36.82			
A3				36.99			

Note: 1. The above tested concrete cube are casted on date 23/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR TESTING LABORATORY

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/29D — Date : 03/05/2024
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/34 — Date: 26/04/2024
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/206
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 03/05/2024
10.Date of Commencement of Testing : 03/05/2024
11.Date of Completion of Testing : 03/05/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.328	8.327	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.365			
A3				8.287			
A1			Compressive Strength in N/mm²	37.01	37.15		
A2				35.99			
A3				38.46			

Note: 1. The above tested concrete cube are casted on date 26/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

. For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/30C — Date : 04/05/2024
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/37 — Date: 27/04/2024
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/204
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 04/05/2024
10.Date of Commencement of Testing : 04/05/2024
11.Date of Completion of Testing : 04/05/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.305	8.309	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.296			
A3				8.326			
A1			Compressive Strength in N/mm²	36.86	37.18		
A2				37.64			
A3				37.05			

Note: 1. The above tested concrete cube are casted on date 27/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR TESTING LABORATORY

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

Date : 06/05/2024

1.Report No. SMC/PB/31D
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.

Date: 29/04/2024

5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/37
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/203
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 06/05/2024
10.Date of Commencement of Testing : 06/05/2024
11.Date of Completion of Testing : 06/05/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift	M-40	Weight in kg	8.322	8.331	IS: 516 - (Part-1/Sec1) : 2021	—
A2				8.369			
A3				8.301			
A1			Compressive Strength in N/mm^2	37.16	37.07		
A2				38.06			
A3				35.99			

Note: 1. The above tested concrete cube are casted on date 29/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

SM CONSULTANTS PORT BLAIR ANDAMAN & NICOBAR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/3211	Date : 07/05/2024
2.Name and Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
4. Agreement No.	: 01(PBSPL) of 2022-23
4.Name of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/38 Date: 30/04/2024
6.Description of Sample	: Concrete Cube
7.Identification of Sample	: SMC/PB/202
8.Condition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received	: 07/05/2024
10.Date of Commencement of Testing	: 07/05/2024
11.Date of Completion of Testing	: 07/05/2024
12.Test Result	: 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.267	8.306	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.299			
A3				8.351			
A1			Compressive Strength in N/mm^2	36.78	36.94		
A2				36.92			
A3				37.11			

Note: 1. The above tested concrete cube are casted on date 30/04/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PVT. LTD. PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Web: http://www.smcindia.com e-mail: support@smcindia.com

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/24B	Date : 09/05/2024
2.Name and Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
4.Agreement No.	: 01(PBSPL) of 2022-23
4.Name of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/42 Date: 02/05/2024
6.Description of Sample	: Concrete Cube
7.Identification of Sample	: SMC/PB/201
8.Condition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received	: 09/05/2024
10.Date of Commencement of Testing	: 09/05/2024
11.Date of Completion of Testing	: 09/05/2024
12.Test Result	: 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 2nd Lift & Seawall 3rd Lift	M-40	Weight in kg	8.324	8.360	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.401			
A3				8.355			
A1			Compressive Strength in N/mm^2	38.06	37.83		
A2				36.98			
A3				38.45			

Note: 1. The above tested concrete cube are casted on date 02/05/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

SM CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/35D — Date : 10/05/2024
2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner : Assistant Engineer-III (R/Works), PBMC, Port Blair.
4.Agreement No. : 01(PBSPL) of 2022-23
4.Name of the Work/Project : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/43 — Date: 03/05/2024
6.Description of Sample : Concrete Cube
7.Identification of Sample : SMC/PB/200
8.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received : 10/05/2024
10.Date of Commencement of Testing : 10/05/2024
11.Date of Completion of Testing : 10/05/2024
12.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.267	8.351	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.412			
A3				8.373			
A1			Compressive Strength in N/mm^2	37.12	36.98		
A2				36.94			
A3				36.88			

Note: 1. The above tested concrete cube are casted on date 03/05/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.
14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/36F	Date : 11/05/2024
2.Name and Address of the Agency	: M/s Surendra Infrastructure (P) Ltd, Port Blair
3.Name of Requisitioner	: Assistant Engineer-III (R/Works), PBMC, Port Blair.
4.Agreement No.	: 01(PBSPL) of 2022-23
4.Name of the Work/Project	: Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & Construction of Sea Wall.
5.Reference no. of Letter	: 02/SE/PBMC/PBSPL/2021-22/44 Date: 04/05/2024
6.Description of Sample	: Concrete Cube
7.Identification of Sample	: SMC/PB/199
8.Condition of Sample Received	: 3 Nos of Concrete Cube has been given by Client with work order.
9.Date of Sample Received	: 11/05/2024
10.Date of Commencement of Testing	: 11/05/2024
11.Date of Completion of Testing	: 11/05/2024
12.Test Result	: 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Seawall 3rd Lift	M-40	Weight in kg	8.324	8.336	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.351			
A3				8.334			
A1			Compressive Strength in N/mm^2	36.58	37.19		
A2				35.99			
A3				39.01			

Note: 1. The above tested concrete cube are casted on date 04/05/2024

13. Information on sampling: The sampling of above sample is not done by this laboratory.

14. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/195A : Date 16/11/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/86 Date: 09/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Samp[illegible] : SMC/PB/1013
9. Condition of Sample Rece[illegible] : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 16/11/2023
11. Date of Commencement of Testing : 16/11/2023
12. Date of Completion of Testing : 16/11/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	13th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.327	8.320	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.296			
3				8.338			
1			Compressive Strength in N/mm^2	34.58	34.02		
2				33.63			
3				33.84			

Note: 1. The above tested concrete cube are casted on date 09/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS * TESTING LABORATORY * PORT BLAIR

For S.M. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/195A : Date 16/11/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/86 Date: 09/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1013
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 16/11/2023
11. Date of Commencement of Testing : 16/11/2023
12. Date of Completion of Testing : 16/11/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	13th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.327	8.320	IS: 516 - (Part-1/Sec1) : 2021	---
2				8.296			
3				8.338			
1			Compressive Strength in N/mm²	34.58	34.02		
2				33.63			
3				33.84			

Note: 1. The above tested concrete cube are casted on date 09/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

(2) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
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For S.M. CONSULTANTS

21/11/2023
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15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/196E : Date 17/11/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/87 Date: 10/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1014
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 17/11/2023
11. Date of Commencement of Testing : 17/11/2023
12. Date of Completion of Testing : 17/11/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	13th Span 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.368	8.349	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.379			
3				8.301			
1			Compressive Strength in N/mm²	33.46	33.87		
2				34.27			
3				33.89			

Note: 1. The above tested concrete cube are casted on date 10/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N:B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
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15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/197D : Date 18/11/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/87(A) Date: 11/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1015
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 18/11/2023
11. Date of Commencement of Testing : 18/11/2023
12. Date of Completion of Testing : 18/11/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	14th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.362	8.319	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.300			
3				8.296			
1			Compressive Strength in N/mm²	35.41	34.38		
2				33.08			
3				34.64			

Note: 1. The above tested concrete cube are casted on date 11/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
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15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/199C : Date 21/11/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/88(A) Date: 14/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1016
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 21/11/2023
11. Date of Commencement of Testing : 21/11/2023
12. Date of Completion of Testing : 21/11/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	15th Span Footing & 14th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.346	8.321	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.297			
3				8.321			
1			Compressive Strength in N/mm²	32.99	34.52		
2				36.42			
3				34.15			

Note: 1. The above tested concrete cube are casted on date 14/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

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15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/201D : Date 23/11/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/88(B) Date: 16/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1017
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 23/11/2023
11. Date of Commencement of Testing : 23/11/2023
12. Date of Completion of Testing : 23/11/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	15th Span 1st Lift & 13th Span 2nd Lift (A1, A2, A3)	M-40	Weight in kg	8.401	8.379	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.356			
3				8.379			
1			Compressive Strength in N/mm²	33.64	33.91		
2				33.97			
3				34.12			

Note: 1. The above tested concrete cube are casted on date 16/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
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For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/204F : Date 27/11/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/89(A) Date: 20/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1018
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 27/11/2023
11. Date of Commencement of Testing : 27/11/2023
12. Date of Completion of Testing : 27/11/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	16th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.316	8.356	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.394			
3				8.357			
1			Compressive Strength in N/mm²	35.01	34.23		
2				32.69			
3				34.99			

Note: 1. The above tested concrete cube are casted on date 20/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/208J : Date 30/11/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/93 Date: 23/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1019
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 30/11/2023
11. Date of Commencement of Testing : 30/11/2023
12. Date of Completion of Testing : 30/11/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	16th Span 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.316	8.330	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.376			
3				8.299			
1			Compressive Strength in N/mm²	33.56	35.39		
2				36.84			
3				35.78			

Note: 1. The above tested concrete cube are casted on date 23/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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ate Office: Plot No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/216B : Date 09/12/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/96A Date: 02/12/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1021
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 09/12/2023
11. Date of Commencement of Testing : 09/12/2023
12. Date of Completion of Testing : 09/12/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	17th Span 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.357	8.364	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.324			
3				8.412			
1			Compressive Strength in N/mm²	35.24	34.35		
2				33.69			
3				34.11			

Note: 1. The above tested concrete cube are casted on date 02/12/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

(a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
(b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
(c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS TESTING LABORATORY

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/212D : Date 05/12/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/96 Date: 28/11/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1020
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 05/12/2023
11. Date of Commencement of Testing : 05/12/2023
12. Date of Completion of Testing : 05/12/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	17th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.369	8.359	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.304			
3				8.405			
1			Compressive Strength in N/mm²	34.83	34.46		
2				35.69			
3				32.86			

Note: 1. The above tested concrete cube are casted on date 28/11/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/219A : Date 13/12/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/96B Date: 06/12/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1022
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 13/12/2023
11. Date of Commencement of Testing : 13/12/2023
12. Date of Completion of Testing : 13/12/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	18th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.371	8.377	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.362			
3				8.399			
1			Compressive Strength in N/mm²	34.58	34.89		
2				36.12			
3				33.98			

Note: 1. The above tested concrete cube are casted on date 06/12/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR LABORATORY

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/222A : Date 16/12/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/97 Date: 09/12/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1023
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 16/12/2023
11. Date of Commencement of Testing : 16/12/2023
12. Date of Completion of Testing : 16/12/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	18th Span 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.327	8.367	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.381			
3				8.394			
1			Compressive Strength in N/mm²	33.82	33.95		
2				32.99			
3				35.05			

Note: 1. The above tested concrete cube are casted on date 09/12/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
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For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/225D : Date 20/12/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/97A Date: 13/12/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1024
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 20/12/2023
11. Date of Commencement of Testing : 20/12/2023
12. Date of Completion of Testing : 20/12/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	19th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.354	8.367	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.378			
3				8.405			
1			Compressive Strength in N/mm²	34.01	33.95		
2				33.89			
3				36.51			

Note: 1. The above tested concrete cube are casted on date 13/12/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR LABORATORY

For S.M. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/229G : Date 25/12/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/98A Date: 18/12/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1025
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 25/12/2023
11. Date of Commencement of Testing : 25/12/2023
12. Date of Completion of Testing : 25/12/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	19th Span 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.341	8.386	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.416			
3				8.400			
1			Compressive Strength in N/mm²	35.24	34.36		
2				32.99			
3				34.86			

Note: 1. The above tested concrete cube are casted on date 18/12/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

S.M. CONSULTANTS PORT BLAIR

(1) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
(2) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
(3) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/240C : Date 06/01/2024
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/105 Date: 30/12/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1027
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 06/01/2024
11. Date of Commencement of Testing : 06/01/2024
12. Date of Completion of Testing : 06/01/2024
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	20th Span 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.325	8.361	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.357			
3				8.400			
1			Compressive Strength in N/mm²	35.40	34.22		
2				33.25			
3				34.02			

Note: 1. The above tested concrete cube are casted on date 30/12/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/239B : Date 05/01/2024
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthing & Construction of Sea Wall.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/104 Date: 29/12/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/1026
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 05/01/2024
11. Date of Commencement of Testing : 05/01/2024
12. Date of Completion of Testing : 05/01/2024
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	20th Span Footing (A1, A2, A3)	M-40	Weight in kg	8.376	8.397	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.394			
3				8.421			
1			Compressive Strength in N/mm²	34.25	35.41		
2				36.12			
3				35.86			

Note: 1. The above tested concrete cube are casted on date 29/12/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

Scanned with OKEN Scanner

Surendra Infrastructure (P) Ltd.

194, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, ☎ : 233517, FAX: 03192 – 231781
Email – sursalepbr@gmail.com

262/PB/221(A) 15/11/2023

Assistant Engineer-III (R/Works)
Municipal Council,
Port Blair

SUB: CEMENT TEST REPORT

REF: AGREEMENT NO.: 01 (PBSPL) OF 2022-23
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING.
S.W: STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,

Please find enclosed Test Reports from SM Consultants, Pathargudda, Port Blair against your following Letter.

S.No.	Your Letter No.	SM Report No.
01.	F.No:- 02/SE/PBMC/PBSPL/2021-22/58 dtd. 12th June 2023	SMC/PB/87(C) dtd. 12th July'2023 SMC/PB/87(D) dtd. 12th July'2023

Kindly acknowledge receipt.

Thanking you,
Sincerely yours
SURENDRA INFRASTRUCTURE PVT LTD
Surendra Infrastructure Pvt. Ltd.
Director/Authorised Signatory

Encl: As Above (02 Sheets)

15/11/23

9, EZRA STREET, CALCUTTA 700001, INDIA. ☎ : 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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S.M. CONSULTANTS
Registered Consultant for Architecture & Engineering Works
·ISO 9001- 2015 · NABL Accredited

Plot No. 3/2, No-4, Pathargudda
Near Saraswati Sishu Mandir School
P.O. - Garacharma, Port Blair - 744105
South Andaman , Andaman & Nicobar Islands
Phone : (03192) 250931
Web.: http://www.smcindia.com
Email : smconsultants11@gmail.com

Format No. :F-27, Issue No. : 01, Revision : 05, Revision Date : 21/10/2020, Issue Date : 02/04/2012

PHYSICAL TEST OF CEMENT SAMPLE

1. Report No. SMC/87C : Date 12/07/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/58 Date: 12/06/2023
7. Description of Sample : Cement
8. Identification of Sample : SMC/PB/835
9. Condition of Sample Received : 1 bag of Cement Sample (Brand – Ramco, Type-OPC 43 Grade) has been given by the client with the work order.
10. Date of Sample Received : 13/06/2023
11. Date of Commencement of Testing : 14/06/2023
12. Date of Completion of Testing : 12/07/2023
13. Test Result : Physical Properties

Sl. No.	Sample Reference (if any)	Test Parameter	Observed value	Method of Test Adopted as per Standards	Requirement as per Standard Specifications IS : 269-2015 (Reaff-2020)
1	Cement (Ramco, OPC 43 Grade)	Standard consistency (%)	28.50	IS:4031(Part 4) – 1988 (Reaffirmed 2019)	-----
2		Initial Setting Time, (minutes)	155	IS:4031(Part 5) – 1988 (Reaffirmed 2019)	Not less than 30 minutes.
3		Final Setting Time, (minutes)	250		Not More than 600 minutes.
4		Fineness by Blaine's air permeability (m^2/kg)	280	IS:4031(Part 2) – 1999 (Reaffirmed 2018)	Min. 225 m^2/kg
5		Soundness by Le- Chatelier Method (mm)	1.1	IS:4031(Part 4) – 1988 (Reaffirmed 2019)	Max. 10 mm
6		Compressive Strength at 72±1 h, (N/mm^2) (Avg.)	28.5	IS:4031(Part 6) – 1988 (Reaffirmed 2019)	Min. 23.0 N/mm^2
7		Compressive Strength at 168±2 h, (N/mm^2) (Avg.)	39.2		Min. 33.0 N/mm^2
8		Compressive Strength at 672±4 h, (N/mm^2) (Avg.)	49.9		Min. 43.0 N/mm^2 Max. 58.0 N/mm^2

14. Concluding Remarks: The above cement sample is satisfied as per IS 269:2015

15. NB 1. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLES WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

For S.M. CONSULTANTS

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S.M. CONSULTANTS
Registered Consultant for Architecture & Engineering Works
·ISO 9001- 2015 · NABL Accredited

Plot No. 3/2, No-4, Pahargaon
Near Saraswati Shishu Mandir School
P.O. - Garacharma, Port Blair - 744103
South Andaman, Andaman & Nicobar Islands
Phone : (03192) 251631
Web : http://www.smcindia.com
Email : smconsultants11@gmail.com

Format No. :F-27, Issue No. : 01, Revision : 05, Revision Date : 21/10/2020, Issue Date : 02/04/2012

CHEMICAL TEST ON CEMENT SAMPLE

1. Report No. SMC/87D : Date 12/07/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/58 Date: 12/06/2023
7. Description of Sample : Cement
8. Identification of Sample : SMC/PB/835
9. Condition of Sample Received : 1 bag of Cement Sample (Brand – Ramco, Type-OPC 43 Grade) has been given by the client with the work order.
10. Date of Sample Received : 13/06/2023
11. Date of Commencement of Testing : 14/06/2023
12. Date of Completion of Testing : 21/06/2023
13. Test Result : Chemical Properties

Sl. No.	Sample Reference (if any)	Test Parameter	Observed value	Method of Test Adopted as per Standards	Requirement as per Standard Specifications IS : 269-2015 (Reaff-2020)
1	Cement (Ramco, OPC 43 Grade)	Loss on ignition (%by mass)	2.44	IS 4032:1985 (Reaff-2019)	Max. 5.0
2		Magnesia as MgO (% by mass)	2.53		Max. 6.0
3		Total Sulphur content calculated as Sulphuric anhydride (SO_3)(% by mass)	1.71		Max. 3.5
4		Insoluble residue (% by mass)	2.63		Max. 5.0
5		Chloride content (% by mass)	BDL		Max. 0.1 Max. 0.05 for prestressed structure
6		Ratio of % of lime to % of silica, Alumina & Iron oxide when calculated by the formula $\frac{CaO - 0.7\,SO_3}{2.8SiO_2 + 1.2Al_2O_3 + 0.65Fe_2O_3}$	0.84		0.66-1.02
7		Ratio of percentage of Alumina to that of Iron oxide	0.79		Min. 0.66

*BDL – BELOW DETECTION LEVEL

18. Concluding Remarks: The above cement sample is satisfied as per IS 269:2015

19. NB 1. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLES WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

Surendra Infrastructure (P) Ltd.
PT, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, T : 233517, FAX: 03192 - 231761
Email – sursalepb@gmail.com

04th Jan'2024

262/PB/517

M/s S.M Consultants
Plot No.3 2/No.4
Patherguida
Near SaraswatiShishuMandir School
Garacharma Post
Port Blair - 744105
Email: smconsultants11@gmail.com

Kind Attn: Mr.Barick(8280327339,07063903443)

SUB: CUBE TESTING

REF : AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155
DTD. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING.
S.W: STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,

Please arrange to submit report to Assistant Engineer-III(R/Works), Municipal Council against their following letter with a copy to us against their following Letter (Copy Enclosed) and raise Bill on us for our arranging Payment:

1. F.No:- 02/SE/PBMC/PBSPL/2021-22/86 dtd. 09th Nov'2023.
2. F.No:- 02/SE/PBMC/PBSPL/2021-22/87 dtd. 10th Nov'2023.
3. F.No:- 02/SE/PBMC/PBSPL/2021-22/87(A) dtd. 11th Nov'2023.
4. F.No:- 02/SE/PBMC/PBSPL/2021-22/88(A) dtd. 14th Nov'2023.
5. F.No:- 02/SE/PBMC/PBSPL/2021-22/88(B) dtd. 16th Nov'2023
6. F.No:- 02/SE/PBMC/PBSPL/2021-22/89(A) dtd. 20th Nov'2023
7. F.No:- 02/SE/PBMC/PBSPL/2021-22/93 dtd. 23rd Nov'2023
8. F.No:- 02/SE/PBMC/PBSPL/2021-22/96 dtd. 28th Nov'2023
9. F.No:- 02/SE/PBMC/PBSPL/2021-22/96(A) dtd. 02nd Dec'2023
10. F.No:- 02/SE/PBMC/PBSPL/2021-22/96(B) dtd. 06th Dec'2023
11. F.No:- 02/SE/PBMC/PBSPL/2021-22/97 dtd. 09th Dec'2023
12. F.No:- 02/SE/PBMC/PBSPL/2021-22/97(A) dtd. 13th Dec'2023
13. F.No:- 02/SE/PBMC/PBSPL/2021-22/98(A) dtd. 18th Dec'2023
14. F.No:- 02/SE/PBMC/PBSPL/2021-22/104 dtd. 29th Dec'2023
15. F.No:- 02/SE/PBMC/PBSPL/2021-22/105 dtd. 30th Dec'2023

Please acknowledge receipt.

Thanking you
SURENDRA INFRASTRUCTURE PVT. LTD
Surendra Infrastructure Pvt. Ltd.

Received by

Encl: As Above (30 Sheets)
Director/Authorised Signatory

PIN-744101, INDIA, T. 225 3385/3382, FAX. 91-033-225 3152
Email: sursales8@gmail.com

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/ 86 Date. 9/11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
   S.W : Strengthening & construction of sea wall
2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
3. Agreement No : 01 (PBSPL) of 2022-23
4. Name of Executive Engineer : Shri. Avinash Kumar Singh
5. Name of Assistant Engineer : Shri. Abdul Wahab
6. Name of Junior Engineer : Shri. Anil Bahadur Rai
7. Mix of concrete : Design mix M40
8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm
9. Details of portion of work From where cubes are taken And qty approx. : 13th Span footing
10. Date of Casting : 09/11/2023
11. Date of testing :
12. Mark of specimens : A1, A2, A3
13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/871 Date 6/4/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Patharguddu,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
   S.W : Strengthening & construction of sea wall
2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
3. Agreement No : 01 (PBSPL) of 2022-23
4. Name of Executive Engineer : Shri. Avinash Kumar Singh
5. Name of Assistant Engineer : Shri. Abdul Wahab
6. Name of Junior Engineer : Shri. Anil Bahadur Rai
7. Mix of concrete : Design mix M40
8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm
9. Details of portion of work From where cubes are taken And qty approx. : 13th Span first lift
10. Date of Casting : 10/11/2023
11. Date of testing :
12. Mark of specimens : A1, A2, A3
13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/ 870 Date: 11 /11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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OFFICE OF

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 14th Span footing

10. Date of Casting : 11/11/2023

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22 / 980(1) Date: 7/11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Patharguddo,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

OFFICE OF...

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 15th Span footing & 14th Span I st Cft

10. Date of Casting : 14/11/2023

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22 / 812

Date: 6/11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Patharguida,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub	: Mandatory Design Mix-reg
Name of work	:Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & construction of sea wall
Agency	:M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No	:01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
   S.W : Strengthening & construction of sea wall
2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
3. Agreement No : 01 (PBSPL) of 2022-23
4. Name of Executive Engineer : Shri. Avinash Kumar Singh
5. Name of Assistant Engineer : Shri. Abdul Wahab
6. Name of Junior Engineer : Shri. Anil Bahadur Rai
7. Mix of concrete : Design mix M40
8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm
9. Details of portion of work From where cubes are taken And qty approx. : 15th Span 1st lift & 13th span 2nd lift
10. Date of Casting : 16/11/2023
11. Date of testing :
12. Mark of specimens : A1, A2, A3
13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE Sig. of AE Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22 / 89 (A) Date: 26/11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

OFFICE OF THE ASSI...

F.No. ...

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 16th Span footing

10. Date of Casting : 20/11/2023

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/93 Date:23/11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

OFFICE OF THE ASSIS

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 16th Span 1st lift

10. Date of Casting : 28/11/2023

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

Date: 26/11/2023

F.No. 02/SE/PBMC/PBSPL/2021-22/ 96

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 17th Span Footing

10. Date of Casting : 28/11/2023

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

Date 09/12/2023

F.No. 02/SE/PBMC/PBSPL/2021-22 / 90(1)

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 17th Span 1st Lift

10. Date of Casting : 01/12/2022

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PDSPL/2021-22/96(B) Date: 6/11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Patharguda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade, Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 18th Span Roofing

10. Date of Casting : 06/12/2023

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of IE

Sig. of AE

Sig. of Contractor

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Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22 / 49 Date: 9/11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

OFFICE OF THE ASSIST...

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 18th Span FSL lift

10. Date of Casting : 09/12/2023

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/ 95(A)

Date: 13/12/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

3. Agreement No : 01 (PBSPL) of 2022-23

4. Name of Executive Engineer : Shri. Avinash Kumar Singh

5. Name of Assistant Engineer : Shri. Abdul Wahab

6. Name of Junior Engineer : Shri. Anil Bahadur Rai

7. Mix of concrete : Design mix M40

8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm

9. Details of portion of work From where cubes are taken And qty approx. : 19th Span footing

10. Date of Casting : 15/12/2023

11. Date of testing :

12. Mark of specimens : A1, A2, A3

13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22 / 934

Date: 12/04/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/104 Date: 27/12/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

OFFICE OF THE ... A.Se...

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
   S.W : Strengthening & construction of sea wall
2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
3. Agreement No : 01 (PBSPL) of 2022-23
4. Name of Executive Engineer : Shri. Avinash Kumar Singh
5. Name of Assistant Engineer : Shri. Abdul Wahab
6. Name of Junior Engineer : Shri. Anil Bahadur Rai
7. Mix of concrete : Design mix M40
8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm
9. Details of portion of work From where cubes are taken And qty approx. : 20th Span footing
10. Date of Casting : 29/12/2023
11. Date of testing :
12. Mark of specimens : A1, A2, A3
13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/1037 Date: 30/11/2023

To
M/S. SM Consultants,
Plot No. 3/2, No-4, Pathargudda,
Near saraswati Sishu Mandir School,
Garacharma Post,
Port Blair-744105

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
   S.W : Strengthening & construction of sea wall
2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
3. Agreement No : 01 (PBSPL) of 2022-23
4. Name of Executive Engineer : Shri. Avinash Kumar Singh
5. Name of Assistant Engineer : Shri. Abdul Wahab
6. Name of Junior Engineer : Shri. Anil Bahadur Rai
7. Mix of concrete : Design mix M40
8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm
9. Details of portion of work From where cubes are taken And qty approx. : 20th span FSL
10. Date of Casting : 20/1/2023
11. Date of testing :
12. Mark of specimens : A1, A2, A3
13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Scanned with OKEN Scanner

6

Surendra Infrastructure (P) Ltd.

P/L V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103, O : 233517, FAX: 03192 - 231781
Email – sursalepbw@gmail.com

262 PB/418 16th Nov'2023

Assistant Engineer-III (R/Works)
Municipal Council,
Port Blair

SUB: TEST REPORTS
REF: AGREEMENT NO.: 01 (PBSPL) OF 2022-23
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING. S.W: STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,

Please find enclosed Test Reports from SM Consultants, Pathargudda, Port Blair against your following Letters.

S.No.	Your Letter No.	SM Report No.
01.	F.No:-02/SE/PBMC/PBSPL/2021-22/77 dtd. 27th Sept'2023	SMC/PB/158(D) dtd. 04th Oct'2023
02.	F.No:-02/SE/PBMC/PBSPL/2021-22/78 dtd. 28th Sept'2023	SMC/PB/159(A) dtd. 05th Oct'2023
03.	F.No:-02/SE/PBMC/PBSPL/2021-22/79 dtd. 29th Sept'2023	SMC/PB/160(B) dtd. 06th Oct'2023
04.	F.No:-02/SE/PBMC/PBSPL/2021-22/79(A) dtd. 30th Sept'2023	SMC/PB/161(E) dtd. 07th Oct'2023
05.	F.No:-02/SE/PBMC/PBSPL/2021-22/01 dtd. 03rd Oct'2023	SMC/PB/163(C) dtd. 10th Oct'2023
06.	F.No:-02/SE/PBMC/PBSPL/2021-22/02 dtd. 04th Oct'2023	SMC/PB/164(B) dtd. 11th Oct'2023
07.	F.No:-02/SE/PBMC/PBSPL/2021-22/03 dtd. 06th Oct'2023	SMC/PB/166(A) dtd. 13th Oct'2023
08.	F.No:-02/SE/PBMC/PBSPL/2021-22/04 dtd. 07th Oct'2023	SMC/PB/167(B) dtd. 14th Oct'2023
09.	F.No:-02/SE/PBMC/PBSPL/2021-22/05 dtd. 13th Oct'2023	SMC/PB/172(D) dtd. 20th Oct'2023
10.	F.No:-02/SE/PBMC/PBSPL/2021-22/06 dtd. 14th Oct'2023	SMC/PB/173(B) dtd. 21st Oct'2023
11.	F.No:-02/SE/PBMC/PBSPL/2021-22/07 dtd. 16th Oct'2023	SMC/PB/174(C) dtd. 23rd Oct'2023
12.	F.No:-02/SE/PBMC/PBSPL/2021-22/08 dtd. 17th Oct'2023	SMC/PB/175(D) dtd. 24th Oct'2023
13.	F.No:-02/SE/PBMC/PBSPL/2021-22/09 dtd. 18th Oct'2023	SMC/PB/176(C) dtd. 25th Oct'2023
14.	F.No:-02/SE/PBMC/PBSPL/2021-22/10 dtd. 19th Oct'2023	SMC/PB/177(A) dtd. 26th Oct'2023
15.	F.No:-02/SE/PBMC/PBSPL/2021-22/11 dtd. 26th Oct'2023	SMC/PB/183(E) dtd. 02nd Nov'2023
16.	F.No:-02/SE/PBMC/PBSPL/2021-22/12 dtd. 27th Oct'2023	SMC/PB/184(B) dtd. 03rd Nov'2023
17.	F.No:-02/SE/PBMC/PBSPL/2021-22/13 dtd. 28th Oct'2023	SMC/PB/185(B) dtd. 04th Nov'2023
18.	F.No:-02/SE/PBMC/PBSPL/2021-22/14 dtd. 30th Oct'2023	SMC/PB/186(A) dtd. 06th Nov'2023
19.	F.No:-02/SE/PBMC/PBSPL/2021-22/15 dtd. 31st Oct'2023	SMC/PB/187(B) dtd. 07th Nov'2023
20.	F.No:-02/SE/PBMC/PBSPL/2021-22/16 dtd. 01st Nov'2023	SMC/PB/188(B) dtd. 08th Nov'2023
21.	F.No:-02/SE/PBMC/PBSPL/2021-22/17 dtd. 02nd Nov'2023	SMC/PB/189(A) dtd. 09th Nov'2023
22.	F.No:-02/SE/PBMC/PBSPL/2021-22/18 dtd. 03rd Nov'2023	SMC/PB/190(B) dtd. 10th Nov'2023
23.	F.No:-02/SE/PBMC/PBSPL/2021-22/19 dtd. 04th Nov'2023	SMC/PB/191(A) dtd. 11th Nov'2023
24.	F.No:-02/SE/PBMC/PBSPL/2021-22/20 dtd. 05th Nov'2023	SMC/PB/192(A) dtd. 13th Nov'2023
25.	F.No:-02/SE/PBMC/PBSPL/2021-22/21 dtd. 07th Nov'2023	SMC/PB/193(A) dtd. 14th Nov'2023

Kindly acknowledge receipt.

Thanking you,
Sincerely yours
SURENDRA INFRASTRUCTURE PVT LTD

Surendra Infrastructure Pvt. Ltd.

Encl: As Above (25 Sheets)

9, EZRA STREET, CALCUTTA 700001, INDIA. O : 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/158(D) Date : 04/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/77 Date: 27/09/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/803

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 27/09/2023

11.Date of Commencement of Testing : 04/10/2023

12.Date of Completion of Testing : 04/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Footing	M-40	Weight in kg	8.631	8.631	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.588			
A3				8.673			
A1			Compressive Strength in N/mm^2	36.89	36.95		
A2				37.45			
A3				36.52			

Note: 1. The above tested concrete cube are casted on date 27/09/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/159(A) Date : 05/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Municipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/78 Date: 28/09/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/804

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 28/09/2023

11.Date of Commencement of Testing : 05/10/2023

12.Date of Completion of Testing : 05/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall 1st & 2nd Lift	M-40	Weight in kg	8.543	8.543	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.557			
A3				8.530			
A1			Compressive Strength in N/mm^2	36.41	35.86		
A2				35.29			
A3				35.87			

Note: 1. The above tested concrete cube are casted on date 28/09/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/160(B) Date : 06/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/79 Date: 29/09/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/805

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 29/09/2023

11.Date of Commencement of Testing : 06/10/2023

12.Date of Completion of Testing : 06/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Footing & 1st Lift	M-40	Weight in kg	8.634	8.619	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.604			
A3				8.618			
A1			Compressive Strength in N/mm^2	35.79	36.09		
A2				36.16			
A3				36.31			

Note: 1. The above tested concrete cube are casted on date 29/09/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/161(E) Date : 07/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/75(a) Date: 30/09/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/806

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 30/09/2023

11.Date of Commencement of Testing : 07/10/2023

12.Date of Completion of Testing : 07/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall 1st Lift	M-40	Weight in kg	8.573	8.616	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.659			
A3				8.615			
A1			Compressive Strength in N/mm^2	36.86	36.87		
A2				37.18			
A3				36.57			

Note: 1. The above tested concrete cube are casted on date 30/09/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/163(C) Date : 10/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Municipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/01 Date: 03/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/807

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 03/10/2023

11.Date of Commencement of Testing : 10/10/2023

12.Date of Completion of Testing : 10/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd & IIIrd Lift	M-40	Weight in kg	8.543	8.583	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.597			
A3				8.610			
A1			Compressive Strength in N/mm^2	35.28	35.57		
A2				35.97			
A3				35.46			

Note: 1. The above tested concrete cube are casted on date 03/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/164(D) Date : 11/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/02 Date: 04/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/808

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 04/10/2023

11.Date of Commencement of Testing : 11/10/2023

12.Date of Completion of Testing : 11/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd & IIIrd Lift	M-40	Weight in kg	8.635	8.611	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.547			
A3				8.652			
A1			Compressive Strength in N/mm^2	36.98	37.16		
A2				37.10			
A3				37.40			

Note: 1. The above tested concrete cube are casted on date 04/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/166(A) , Date : 13/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/03 Date: 06/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/809

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 06/10/2023

11.Date of Commencement of Testing : 13/10/2023

12.Date of Completion of Testing : 13/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IIIrd Lift	M-40	Weight in kg	8.526	8.548	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.560			
A3				8.558			
A1			Compressive Strength in N/mm^2	35.69	36.02		
A2				36.28			
A3				36.09			

Note: 1. The above tested concrete cube are casted on date 06/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/167(B) Date : 14/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/04 Date: 07/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/810

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 07/10/2023

11.Date of Commencement of Testing : 14/10/2023

12.Date of Completion of Testing : 14/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd Lift	M-40	Weight in kg	8.619	8.662	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.656			
A3				8.712			
A1			Compressive Strength in N/mm^2	36.77	36.48		
A2				36.19			
A3				36.49			

Note: 1. The above tested concrete cube are casted on date 07/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/172(D) Date : 20/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/05 Date: 13/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/811

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 13/10/2023

11.Date of Commencement of Testing : 20/10/2023

12.Date of Completion of Testing : 20/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Footing	M-40	Weight in kg	8.542	8.553	IS: 516 - (Part-1/Sec1) : 2021	...
A2				8.539			
A3				8.578			
A1			Compressive Strength in N/mm^2	35.98	35.65		
A2				35.26			
A3				35.71			

Note: 1. The above tested concrete cube are casted on date 13/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/173(B) Date : 21/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/06 Date: 14/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/812

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 14/10/2023

11.Date of Commencement of Testing : 21/10/2023

12.Date of Completion of Testing : 21/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Ist Lift	M-40	Weight in kg	8.689	8.686	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.643			
A3				8.725			
A1			Compressive Strength in N/mm^2	36.79	37.07		
A2				37.15			
A3				37.28			

Note: 1. The above tested concrete cube are casted on date 14/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B. a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOF

For S.M. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/174(C) Date : 23/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requisitioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/07 Date: 16/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/813

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 16/10/2023

11.Date of Commencement of Testing : 23/10/2023

12.Date of Completion of Testing : 23/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Footing	M-40	Weight in kg	8.576	8.623	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.659			
A3				8.635			
A1			Compressive Strength in N/mm^2	36.79	36.67		
A2				36.42			
A3				36.80			

Note: 1. The above tested concrete cube are casted on date 16/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

S M CONSULTANTS PORT BLAIR TESTING LABORATORY

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/175(D) Date : 24/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/08 Date: 17/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/814

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 17/10/2023

11.Date of Commencement of Testing : 24/10/2023

12.Date of Completion of Testing : 24/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Ist Lift	M-40	Weight in kg	8.665	8.611	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.597			
A3				8.570			
A1			Compressive Strength in N/mm^2	35.98	36.28		
A2				36.40			
A3				36.47			

Note: 1. The above tested concrete cube are casted on date 17/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

S.M CONSULTANTS PORT BLAIR TESTING LABORATORY

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/176(C) Date : 25/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Fumiture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/09 Date: 18/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/815

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 18/10/2023

11.Date of Commencement of Testing : 25/10/2023

12.Date of Completion of Testing : 25/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd & IIIrd Lift	M-40	Weight in kg	8.563	8.638	IS: 516 - (Part-1/Sec1) : 2021	...
A2				8.654			
A3				8.697			
A1			Compressive Strength in N/mm^2	36.97	36.73		
A2				36.80			
A3				36.43			

Note: 1. The above tested concrete cube are casted on date 18/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B.a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/177(A) Date : 26/10/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Municipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/10 Date: 19/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/816

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 19/10/2023

11.Date of Commencement of Testing : 26/10/2023

12.Date of Completion of Testing : 26/10/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd & IIIrd Lift	M-40	Weight in kg	8.536	8.563	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.610			
A3				8.543			
A1			Compressive Strength in N/mm^2	35.68	35.56		
A2				35.29			
A3				35.70			

Note: 1. The above tested concrete cube are casted on date 19/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B.:a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/183(E) Date : 02/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/11 Date: 26/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/817

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 26/10/2023

11.Date of Commencement of Testing : 02/11/2023

12.Date of Completion of Testing : 02/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Footing	M-40	Weight in kg	8.546	8.564	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.597			
A3				8.550			
A1			Compressive Strength in N/mm^2	36.25	36.10		
A2				35.87			
A3				36.17			

Note: 1. The above tested concrete cube are casted on date 26/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/184(B) Date : 03/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/12 Date: 27/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/818

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 27/10/2023

11.Date of Commencement of Testing : 03/11/2023

12.Date of Completion of Testing : 03/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Ist Lift	M-40	Weight in kg	8.635	8.658	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.652			
A3				8.688			
A1			Compressive Strength in N/mm^2	36.73	37.10		
A2				36.99			
A3				37.59			

Note: 1. The above tested concrete cube are casted on date 27/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOF

For S.M. CONSULTANTS

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SM. CONSULTANTS

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15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/185(B) Date : 04/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/13 Date: 28/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/819

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 28/10/2023

11.Date of Commencement of Testing : 04/11/2023

12.Date of Completion of Testing : 04/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Footing	M-40	Weight in kg	8.662	8.704	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.714			
A3				8.735			
A1			Compressive Strength in N/mm^2	37.52	37.17		
A2				36.95			
A3				37.04			

Note: 1. The above tested concrete cube are casted on date 28/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B.a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY

S.M. CONSULTANTS PORT BLAIR TESTING LABORATORY

For S.M. CONSULTANTS

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SM. CONSULTANTS

Branch Office: Plot No. 3/2, No 4, Near Saraswati Sishu Sishu Mandir Scchool, Pathargudda, Garacharma, Port Blair,S.Andaman,744 105
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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/186(A) Date : 06/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/14 Date: 30/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/820

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 30/10/2023

11.Date of Commencement of Testing : 06/11/2023

12.Date of Completion of Testing : 06/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Ist Lift	M-40	Weight in kg	8.725	8.725	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.698			
A3				8.753			
A1			Compressive Strength in N/mm^2	36.58	36.64		
A2				36.43			
A3				36.90			

Note: 1. The above tested concrete cube are casted on date 30/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/187(B) Date : 07/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/15 Date: 31/10/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/821

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 31/10/2023

11.Date of Commencement of Testing : 07/11/2023

12.Date of Completion of Testing : 07/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall Footing	M-40	Weight in kg	8.676	8.715	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.752			
A3				8.716			
A1			Compressive Strength in N/mm^2	36.55	36.93		
A2				37.52			
A3				36.71			

Note: 1. The above tested concrete cube are casted on date 31/10/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/188(B) Date : 08/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requisitioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/16 Date: 01/11/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/822

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 01/11/2023

11.Date of Commencement of Testing : 08/11/2023

12.Date of Completion of Testing : 08/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd & IIIrd Lift	M-40	Weight in kg	8.589	8.643	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.691			
A3				8.649			
A1			Compressive Strength in N/mm^2	36.58	36.69		
A2				37.20			
A3				36.29			

Note: 1. The above tested concrete cube are casted on date 01/11/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B.: a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/189(A) Date : 09/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/17 Date: 02/11/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/823

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 02/11/2023

11.Date of Commencement of Testing : 09/11/2023

12.Date of Completion of Testing : 09/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd & IIIrd Lift	M-40	Weight in kg	8.763	8.727	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.719			
A3				8.698			
A1			Compressive Strength in N/mm^2	36.59	37.09		
A2				37.56			
A3				37.11			

Note: 1. The above tested concrete cube are casted on date 02/11/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c)THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/190(B) Date : 10/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/18 Date: 03/11/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/824

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 03/11/2023

11.Date of Commencement of Testing : 10/11/2023

12.Date of Completion of Testing : 10/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd & IIIrd Lift	M-40	Weight in kg	8.643	8.664	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.667			
A3				8.683			
A1			Compressive Strength in N/mm^2	36.98	36.64		
A2				36.41			
A3				36.52			

Note: 1. The above tested concrete cube are casted on date 03/11/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

For S.M. CONSULTANTS

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SM. CONSULTANTS

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Registered Office: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981· Fax: (06782) 251982
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Format: No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/191(A) Date : 11/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/19 Date: 04/11/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/825

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 04/11/2023

11.Date of Commencement of Testing : 11/11/2023

12.Date of Completion of Testing : 11/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IIIrd Lift	M-40	Weight in kg	8.816	8.772	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.745			
A3				8.756			
A1			Compressive Strength in N/mm^2	37.52	37.33		
A2				37.16			
A3				37.32			

Note: 1. The above tested concrete cube are casted on date 04/11/2023

14.Information on sampling: The sampling of above sample is not done by this laboratory.

15. a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/192(A) Date : 13/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requistioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23 Date: 06/11/2023

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/20

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/826

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 06/11/2023

11.Date of Commencement of Testing : 13/11/2023

12.Date of Completion of Testing : 13/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IInd & IIIrd Lift	M-40	Weight in kg	8.645	8.653	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.673			
A3				8.640			
A1			Compressive Strength in N/mm^2	36.58	36.29		
A2				35.99			
A3				36.30			

Note: 1. The above tested concrete cube are casted on date 06/11/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY

For S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/20, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1.Report No. SMC/PB/193(A) Date : 14/11/2023

2.Name and Address of the Agency : M/s Surendra Infrastructure (P) Ltd.

3.Name of Requisitioner : Assistant Engineer-III (R/Works), Port Blair Muncipal Council.

4.Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work: Strengthing and Construction of Sea Wall.

5.Agreement No. : 01 (PBSPL) OF 2022-23

6.Reference no. of Letter : 02/SE/PBMC/PBSPL/2021-22/21 Date: 07/11/2023

7.Description of Sample : Concrete Cube

8.Identification of Sample : SMC/PB/827

9.Condition of Sample Received : 3 Nos of Concrete Cube has been given by Client with work order.

10.Date of Sample Received : 07/11/2023

11.Date of Commencement of Testing : 14/11/2023

12.Date of Completion of Testing : 14/11/2023

13.Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
A1	Sea Wall IIIrd Lift	M-40	Weight in kg	8.640	8.631	IS: 516 - (Part-1/Sec1) : 2021	---
A2				8.667			
A3				8.586			
A1			Compressive Strength in N/mm^2	36.50	36.61		
A2				36.89			
A3				36.43			

Note: 1. The above tested concrete cube are casted on date 07/11/2023

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a)THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b)THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c)THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATOR

S.M. CONSULTANTS PORT BLAIR

For S.M. CONSULTANTS

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Surendra Infrastructure (P) Ltd.

19/1, V.I.P. ROAD, JUNGLI GHAT, PORT BLAIR-744 103, Ø. : 233517, FAX: 03192 – 231781
Email – sursalepb@gmail.com

262/PB/406 09th Nov'2023

M/s S.M Consultants
Plot No.3/2/No.4
Pathergudda
Near SaraswatiShishuMandir School
Garacharma Post
Port Blair - 744105
Email: smconsultants11@gmail.com

Kind Attn: Mr.Barick(8280327339/07063903443)

SUB: CUBE TESTING

REF : AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155 DTD. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING.
S.W: STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,
Please arrange to submit report to Assistant Engineer-III(R/Works), Municipal Council against their following letter with a copy to us against their following Letter (Copy Enclosed) and raise Bill on us for our arranging Payment:

1. F.No:- 02/SE/PBMC/PBSPL/2021-22/77 dtd. 27th Sept'2023.
2. F.No:- 02/SE/PBMC/PBSPL/2021-22/78 dtd. 28th Sept'2023.
3. F.No:- 02/SE/PBMC/PBSPL/2021-22/79 dtd. 29th Sept'2023.
4. F.No:- 02/SE/PBMC/PBSPL/2021-22/79(A) dtd. 30th Sep'2023.
5. F.No:- 02/SE/PBMC/PBSPL/2021-22/01 dtd. 03rd Oct'2023.
6. F.No:- 02/SE/PBMC/PBSPL/2021-22/02 dtd. 04th Oct'2023.
7. F.No:- 02/SE/PBMC/PBSPL/2021-22/03 dtd. 06th Oct'2023.
8. F.No:- 02/SE/PBMC/PBSPL/2021-22/04 dtd. 07th Oct'2023
9. F.No:- 02/SE/PBMC/PBSPL/2021-22/05 dtd. 13th Oct'2023.
10. F.No:- 02/SE/PBMC/PBSPL/2021-22/06 dtd. 14th Oct'2023.
11. F.No:- 02/SE/PBMC/PBSPL/2021-22/07 dtd. 16th Oct'2023.
12. F.No:- 02/SE/PBMC/PBSPL/2021-22/08 dtd. 17th Oct'2023.
13. F.No:- 02/SE/PBMC/PBSPL/2021-22/09 dtd. 18th Oct'2023.
14. F.No:- 02/SE/PBMC/PBSPL/2021-22/10 dtd. 19th Oct'2023.
15. F.No:- 02/SE/PBMC/PBSPL/2021-22/11 dtd. 26th Oct'2023.
16. F.No:- 02/SE/PBMC/PBSPL/2021-22/12 dtd. 27th Oct'2023.
17. F.No:- 02/SE/PBMC/PBSPL/2021-22/13 dtd. 28th Oct'2023.
18. F.No:- 02/SE/PBMC/PBSPL/2021-22/14 dtd. 30th Oct'2023.
19. F.No:- 02/SE/PBMC/PBSPL/2021-22/15 dtd. 31st Oct'2023.
20. F.No:- 02/SE/PBMC/PBSPL/2021-22/16 dtd. 01st Nov'2023.
21. F.No:- 02/SE/PBMC/PBSPL/2021-22/17 dtd. 02nd Nov'2023.
22. F.No:- 02/SE/PBMC/PBSPL/2021-22/18 dtd. 03rd Nov'2023.
23. F.No:- 02/SE/PBMC/PBSPL/2021-22/19 dtd. 04th Nov'2023.
24. F.No:- 02/SE/PBMC/PBSPL/2021-22/20 dtd. 06th Nov'2023.
25. F.No:- 02/SE/PBMC/PBSPL/2021-22/21 dtd. 07th Nov'2023.

Please acknowledge receipt.

Thanking you
SURENDRA INFRASTRUCTURE PVT. LTD

Received
PORT BLAIR

9, EZRA STREET, CALCUTTA 700001, INDIA. Ø: 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/ 77

Date: 27/9/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture. Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall Footing
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/58 Date: 28/9/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

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Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

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4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall 1st, 2nd lift-
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

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Sig. of Contractor

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/79

Date:29/9/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade; Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

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Assistant Engineer-III (R/Works)
Municipal Council

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4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall footing 4th lift
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/ 79(1) Date: 20/9/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

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Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

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3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M 40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall 1st lift
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/ 01

Date: 3 /10/2023

To
M/S. S.M.Consultants
Patharguda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,.

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.
This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

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1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall IInd & IIIrd Lift
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/02 Date: 24/10/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

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1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
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Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplonade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M_{40}
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea Wall 2nd & 3rd lift
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/03 Date: 6/10/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

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Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

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2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
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Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	[illegible]
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/04

Date: 7/6/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

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Yours faithfully

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Municipal Council

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Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M 40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall Dual Lift
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/05

Date: 13/10/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

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Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall footing
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

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Sig. of AE

Sig. of Contractor

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/ 06 Date: 14/5/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

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Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall Pt 6.4
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/07 Date: 16/10/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M_{40}
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall footing
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/06

Date: 17/10/2023

To
M/S. S.M.Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall Jetty left
11. Date of Casting	:	
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

Surendra Infrastructure (P) Ltd.
101, V I P ROAD, BRIGHTCHAT, PORTBLAIR-744102 (A&N ISLANDS)
Email : surendrapb@gmail.com

To/PB-M0 03rd Oct'2023

Assistant Engineer III (R/Works)
Municipal Council.
Port Blair

Sub

REF: AGREEMENT NO.: 01 (PBSPL) OF 2022-23
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING, S.W: STRENGHENING & CONSTRUCTION OF SEA Wall.

Dear Sir,

Please find enclosed Test Reports from SM Consultants, Pathargudda, Port Blair against your following Letters.

S.No.	Your Letter No.	SM Report No.
01.	F.No.02/SE/PBMC/PBSPL/2021-22/61 dtd. 28th Aug'2023	SMC/132N dtd. 04th Sept 2023
02.	F.No.02/SE/PBMC/PBSPL/2021-22/62 dtd. 29th Aug'2023	SMC/133E dtd. 05th Sept 2023
03.	F.No.02/SE/PBMC/PBSPL/2021-22/62A dtd. 31st Aug'2023	SMC/135C dtd. 07th Sept 2023
04.	F.No.02/SE/PBMC/PBSPL/2021-22/63A dtd. 01st Sept'2023	SMC/PB/136B dtd. 08th Sept 2023
05.	F.No.02/SE/PBMC/PBSPL/2021-22/64A dtd. 04th Sept'2023	SMC/PB/138E dtd. 11th Sept 2023
06.	F.No.02/SE/PBMC/PBSPL/2021-22/65A dtd. 05th Sept'2023	SMC/PB/139C dtd. 12th Sept 2023
07.	F.No.02/SE/PBMC/PBSPL/2021-22/66 dtd. 12th Sept'2023	SMC/PB/145C dtd. 19th Sept 2023
08.	F.No.02/SE/PBMC/PBSPL/2021-22/66A dtd. 13th Sept'2023	SMC/PB/146B dtd. 20th Sept 2023
09.	F.No.02/SE/PBMC/PBSPL/2021-22/68A dtd. 14th Sept'2023	SMC/PB/147A dtd. 21st Sept 2023
10.	F.No.02/SE/PBMC/PBSPL/2021-22/70 dtd. 15th Sept'2023	SMC/PB/148C dtd. 22nd Sept 2023

04/10/23

Kindly acknowledge receipt.

Thanking you,

Sincerely yours
SURENDRA INFRASTRUCTURE PVT LTD
Surendra Infrastructure Pvt. Ltd.

Director/Authorised Signatory

Encl: As Above (10 Sheets)

C.C: Executive Engineer-III (R/Wks), PBMC - for information

9, EZRA STREET, CALCUTTA 700001, INDIA. Ph: 225 3385/3382, FAX: 91-033-225 3152
Email: ursales8@gmail.com

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S.M. CONSULTANTS

Branch Office: Plot No-3,2, No-1, Pathanpukhi, Near Sarkari Sishu Mandir School, Silchar,P.O. Central Silchar, Pin-788009, Cell no.-9864[illegible]
Central Office: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Cell no.-[illegible]
Registered Office: AT- Henkapada Chhak, P.O-Sonhat, Dist-Balasore-756002, Cell no. Ph-(06782) 251281, Fax-(06782) 251281
State Office: Plot No-1, P & T Colony, Opposite RTA Office, Tinmaliphar, Secondary-1-744105 - Ph: (03192) 262851, Fax-
Web: http://www.smcindia.com, e-mail: support@smcindia.com

Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/05/2013

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/132N : Date 04/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Cladding, Walking Track, Street Lighting, Street Furniture, Service Core Trench and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/61 Date: 28/08/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 04/09/2023
11. Date of Commencement of Testing : 04/09/2023
12. Date of Completion of Testing : 04/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Foundation (A1, A2, A3)	M-40	Weight in kg	8.301	8.305	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.299			
3				8.315			
1			Compressive Strength in N/mm^2	32.15	31.33		
2				30.65			
3				31.20			

Note: 1. The above tested concrete cube are casted on date 28/08/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

S.M. CONSULTANTS

Branch Office: Plot No-372, No-4, Pallempukhi, Near Saraswati Sishu Mandir School, Station,P.O. Garacharma, Port Blair, A& N Islands-744103
Central Office: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha ,Ph: (0674) 2590632 -25 -
Registered Office: At- Hemkapada Chhak, P.O-Sunitat, Dist-Baleswar-756002, Odisha. Ph-(06782) 251931 - Fax: (06782) 251932
State Office: Plot No-1, P & T Colony, Opposite RTA Office, Taumulgher, Secunderabad -500015 - Ph: (040) 33903351 Tele-Fax: 27711623
Web: http://www.smcindia.com; e-mail: support@smcindia.com

Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/01/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/133E : Date 05/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/62 Date: 29/08/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 05/09/2023
11. Date of Commencement of Testing : 05/09/2023
12. Date of Completion of Testing : 05/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.351	8.342	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.306			
3				8.369			
1			Compressive Strength in N/mm²	30.64	31.43		
2				32.51			
3				31.13			

Note: 1. The above tested concrete cube are casted on date 29/08/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

S.M. CONSULTANTS

Branch Office: Plot No-3 2, No-I, Pathanpalda, Near Saraswati School, Sector-31, P.O. Chandigarh, P.S. [illegible]
Central Office: Plot No-130, Manchester Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha, Ph: 0674) 2551931-35
Registered Office: AT- Hemkapada Chhak, P.O-Naglur, Dist-Bhubaneswar-752002, Odisha, Ph-(0674) 2551781, Fax (0674) 2551782
State Office: Plot No-I, P.A. T Colony, Opposite RTA Office, Tamulpur, Secunderabad-500015, Ph: (040) 3 [illegible]
Web: http://www.smcindia.com, e-mail: [illegible]

Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/135C : Date 07/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/62A Date: 31/08/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 07/09/2023
11. Date of Commencement of Testing : 07/09/2023
12. Date of Completion of Testing : 07/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall Foundation (A1, A2, A3)	M-40	Weight in kg	8.299	8.326	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.354			
3				8.324			
1			Compressive Strength in N/mm^2	31.16	30.67		
2				30.17			
3				30.66			

Note: 1. The above tested concrete cube are casted on date 31/08/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

S.M. CONSULTANTS

Branch Office: Plot No. 3/2, No. 1, Pathergaon, Ma... Central Office: Plot No. 1(B), Mani... Registered Office: At- Hemlock Colony, P.O. ... State Office: Plot No-1, P.A. I Colony, Opposite RIA Office, ... Web: http://www.smcbaruah.com, e-mail: ...

Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/03/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/136B : Date 08/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/63A Date: 01/09/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 08/09/2023
11. Date of Commencement of Testing : 08/09/2023
12. Date of Completion of Testing : 08/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.351	8.350	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.331			
3				8.367			
1			Compressive Strength in N/mm²	30.43	31.33		
2				31.49			
3				32.06			

Note: 1. The above tested concrete cube are casted on date 01/09/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

S.M. CONSULTANTS

Branch Office: Plot No-3/2, No-4, Pathergadda, Near Saraswati Sishu Mandir School, Sirsur, P.O. Gandhinagar, Port Blair, [illegible]
Central Office: Plot No-130,Matcheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha Ph-(0674) [illegible]
Registered Office: AT- Hemkapada Chhak, P.O-Sunlait, Dist-Balasore-756093, Odisha Ph-(06782) [illegible]
State Office: Plot No-1, P & T Colony, Opposite RTA Office, Hanumalpher, Secunderabad-500015 Tel (040) [illegible]
Web: http://www.smconsultancy.com e-mail: support@smindia.com

Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/13SE : Date 11/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/64A Date: 04/09/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 11/09/2023
11. Date of Commencement of Testing : 11/09/2023
12. Date of Completion of Testing : 11/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall Foundation (A1, A2, A3)	M-40	Weight in kg	8.467	8.396	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.331			
3				8.391			
1			Compressive Strength in N/mm²	31.11	31.62		
2				31.07			
3				32.67			

Note: 1. The above tested concrete cube are casted on date 04/09/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

Scanned with OKEN Scanner

S.M. CONSULTANTS

Branch Office: Plot No-302, No-4, Patharpudda, Near Saraswati Sishu Mandir School, Unkon,P.O. Gopalpur-1, Post Bhubaneswar-751010, Dist.-Khurda, Pin-752101
Central Office: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha, Pin-(0674) 2564082, Fax: (0674) 2564083
Registered Office: At- Hemkapada Chhak, P.O-Sunhat, Dist-Odisha-754002, Odisha, Ph-(06782) 251783, Fax: (06782) 251783
State Office: Plot No-1, P & T Colony, Opposite RTA Office, Tirumalgiri, Secunderabad - 500015 - Pin (040) 23005451, Telefax : 23511633
Web: http://www.smcindia.com, e-mail: support@smcindia.com

Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/01/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/ 139C : Date 12/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/65A Date: 05/09/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 12/09/2023
11. Date of Commencement of Testing : 12/09/2023
12. Date of Completion of Testing : 12/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.298	8.344	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.351			
3				8.382			
1			Compressive Strength in N/mm²	30.16	30.51		
2				30.60			
3				30.77			

Note: 1. The above tested concrete cube are casted on date 05/09/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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S.M. CONSULTANTS

Branch Office: Plot No-372, No-4, Pathagudda, Near Saraswati Sishu Mandir School, Station P.O. Gangtok-737101, Sikkim, Ph: (03592) 244 [illegible]
Central Office: Plot No-130,Maacheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha ,Ph: (0674) 2586742 -45 ·
Registered Office: AT- Hemkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha Ph-(06782) 251931· Fax: (06782) 251932
State Office: Plot No-1, P & T Colony, Opposite RTA Office, Tirumalgher, Secunderabad -500015 · Ph: (040) 33665851 Tele-Fax: 27741033
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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/145C : Date 19/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/66 Date: 12/09/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 19/09/2023
11. Date of Commencement of Testing : 19/09/2023
12. Date of Completion of Testing : 19/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall Foundation (A1, A2, A3)	M-40	Weight in kg	8.305	8.326	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.346			
3				8.327			
1			Compressive Strength in N/mm²	30.69	31.27		
2				32.06			
3				31.07			

Note: 1. The above tested concrete cube are casted on date 12/09/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.

b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.

c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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S.M. CONSULTANTS

Branch Office: Plot No-3/2, No-4, Pathapuddu, Near Saraswati Sishu Mandir School, Station P.O. Garacharma, Post Bluir,S.Andaman-744 103
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Registered Office: AT- Henkapada Chhak, P.O-Sunhat, Dist-Balasore-756002, Odisha. Ph-(06782) 251981- Fax: (06782) 251982
State Office: Plot No-1, P & T Colony, Opposite RTA Office, Tirumulgher, Secunderabad -50/015 - Ph: (040) 33605851 Tele-Fax: 27741633
Web: http://www.smeindia.com; e-mail: support@smeindia.com

Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/ 146B : Date 20/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/66A Date: 13/09/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 20/09/2023
11. Date of Commencement of Testing : 20/09/2023
12. Date of Completion of Testing : 20/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.325	8.328	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.297			
3				8.361			
1			Compressive Strength in N/mm²	30.46	30.13		
2				30.19			
3				29.74			

Note: 1. The above tested concrete cube are casted on date 13/09/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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S.M. CONSULTANTS

Branch Office: Plot No-3/2, No-4, Pathargadia, Near Saraswati Sishu Mandir School, Station,P.O. Garacharma, Port Blair-744103 (A&N Islands)
Central Office: Plot No-130,Mancheswar Industrial Estate, P.O: Rasulgarh, Bhubaneswar-751010, Odisha ,Ph: (0674) 2570682 -85 ·
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State Office: Plot No-1, P & T Colony, Opposite RTA Office, Tirumalgiri, Secunderabad -500015 · Ph: (040) 33005851 Tele-Fax: 27741623
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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/147A : Date 21/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/68A Date: 14/09/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 21/09/2023
11. Date of Commencement of Testing : 21/09/2023
12. Date of Completion of Testing : 21/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall Foundation (A1, A2, A3)	M-40	Weight in kg	8.296	8.308	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.300			
3				8.327			
1			Compressive Strength in N/mm^2	31.12	30.62		
2				29.76			
3				31.00			

Note: 1. The above tested concrete cube are casted on date 14/09/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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S.M. CONSULTANTS

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Web: http://www.smcindia.com; e-mail: support@smcindia.com

Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/ 148C : Date 22/09/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/70 Date: 15/09/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 22/09/2023
11. Date of Commencement of Testing : 22/09/2023
12. Date of Completion of Testing : 22/09/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Sea Wall 1st Lift (A1, A2, A3)	M-40	Weight in kg	8.326	8.320	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.335			
3				8.300			
1			Compressive Strength in N/mm²	30.12	30.99		
2				31.74			
3				31.11			

Note: 1. The above tested concrete cube are casted on date 15/09/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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Surendra Infrastructure (P) Ltd.
19/1, V.I.P. ROAD, JUNGLI GHAT, PORTBLAIR-744 103. Ph : 233517, FAX: 03192 – 231781
Email – sursalepb@gmail.com

262/PB/277

22nd July '2023

Assistant Engineer-III (R/Works)
Municipal Council,
Port Blair

REF: AGREEMENT NO.: 01 (PBSPL) OF 2022-23
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING. S.W: STRENGHENING & CONSTRUCTIION OF SEA WALL.

Dear Sir,

Please find enclosed Test Reports from SM Consultants, Pathergudda, Port Blair against your following Letters.

S.No.	Your Letter No.	SM Report No.
01.	F.No. 02/SE/PBMC/PBSPL/2021-22/59 dtd. 06th July 2023	SMC/89A dtd. 14th July 2023 SMC/89B dtd. 14th July 2023
02.	F.No. 02/SE/PBMC/PBSPL/2021-22/57 dtd. 30th June 2023	SMC/84B dtd. 07th July 2023
03.	F.No. 02/SE/PBMC/PBSPL/2021-22/61 dtd. 13th June 2023	SMC/87B dtd. 12th July 2023 SMC/87C dtd. 12th July 2023 SMC/87D dtd. 12th July 2023 SMC/87E dtd. 12th July 2023
04.	F.No. 02/SE/PBMC/PBSPL/2021-22/60 dtd. 13th June 2023	SMC/PB/95B dtd. 21st July 2023

Thanking you,

Sincerely yours
SURENDRA INFRASTRUCTURE PVT LTD
Surendra Infrastructure Pvt. Ltd.

Encl: As Above (24 Sheets)

C.C: Executive Engineer-III (R/Wks), PBMC – FOR INFORMATION

9, EZRA STREET, CALCUTTA 700001, INDIA. Ph: 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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Format No. :F-27, Issue No. : 01, Revision : 05, Revision Date : 21/10/2020, Issue Date : 02/04/2012

TEST ON REINFORCEMENT STEEL BARS

1. Report No. SMC/89A : Date 14/07/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way. Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/59 Date: 06/07/2023
7. Description of Sample : Reinforcement Steel
8. Identification of Sample : SMC/PB/
9. Condition of Sample Received : 3 Nos of Each dia of steel sample has been given by the client with the work order.
10. Date of Sample Received : 06/07/2023
11. Date of Commencement of Testing : 07/07/2023
12. Date of Completion of Testing : 14/07/2023
13. Test Result : Physical Properties

Sl. No.	Nominal Dia of Bar as requisitioner	Test Parameters	Observed Value	Method of Test Adopte	Requirement as per standard specification IS 1786:2008 (Reaffirmed 2018)
	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Wt./RM in Kg	0.394 0.396 0.392	IS 1786 : 2008 (Reaffirmed 2018)	0.395 (-8%)
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.615 0.616 0.614		0.617 (-8%)
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.886 0.885 0.884		0.888 (-6%)
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		1.581 1.578 1.579		1.58 (-6%)
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		2.461 2.469 2.468		2.47 (-4%)

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Phone : (03192) 250931
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Email : smconsultants11@gmail.com

	Nominal Dia of Bar as requisitioner	Test Parameters	Observed Value	Method of Test Adopted	Requirement as per standard specification IS 1786:2008 (Reaffirmed 2018)
02	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Effective Cross Sectional area in mm^2	50.19 50.45 50.57	IS 1786 : 2008 (Reaffirmed 2018)	50.3
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		78.34 78.47 78.22		78.6
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		112.87 112.74 112.61		113.1
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		201.40 201.01 201.15		201.2
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		313.50 314.52 314.39		314.3
03	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Ultimate Tensile Strength in N/mm^2	628.56 633.15 631.68	IS 1608 (Part 1): 2018	Fe-415=485 Fe-415D=500 Fe-415S=---- Fe-500=545 Fe-500D=565 Fe-500S=---- Fe-550=585 Fe-550D=600 Fe-600=660 Fe-650=700 Fe-700=770 (Min.)
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		632.44 627.78 631.25		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		635.56 632.18 629.84		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		632.86 633.41 630.78		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		628.82 632.38 634.15		

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Email: smconsultants11@gmail.com

	Nominal Dia of Bar as requisitioner	Test Parameters	Observed Value	Method of Test Adopted	Requirement as per standard specification IS 1786:2008 (Reaffirmed 2018)
04	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Yield Stress in N/mm^2	547.22 542.56 545.34	IS 1608 (Part 1): 2018	Fe-415=415(Min.) Fe-415D=415 (Min.) Fe-415S= 415 (Min.) Fe-415S= 540 (Max.) Fe-500=500 (Min.) Fe-500D=500 (Min.) Fe-500S= 500 (Min.) Fe-500S= 650 (Max.) Fe-550=550 (Min.) Fe-550D=550 (Min.) Fe-600=600 (Min.) Fe-650=650 (Min.) Fe-700=700 (Min.)
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		545.54 541.69 544.28		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		547.57 546.42 548.58		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		546.52 544.46 547.91		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		549.71 547.37 543.83		
05	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	% of Elongation	21.50 19.00 20.50	IS 1608 (Part 1): 2018	Fe-415=14.5 Fe-415D=18.0 Fe-415S=18.0 Fe-500=12.0 Fe-500D=16.0 Fe-500S=16.0 Fe-550=10.0 Fe-550D=14.5 Fe-600=10.0 Fe-650=10.0 Fe-700=10.0 (Min.)
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		20.00 21.00 21.50		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		20.50 22.00 21.00		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		18.50 19.50 20.00		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		20.50 21.00 19.00		

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	Nominal Dia of Bar as requisitioner	Test Parameter	Observed Value	Method of Test Adopted	Requirement as per standard specification IS 1786:2008 (Reaffirmed 2018)
06	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Bend Test	No Rupture / No Crack Visible	IS 1599:2012	No Rupture or Cracks visible to a person of Normal or Corrected vision on the Bend Portion .
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		No Rupture / No Crack Visible		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		No Rupture / No Crack Visible		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		No Rupture / No Crack Visible		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		No Rupture / No Crack Visible		
07	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Re-Bend Test	No Rupture / No Crack Visible	IS 1786:2008 (Reaffirmed 2018)	No Rupture or Cracks visible to a person of Normal or Corrected vision on the Re-Bend Portion
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		No Rupture / No Crack Visible		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		No Rupture / No Crack Visible		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		No Rupture / No Crack Visible		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		No Rupture / No Crack Visible		

Remarks: Above steel bars are satisfactory with respect to their Tensile Strength, Yield Stress, % of Elongation, Bend & Re-bend properties for Fe-500D grade of steel bars as per IS: 1786 – 2008 (Reaff. 2018).

1.THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2.THE TEST RESULT RELATES ONLY TO THE ITEM TESTED
3.THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THIS TESTING LABORATORY
4.THESAMPLES WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED

For S.M. CONSULTANTS

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Format No. :F-27, Issue No. : 01, Revision : 05, Revision Date : 21/10/2020, Issue Date : 02/04/2012

CHEMICAL TEST ON REINFORCEMENT STEEL BARS

Report No. SMC/89B : Date 14/07/2023
Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/59 Date: 06/07/2023
7. Description of Sample : Reinforcement Steel
8. Identification of Sample : SMC/PB/
9. Condition of Sample Received : 3 Nos of Each dia of steel sample has been given by the client with the work order.
10. Date of Sample Received : 06/07/2023
11. Date of Commencement of Testing : 07/07/2023
12. Date of Completion of Testing : 14/07/2023
13. Test Result : Chemical Properties

Sl. No.	Nominal Dia of Bar as requisitioner	Test Parameters	Observed Value	Method of Test Adopted	Requirement as per standard specification IS 1786:2008 (Reaffirmed 2018)
	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Carbon 'C' in %	0.17	IS 228 (Part 1) : 1987 (Reaffirmed 2007)	Fe415=0.30 Fe415D=0.30 Fe415S=0.25 Fe500=0.30 Fe500D=0.25 Fe500S=0.32 Fe550=0.30 Fe550D=0.25 Fe600=0.30 Fe650=0.32 Fe700=0.32 (Max.)
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.18		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.16		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.17		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.19		

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	Nominal Dia of Bar as per requisitioner	Test Parameters	Observed Value	Method of Test Adopted	Requirement as per standard specification IS 1786:2008 (Reaffirmed 2018)
02	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Sulphur 'S' in %	0.026	IS 228 (Part 9) : 1989 (Reaffirmed 2014)	Fe415=0.060 Fe415D=0.045 Fe415S=0.040 Fe500=0.055 Fe500D=0.040 Fe500S=0.040 Fe550=0.055 Fe550D=0.040 Fe600=0.040 Fe650=0.040 Fe700=0.040 (Max.)
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.024		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.025		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.026		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.023		
03	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Phosphorus 'P' in %	0.030	IS 228 (Part 3) : 1987 (Reaffirmed 2012)	Fe415=0.060 Fe415D=0.045 Fe415S=0.040 Fe500=0.055 Fe500D=0.040 Fe500S=0.040 Fe550=0.055 Fe550D=0.040 Fe600=0.040 Fe650=0.040 Fe700=0.040 (Max.)
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.031		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.032		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.032		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.033		

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	Nominal Dia of Bar as per requisitioner	Test Parameters	Observed Value	Method of Test Adopted	Requirement as per standard specification IS 1786:2008 (Reaffirmed 2013)
04	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Sulphur + Phosphorus 'S+P' in %	0.056	IS 228 (Part 9) : 1989 (Reaffirmed 2014)	Fe415=0.110 Fe415D=0.085 Fe415S=0.075 Fe500=0.105 Fe500D=0.075 Fe500S=0.075 Fe550=0.100 Fe550D=0.075 Fe600=0.075 Fe650=0.075 Fe700=0.075 (Max.)
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.055		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.057		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.058		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.056		
05	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Manganese 'Mn' in %	0.89	IS 228 (Part 2) : 1987 (Reaffirmed 1997)	-----
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.87		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.85		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.88		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.86		
06	08 mm TMT (CRS) (Balaji Shakti. FE 500D)	Silicon 'Si' in %	0.17	IS 228 (Part 11) 1990 (Reaffirmed 1994)	------
	10 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.15		
	12 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.16		
	16 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.18		
	20 mm TMT (CRS) (Balaji Shakti. FE 500D)		0.1		

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	Nominal Dia of Bar as per requisitioner	Test Parameters	Observed Value	Method of Test Adopted	Requirement as per standard specification IS 1786:2008 (Reaffirmed 2018)
07	08 mm TMT (CRS) (Balaji Shakti, FE 500D)	Chromium 'Cr' in %	0.57	IS 228 (Part 2) : 1987 (Reaffirmed 1997)	-----
	10 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.55		
	12 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.58		
	16 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.59		
	20 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.56		
08	08 mm TMT (CRS) (Balaji Shakti, FE 500D)	Copper 'Cu' in %	0.29	IS 228 (Part 11) 1990 (Reaffirmed 1994)	-----
	10 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.27		
	12 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.25		
	16 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.28		
	20 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.26		
09	08 mm TMT (CRS) (Balaji Shakti, FE 500D)	Total Corrosion Resistant Element	0.907	IS 228 (Part 2) : 1987 (Reaffirmed 1997)	-----
	10 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.913		
	12 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.882		
	16 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.898		
	20 mm TMT (CRS) (Balaji Shakti, FE 500D)		0.910		

Note- The above all dia steel bars are satisfied to Fe500D grade steel so far as their chemical composition like C, S, P,P+S, Mn, Si,Cr, & Cu properties are concerned as per IS:1786-2008 (Reaff. 2018).

1.THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2.THE TEST RESULT RELATES ONLY TO THE ITEM TESTED
3.THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THIS TESTING LABORATORY
4.THE SAMPLES WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED

For S.M. CONSULTANTS

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S.M. CONSULTANTS

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Format No. : F-27, Issue No. : 01, Revision: 05, Revision Date: 21/10/2020, Issue Date: 02/04/2012

15CM CEMENT CONCRETE CUBE TEST REPORT

1. Report No. SMC/84B : Date 07/07/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/57 Date: 30/06/2023
7. Description of Sample : Concrete Cube
8. Identification of Sample : SMC/PB/
9. Condition of Sample Received : 03 Nos of Concrete Cube has been given by Client with work order.
10. Date of Sample Received : 07/07/2023
11. Date of Commencement of Testing : 07/07/2023
12. Date of Completion of Testing : 07/07/2023
13. Test Result : 07 days Compressive Strength

Sl. No.	Reference of Cube	Grade of Concrete	Test Parameters	Observed Value		Method of Test Adopted	Requirement as per standard specification IS 456:2000 (Reaff. 2021)
				Individual	Average		
1	Trial Mix (A1, A2, A3)	M-40	Weight in kg	8.397	8.392	IS: 516 - (Part-1/Sec1) : 2021	----
2				8.403			
3				8.377			
1			Compressive Strength in N/mm^2	35.69	34.92		
2				34.37			
3				34.71			

Note: 1. The above tested concrete cube are casted on date 30/06/2023.

14. Information on sampling: The sampling of above sample is not done by this laboratory.

15. N.B a) THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
b) THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
c) THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.

For S.M. CONSULTANTS

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Format No. :F-27, Issue No. : 01, Revision : 05, Revision Date : 21/10/2020, Issue Date : 02/04/2012

PHYSICAL TEST OF CEMENT SAMPLE

1. Report No. SMC/87B : Date 12/07/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/61 Date: 13/06/2023
7. Description of Sample : Cement
8. Identification of Sample : SMC/PB/415
9. Condition of Sample Received : 1 bag of Cement Sample (Brand – Ramco, Type-OPC 43 Grade) has been given by the client with the work order.
10. Date of Sample Received : 13/06/2023
11. Date of Commencement of Testing : 14/06/2023
12. Date of Completion of Testing : 12/07/2023
13. Test Result : Physical Properties

Sl. No.	Sample Reference (if any)	Test Parameter	Observed value	Method of Test Adopted as per Standards	Requirement as per Standard Specifications IS : 269-2015 (Reaff-2020)
1	Cement (Ramco, OPC 43 Grade)	Standard consistency (%)	28.75	IS:4031(Part 4) – 1988 (Reaffirmed 2019)	-----
2		Initial Setting Time, (minutes)	160	IS:4031(Part 5) – 1988 (Reaffirmed 2019)	Not less than 30 minutes.
3		Final Setting Time, (minutes)	255		Not More than 600 minutes.
4		Fineness by Blaine's air permeability (m^2/kg)	275	IS:4031(Part 2) – 1999 (Reaffirmed 2018)	Min. 225 m^2/kg
5		Soundness by Le- Chatelier Method (mm)	1.2	IS:4031(Part 4) – 1988 (Reaffirmed 2019)	Max. 10 mm
6		Compressive Strength at 72±1 h, (N/mm^2) (Avg.)	28.9	IS:4031(Part 6) – 1988 (Reaffirmed 2019)	Min. 23.0 N/mm^2
7		Compressive Strength at 168±2 h, (N/mm^2) (Avg.)	38.5		Min. 33.0 N/mm^2
8		Compressive Strength at 672±4 h, (N/mm^2) (Avg.)	49.6		Min. 43.0 N/mm^2 Max. 58.0 N/mm^2

14. Concluding Remarks: The above cement sample is satisfied as per IS 269:2015

15. NB 1. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLES WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

For S.M. CONSULTANTS

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Format No. :F-27, Issue No. : 01, Revision : 05, Revision Date : 21/10/2020, Issue Date : 02/04/2012

CHEMICAL TEST ON CEMENT SAMPLE

Report No. SMC/87C : Date 12/07/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/61 Date: 13/06/2023
7. Description of Sample : Cement
8. Identification of Sample : SMC/PB/415
9. Condition of Sample Received : 1 bag of Cement Sample (Brand – Ramco, Type-OPC 43 Grade) has been given by the client with the work order.
10. Date of Sample Received : 13/06/2023
11. Date of Commencement of Testing : 14/06/2023
12. Date of Completion of Testing : 12/07/2023
13. Test Result : Chemical Properties

Sl. No.	Sample Reference (if any)	Test Parameter	Observed value	Method of Test Adopted as per Standards	Requirement as per Standard Specifications IS : 269-2015 (Reaff-2020)
1	Cement (Ramco, OPC 43 Grade)	Loss on ignition (%by mass)	2.43	IS 4032:1985 (Reaff-2019)	Max. 5.0
2		Magnesia as MgO (% by mass)	2.52		Max. 6.0
3		Total Sulphur content calculated as Sulphuric anhydride (SO_3)(% by mass)	1.72		Max. 3.5
4		Insoluble residue (% by mass)	2.61		Max. 5.0
5		Chloride content (% by mass)	BDL		Max. 0.1 Max. 0.05 for prestressed structure
6		Ratio of % of lime to % of silica, Alumina & Iron oxide when calculated by the formula $\frac{CaO - 0.7\,SO_3}{2.8SiO_2 + 1.2Al_2O_3 + 0.65Fe_2O_3}$	0.81		0.66-1.02
7		Ratio of percentage of Alumina to that of Iron oxide	0.77		Min. 0.66

*BDL – BELOW DETECTION LEVEL

16. Concluding Remarks: The above cement sample is satisfied as per IS 269:2015

17. NB 1. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLES WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

For S.M. CONSULTANTS

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Format No. :F-27, Issue No. : 01, Revision : 05, Revision Date : 21/10/2020, Issue Date : 02/04/2012

PHYSICAL TEST OF CEMENT SAMPLE

1. Report No. SMC/87D : Date 12/07/2023
2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/61 Date: 13/06/2023
7. Description of Sample : Cement
8. Identification of Sample : SMC/PB/415
9. Condition of Sample Received : 1 bag of Cement Sample (Brand – Ultratech, Type-OPC 43 Grade) has been given by the client with the work order.
10. Date of Sample Received : 13/06/2023
11. Date of Commencement of Testing : 14/06/2023
12. Date of Completion of Testing : 12/07/2023
13. Test Result : Physical Properties

Sl. No.	Sample Reference (if any)	Test Parameter	Observed value	Method of Test Adopted as per Standards	Requirement as per Standard Specifications IS : 269-2015 (Reaff-2020)
1	Cement (Ultratech, OPC 43 Grade)	Standard consistency (%)	28.50	IS:4031(Part 4) – 1988 (Reaffirmed 2019)	-----
2		Initial Setting Time, (minutes)	155	IS:4031(Part 5) – 1988 (Reaffirmed 2019)	Not less than 30 minutes.
3		Final Setting Time, (minutes)	250		Not More than 600 minutes.
4		Fineness by Blaine's air permeability (m^2/kg)	280	IS:4031(Part 2) – 1999 (Reaffirmed 2018)	Min. 225 m^2/kg
5		Soundness by Le- Chatelier Method (mm)	1.1	IS:4031(Part 4) – 1988 (Reaffirmed 2019)	Max. 10 mm
6		Compressive Strength at 72±1 h, (N/mm^2) (Avg.)	27.9	IS:4031(Part 6) – 1988 (Reaffirmed 2019)	Min. 23.0 N/mm^2
7		Compressive Strength at 168±2 h, (N/mm^2) (Avg.)	39.6		Min. 33.0 N/mm^2
8		Compressive Strength at 672±4 h, (N/mm^2) (Avg.)	49.2		Min. 43.0 N/mm^2 Max. 58.0 N/mm^2

14. Concluding Remarks: The above cement sample is satisfied as per IS 269:2015

15. NB 1. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLES WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

For S.M. CONSULTANTS

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CHEMICAL TEST ON CEMENT SAMPLE

Report No. SMC/87E : Date 12/07/2023

2. Name and Address of the Client : M/s Surendra Infrastructure Pvt. Ltd.
3. Name of Requisitioner : Assistant Engineer – III (R/W) PBMC, Port Blair.
4. Name of the Work/Project : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
5. A NO : 01 (PBSPL) of 2022 – 23.
6. Reference no. of Work Order : 02/SE/PBMC/PBSPL/2021-22/61 Date: 13/06/2023
7. Description of Sample : Cement
8. Identification of Sample : SMC/PB/415
9. Condition of Sample Received : 1 bag of Cement Sample (Brand – Ultratech, Type-OPC 43 Grade) has been given by the client with the work order.
10. Date of Sample Received : 13/06/2023
11. Date of Commencement of Testing : 14/06/2023
12. Date of Completion of Testing : 12/07/2023
13. Test Result : Chemical Properties

Sl. No.	Sample Reference (if any)	Test Parameter	Observed value	Method of Test Adopted as per Standards	Requirement as per Standard Specifications IS : 269-2015 (Reaff-2020)
1	Cement (Ultratech, OPC 43 Grade)	Loss on ignition (%by mass)	2.44	IS 4032:1985 (Reaff-2019)	Max. 5.0
2		Magnesia as MgO (% by mass)	2.53		Max. 6.0
3		Total Sulphur content calculated as Sulphuric anhydride (SO_3)(% by mass)	1.71		Max. 3.5
4		Insoluble residue (% by mass)	2.59		Max. 5.0
5		Chloride content (% by mass)	BDL		Max. 0.1 Max. 0.05 for prestressed structure
6		Ratio of % of lime to % of silica, Alumina & Iron oxide when calculated by the formula $\frac{CaO - 0.7\,SO_3}{2.8SiO_2 + 1.2Al_2O_3 + 0.65Fe_2O_3}$	0.82		0.66-1.02
7		Ratio of percentage of Alumina to that of Iron oxide	0.78		Min. 0.66

*BDL – BELOW DETECTION LEVEL

14. Concluding Remarks: The above cement sample is satisfied as per IS 269:2015

15. NB 1. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLES WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

For S.M. CONSULTANTS

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ONSULTANTS T BLAIR	Design Mix Report		Contractor:
	Job No:	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

CERTIFICATE NO. : SMC/PB/ 95B

NATURE OF TEST : MIX DESIGN OF CEMENT CONCRETE (M-40 GRADE).
(Using Rameo Cement, OPC 43 Grade)

NAME OF CONTRACTOR : M/S SURENDRA INFRASTRUCTURE PVT. LTD

NAME OF PROJECT/WORK : MARINE ESPLANADE: MARINA ROAD RESTRUCTURE WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING, STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING.
SW: STRENGTHENING & CONSTRUCTION OF SEA WALL.

REFERENCE NO OF WORK ORDER: 02/SE/PBMC/PBSPL/2021-22/60 DATE: 13/06/2023

IDENTIFICATION OF SAMPLE: SMC/PB/QC.LAB/J.O-416

DATE OF SAMPLE RECEIVED: 14/06/2023

DATE OF COMMENCEMENTOF TESTING: 15 /06/2023

DATE OF COMPLETION OF TESTING: 20/07/2023(28 DAYS COMPRESSIVE STRENGTH)

DATE OF ISSUE OF TEST REPORT: 21/07/2023

Name of	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping

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NSULTANTS	Job No	416	M/S SUPERSIDDHA INFRASTRUCTURE PVT. LTD
	DOC. No :	SMC/PB/93B	
	Issue Date	21/07/2021	Department
	Grade of Concrete	M-40	Assistant Engineer-III (R/S Works) PBMC, Port Blair.

1.0. TEST ON MATERIALS FOR CEMENT CONCRETE MIX PROPORTION (M-40)

1.1. TESTS ON CEMENT

BRAND – RAMCO, TYPE OF CEMENT – OPC-43 GRADE.

Sl. No.	Sample Reference (if any)	Test Parameter	Observed value	Method of Test Adopted as per Standards	Requirement as per Standard Specifications IS : 269-2015 (Reaff-2020)
1.	Cement (Ramco, OPC 43 Grade)	Standard consistency (%)	28.75	IS:4031(Part 4) – 1988 (Reaffirmed 2014)	-----
2		Initial Setting Time, (minutes)	160	IS:4031(Part 5) – 1988 (Reaffirmed 2014)	Not less than 30 minutes.
3		Final Setting Time, (minutes)	255		Not More than 600 minutes.
4		Fineness by Blaine's air permeability (m^2 kg)	275	IS:4031(Part 2) – 1999 (Reaffirmed 2013)	Min. 225 m^2 kg
5		Specific gravity	3.14	IS:4031(Part 11)-1988 (Reaffirmed 2014)	-----
6		Soundness by Le- Chatelier Method (mm)	1.2	IS:4031(Part 3) – 1988 (Reaffirmed 2014)	Max. 10 mm
7		Compressive Strength at 72±1 h, (N/mm^2) (Avg.)	28.9	IS:4031(Part 6) – 1988 (Reaffirmed 2014)	Min. 23.0 N/mm^2
8		Compressive Strength at 168±2 h, (N/mm^2) (Avg.)	38.5		Min. 33.0 N/mm^2
9		Compressive Strength at 672±4 h, (N/mm^2) (Avg.)	49.6		Min. 43.0 N/mm^2 Max. 58.0 N/mm^2

Note: This test report is based on the samples received by our laboratory.

1. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLE WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

Name of Work/Project:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. SW: Strengthening & Construction of Sea Wall.

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	Design Mix Report		Contractor:
NSULTANTS BLAIR	Job No:	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

1.2. TEST ON FINE AGGREGATE

Sl No.	Sample reference (if any)	Test Parameters		Observed value	Method of test adopted as per standards	Requirement as per standard specifications IS 383 : 2016
01	Fine aggregate	Sieve analysis	Sieve size in mm	% by wt. of passing	IS: 2386 (Part I)-1963 (Reaffirmed 2016)	% by wt. of passing For Zone II
			10	100		100
			4.75	94.96		90-100
			2.36	88.38		75-100
			1.18	75.95		55-90
			0.600	46.78		35-59
			0.300	20.49		8-30
			0.150	4.11		0-10
02		Fineness Modulus		2.69	---	
03		Silt Content (%)		2.33	CPWD Specification 2009 Vol.I	8.0 (Max.)
04		Bulk Density in kg/lit (Compacted)		1.541	IS: 2386 (Part III)-1963 (Reaffirmed 2016)	---
05		Water Absorption (%)		1.38		---
06		Specific gravity		2.57		---

1. THIS TEST REPORT IS BASED ON THE SAMPLE RECEIVED BY OUR LABORATORY.
2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLE WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

Name of Work/Project	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping

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NSULTANTS BLAIR	Job No.:	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

1.3. TEST RESULT OF COMBINED COARSE AGGREGATES

Sieve Size in mm	% by wt. of material passing		% by wt. of material passing (Combined) 60% of 20mm +40% of 12.5mm	Requirement for 20mm graded aggregates as per IS : 383 – 2016
	20mm	12.5mm		
40	100	100	100	100
20	93.62	100	97.17	90 – 100
10	20.14	67.45	39.06	25 – 55
4.75	3.56	4.02	3.75	0 – 10

Sl No	Sample reference (if any)	Test Parameters	Observed value	Method of test adopted as per standards	Requirement as per standard specifications IS 383 : 2016
01	Physical Test on Combined Coarse aggregate	Combine Flakiness & Elongation Index (%)	24.7	IS: 2386 (Part I)-1963 (Reaffirmed 2016)	Max 40%
02		Water absorption (%)	0.79	IS: 2386 (Part III)-1963 (Reaffirmed 2016)	---
03		Specific Gravity	2.76		---
04		Bulk Density in kg/lit (Compacted)	1.645		---
05		Aggregate Impact Value (%)	20.2	IS:2386(Part IV) -1963 (Reaffirmed 2016)	Max. 30% for aggregates to be used in concrete for wearing surface (such as runways , roads & pavements, tunnel lining carrying water , spillways and stilling basins) & 45% for aggregate to be used in concrete other than for wearing surface.
06		Aggregate Crushing value (%)	24.6		Max. 30% for aggregates to be used in concrete for wearing surface (such as runways , roads & pavements, tunnel lining carrying water , spillways and stilling basins.)
07		Aggregate Abrasion value (%)	25.9		Max. 30% for aggregates to be used in concrete for wearing surface (such as runways , roads , pavements, spillways tunnel lining carrying water and stilling basins) & 50% for aggregate to be used in concrete other than for wearing surface.

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4. THE SAMPLE WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

Name of Work/Project:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.

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	Design Mix Report		Contractor:
NSULTANTS BLAIR	Job No.:	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/958	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

1.5. TEST RESULT OF CHEMICAL ADMIXTURE

(Brand:- FOSROC CONPLAST SP-337)

SL. NO.	SAMPLE REFERENCE (IF ANY)	TEST PARAMETERS	OBSERVED VALUE	Requirement as Per IS 9103 : 1999 (Reaffirmed 2004) Edition 2.2 (2007-08)
1	Chemical Admixture (Brand:- Fosroc Conplast SP-337)	Dry Material Content (%)	38.18	$0.95T \leq DMC < 1.05T$ Where, T – manufacturer's stated valve, in percent by mass DMC – test results, in percent by mass
2		pH	6.94	Min .6
3		Water Soluble Chloride (%)	BDL	Within 10 percent of the value or within 0.2 percent whichever is greater as stated by the manufacturer
4		Relative Density at 25°C	1.17	Within 0.02 of the value stated by the manufacturer.

*BDL=BELOW DETECTION LEVEL

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4. THE SAMPLE WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

Name of Work/Project	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping

Scanned with OKEN Scanner

CONSULTANTS ORT BLAIR	Design Mix Report		Contractor:
	Job No.:	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

2.0 DESIGN STIPULATION FOR M-40 GRADE CONCRETE AS PER IS 10262 : 2019 AND IS 456 : 2000 (REAFFIRMED 2016)

Sl No.	Description	Stipulation		Remarks
1	Grade designation	M-40		As per Requisitioner
2	Characteristic Compressive strength of concrete (M-40) at 28 days	40.0 N/mm^2		As per IS 456 : 2000 (Reaffirmed 2016)
3	Target mean strength at 28 days of M –40 grade concrete	a. $f$ck'=$f$ck+1.65s &(Table-2) =40+1.65x5 =40+8.25 =48.25 N/mm^2 b. $f$ck'=$f$ck+6.5 (Table-1) =40+6.5 =46.5 N/mm^2	Adopt 48.25 N/mm^2	As per IS 10262 : 2019
4	Type of cement	RAMCO (OPC 43 GRADE)		Conforming to IS : 269-2015
5	Maximum size of aggregate	20 mm graded angular (Source – Port Blair)		Conforming to IS 383 : 2016
6	Fine aggregate confirms to grading	Zone – II		Conforming to IS 383 : 2016
7	Degree of Quality control	Good		As per Requisitioner
8	Type of exposure	Severe		As per IS 456 : 2000 (Reaffirmed 2016)
9	Degree of workability as slump	100 - 125 mm		As per Requisitioner
10	Maximum Water Cement ratio	0.40		As per IS 456 : 2000 (Reaffirmed 2016)
12	Chemical admixture used	Fosroc Conplast SP 337		As per Requisitioner

Name of	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping

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CONSULTANTS PORT BLAIR	Design Mix Report		Contractor.
	Job No.	116	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

3. Trial Mix-1

W/C from free water cement ratio curve OPC (43) fig. 1=0.40 for M-40 grade concrete as per IS 10262:2019
But Max. W/C = 0.40 for M-40 grade concrete as per IS 456:2000 (Reaffirmed 2016).

(a) Determination of Water & W/C content:

From Table-4, water content =186 (For 50 mm slump) for 20 mm aggregate.
Estimate water content for 125 mm slump = 186 + (9 x 186)/100 = 202.74 (say 203 lit/cum)
As Super plasticizer is used the water content may be reduced to 22.5 % based on trail basis.
Hence the water content = 203-45.68=157.33 (say 157 lit/cum)

(b)Determination of cementitius material:

Cement requirement= 157/0.37= 424.32 kg/cum (say 424 kg/cum)

(c) Determination of Volume of coarse aggregate & Fine aggregate per unit volume of total aggregate:

As per Table-5 the volume of coarse aggregate corresponding to 20 mm size aggregate and fine Aggregate (Zone-II) for water cement ratio of 0.5 =0.62
But W/C ratio =0.37, So decrease of water cement ratio = 0.13
So volume of coarse aggregate increases = (0.01/0.05)x0.13 =0.026=0.62+0.026=0.646
Therefore volume of coarse aggregates =0.646 m^3
Volume of fine aggregate =1-0.648=0.354

(d) Calculation of Mix per unit vol. of concrete:

i. Volume of concrete = 1 m^3
Volume of entrapped air in wet concrete = 0.01(For 20 mm coarse aggregate Table-3 of IS 10262: 2019)
So volume of concrete = 1-0.01 =0.99 m^3
ii. Volume of cement = (424/3.14) x (1/1000) = 0.135 m^3
iii. Volume of water = (157/ 1) x (1/1000) = 0.157 m^3
iv. Volume of admixture = (3.816/1.17) x (1/1000) =0.003 m^3
(Admixture Conplast SP 337 @ 0.9 % by mass of cement.
v. Volume of all in aggregate = 0.99 – (0.135 +0.157+0.003) = 0.695m^3
vi. Mass of coarse aggregates = 0.695 x 0.646x 2.75 x 1000 = 1234.66 kg (say 1235 kg)
vii. Mass of fine aggregates = 0.695 x 0.354 x 2.57 x 1000 = 632.29 kg (say 632 kg)

Now requirement of materials and their mix proportion of M-40grade:

Quantity	Water	Cement content	Fine aggregate (Sand)	Coarse aggregate		Admixture	Slump in mm
				60% of 20 mm	40% of 12.5 mm		
For one cubic meter	157 lit / cum	424 kg/cum	632 kg / cum	741 kg / cum	494 kg / cum	0.9% by mass of cement	128
For one bag of cement	18.5 lit.	50 kg	74.53 kg	87.38 kg	58.25 kg		
In Ratio	0.37	1	1.491	1.748	1.165		

Name of	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Corr...

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CONSULTANTS PORT BLAIR	Design Mix Report		Contractor:
	Job No.:	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

3. Trial Mix-II

W/C from free water cement ratio curve OPC (43) fig. 1=0.40 for M-40 grade concrete as per IS 10262:2019
But Max. W/C = 0.40 for M-40 grade concrete as per IS 456:2000 (Reaffirmed 2016).

(a) Determination of Water & W/C content:

From Table-4, water content =186 (For 50 mm slump) for 20 mm aggregate.
Estimate water content for 125 mm slump = 186 + (9 x 186)/100 = 202.74 (say 203 lit/cum)
As Super plasticizer is used the water content may be reduced to 22.5 % based on trail basis.
Hence the water content = 203-45.68=157.33 (say 157 lit/cum)

(b)Determination of cementitius material:

Cement requirement= 157/0.36= 436.11 kg/cum (say 436 kg/cum)

(c) Determination of Volume of coarse aggregate & Fine aggregate per unit volume of total aggregate:

As per Table-5 the volume of coarse aggregate corresponding to 20 mm size aggregate and fine Aggregate (Zone-II) for water cement ratio of 0.5 =0.62
But W/C ratio =0.36, So decrease of water cement ratio = 0.14
So volume of coarse aggregate increases = (0.01/0.05)x0.14 =0.028=0.62+0.028=0.648
Therefore volume of coarse aggregates =0.648 m^3
Volume of fine aggregate =1-0.648=0.352

(d) Calculation of Mix per unit vol. of concrete:

i. Volume of concrete = 1 m^3
Volume of entrapped air in wet concrete = 0.01(For 20 mm coarse aggregate Table-3 of IS 10262: 2019)
So volume of concrete = 1-0.01 =0.99 m^3
ii. Volume of cement = (436/3.14) x (1/1000) = 0.139 m^3
iii.Volume of water = (157/ 1) x (1/1000) = 0.157 m^3
iv. Volume of admixture = (3.924/1.17) x (1/1000) =0.003 m^3
(Admixture Conplast SP 337 @ 0.9 % by mass of cement.
v.Volume of all in aggregate = 0.99 – (0.139 +0.157+0.003) = 0.691m^3
vi. Mass of coarse aggregates = 0.691 x 0.648x 2.75 x 1000 = 1231.36 kg (say 1231 kg)
vii. Mass of fine aggregates = 0.691 x 0.352 x 2.57 x 1000 = 625.11 kg (say 625 kg)

Now requirement of materials and their mix proportion of M-40grade:

Quantity	Water	Cement content	Fine aggregate (Sand)	Coarse aggregate		Admixture	Slump in mm
				60% of 20 mm	40% of 12.5 mm		
For one cubic meter	157 lit / cum	436 kg/cum	625 kg / cum	738.6 kg / cum	492.4 kg / cum	0.9% by mass of cement	119
For one bag of cement	18.0 lit.	50 kg	71.67 kg	84.70 kg	56.47 kg		
In Ratio	0.36	1	1.433	1.694	1.129		

Name of	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping

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Consultant	Design Mix Report		Contractor:
S.M. CONSULTANTS PORT BLAIR	Job No	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

3. Trial Mix-III

W/C from free water cement ratio curve OPC (43) fig. 1=0.40 for M-40 grade concrete as per IS 10262:2019
But Max. W/C = 0.40 for M-40 grade concrete as per IS 456:2000 (Reaffirmed 2016).

(a) Determination of Water & W/C content:

From Table-4, water content =186 (For 50 mm slump) for 20 mm aggregate.
Estimate water content for 125 mm slump = 186 + (9 x 186)/100 = 202.74 (say 203 lit/cum)
As Super plasticizer is used the water content may be reduced to 22.5 % based on trail basis.
Hence the water content = 203-45.68=157.33 (say 157 lit/cum)

(b)Determination of cementitius material:

Cement requirement= 157/0.35= 448.57 kg/cum (say 449 kg/cum)

(c) Determination of Volume of coarse aggregate & Fine aggregate per unit volume of total aggregate:

As per Table-5 the volume of coarse aggregate corresponding to 20 mm size aggregate and fine Aggregate (Zone-II) for water cement ratio of 0.5 =0.62
But W/C ratio =0.35, So decrease of water cement ratio = 0.15
So volume of coarse aggregate increases = (0.01/0.05)x0.15 =0.03=0.62+0.03=0.650
Therefore volume of coarse aggregates =0.650 m^3
Volume of fine aggregate =1-0.650=0.350

(d) Calculation of Mix per unit vol. of concrete:

i. Volume of concrete = 1 m^3
Volume of entrapped air in wet concrete = 0.01(For 20 mm coarse aggregate Table-3 of IS 10262: 2019)
So volume of concrete = 1-0.01 =0.99 m^3
ii. Volume of cement = (449/3.14) x (1/1000) = 0.143 m^3
iii. Volume of water = (157/ 1) x (1/1000) = 0.157 m^3
iv. Volume of admixture = (4.041/1.17) x (1/1000) =0.003 m^3
(Admixture Conplast SP 337 @ 0.9 % by mass of cement.
v. Volume of all in aggregate = 0.99 – (0.143 +0.157+0.003) = 0.687m^3
vi. Mass of coarse aggregates = 0.687 x 0.650x 2.75 x 1000 = 1228.01 kg (say 1228 kg)
vii. Mass of fine aggregates = 0.687 x 0.350 x 2.57 x 1000 = 617.95 kg (say 618 kg)

Now requirement of materials and their mix proportion of M-40grade:

Quantity	Water	Cement content	Fine aggregate (Sand)	Coarse aggregate		Admixture	Slump in mm
				60% of 20 mm	40% of 12.5 mm		
For one cubic meter	157 lit / cum	449 kg/cum	618 kg / cum	736.8 kg / cum	491.2 kg / cum	0.9% by mass of cement	109
For one bag of cement	17.5 lit.	50 kg	68.82 kg	82.05 kg	54.69 kg		
In Ratio	0.35	1	1:3.76	1.641	1.094		

Name of	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture & Other Amenities

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S.M. CONSULTANTS PORT BLAIR	Design Mix Report		Contractor:
	Job No.	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

4. 0 COMPRESSIVE STRENGTH OF PRELIMINARY CEMENT CONCRETE CUBE (150 X 150 X 150) MM

A. 7 Days Strength:-

Sl. No.	Sample Reference (if any)	Test Parameters	Observed value		Method of test adopted as per standards
			Individual	Average	
01	M 40 Grade Concrete cube Trail Mix-1	Weight in kg.	8.327	8.320	IS: 516-1959 (Reaffirmed 2013)
			8.299		
			8.335		
02		Compressive Strength in N/mm²	32.16	31.47	
			31.16		
			31.08		
03	M 40 Grade Concrete cube Trail Mix-2	Weight in kg.	8.361	8.344	
			8.328		
			8.344		
04		Compressive Strength in N/mm²	33.45	33.83	
			34.76		
			33.27		
05	M 40 Grade Concrete cube Trail Mix-3	Weight in kg.	8.401	8.379	
			8.358		
			8.379		
06		Compressive Strength in N/mm²	36.11	35.61	
			34.97		
			35.76		

B. 28 Days Strength:-

Sl. No.	Sample Reference (if any)	Test Parameters	Observed value		Method of test adopted as per standards
			Individual	Average	
01	M 40 Grade Concrete cube Trail Mix-1	Weight in kg.	8.699	8.748	IS: 516-1959 (Reaffirmed 2013)
			8.754		
			8.791		
02		Compressive Strength in N/mm²	43.76	44.61	
			44.68		
			45.38		
03	M 40 Grade Concrete cube Trail Mix-2	Weight in kg.	8.794	8.774	
			8.728		
			8.800		
04		Compressive Strength in N/mm²	47.14	47.06	
			45.76		
			48.27		
05	M 40 Grade Concrete cube Trail Mix-3	Weight in kg.	8.814	8.804	
			8.789		
			8.808		
06		Compressive Strength in N/mm²	49.84	49.80	
			50.68		
			48.89		

Note : 1. The above tested concrete cubes are casted on date 22.06.2023.

Name of	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, ...

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Consultant:	Design Mix Report		Contractor:
S.M. CONSULTANTS PORT BLAIR	Job No.:	416	M/s SURENDRA INFRASTRUCTURE PVT. LTD
	DOC. No.:	SMC/PB/95B	
	Issue Date	21/07/2023	Department:
	Grade of Concrete	M-40	Assistant Engineer-III (R/Works) PBMC, Port Blair.

5. 0 CONCLUSION, RECOMMENDATION & SUGGESTION:

- Trial Mix-III Proportion is recommended for said work.
- Cement having the same brand & strength must always be used while adopting the above mix proportion.
- Aggregates used in this mix design are in saturated surface dry condition.
- Test was conducted as per IS 10262: 2019, IS 456: 2000 (Reaff. 2016) & IS: 516-1959 (Reaff. 2013).

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2. THE TEST RESULT RELATES ONLY TO THE ITEM TESTED.
3. THE REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE APPROVAL OF THE TESTING LABORATORY.
4. THE SAMPLE WILL BE RETAINED IN OUR LABORATORY FOR 15 DAYS AFTER TESTING IS COMPLETED.

For S.M. CONSULTANTS

Name of	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track,

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10

Surendra Infrastructure (P) Ltd.

193, VIP ROAD, BIRAD COLONY, PORT BLAIR-744 103, A. & N. ISLANDS, PH. : 23319, FAX : 01992 - 231731
Email : surendrapbg@gmail.com

14th July 2023

SI/PBC/03

M/s S.M Consultants
Plot No. C/16/6-A
Pathergudda
Near Saraswati Shishu Mandir School
Garacharma Post
Port Blair - 744105
Email: smconsultants1@gmail.com

Kind Attn: Mr. Barick(8280327339/07063903443)

SUB: TESTING OF CEMENT (OPC 43 GRADE)

REF: AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155 DT D. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH BI-FORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING, S.W: STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,

Please arrange to submit report to Assistant Engineer-III(R/Works), Muncipal Council against their following letter with a copy to us against their following Letter (Copy Enclosed) and raise Bill on us for our arranging Payment:

1. Ltr No. 02/SE/PBMC/PBSPL/2021-22/61 dtd. 13th June 2023.

Please acknowledge receipt.

Thanking you
SURENDRA INFRASTRUCTURE PVT. LTD

Received by

S.M. CONSULTANTS & ENGINEERS PORT BLAIR

Encl: As Above(01 Sheet)

Cc

Email: survalee9@gmail.com

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NDC

OFFICE OF THE ASSISTANT ENGINEER-III (WORKS)
MUNICIPAL COUNCIL,PORT BLAIR

F.No: -02/SE/PBMC/PBSPL/2021-22/C/ Dated: 3/1/2023

To,

S.M Consultants,
Pathergudda,
Port Blair.

Subject Mandatory Test -reg.

Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way. Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

Agenc M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No: 01 (PBSPL) of 2022-23

Dear Sir,

I am hereby forwarding 01 Bag of Cement (OPC 43 Grade) for conducting the mandatory test.

Sample	Test to be conducted
Cement (OPC 43 Grade) (01 Bag) (Ramco,Dalmia,Ultratech cements)	1. Fineness
	2. Consistency of Standard Cement Paste
	3. Soundness
	4. Setting Time (Initial & Final)
	5. Compressive Strength.

This result may kindly be communicated to the undersigned at an earliest.Testing Charges may please to collected from who is the contractor for the subject work.

M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.,VIP Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1 The Executive Engineer-III (Works/SWM),PBMC for kind information.
2 The Junior Engineer-III (R/Works) PBMC for information and necessary action.
3 M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor. For information
4 Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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Surendra Infrastructure (P) Ltd.

19 A.J.C. ROAD, BATRA TOLA I, PORT BLAIR-744 103, A. ... 233312, FAX : 03192 - 233781
Email : surendrapbr@gmail.com

14th July 2023

To,
M/s SAI Consultants
Plot No. 303/B/2
Padengpukka
Near Saraswati Shishu Mandir School
Garacharma Post
Port Blair - 744105
Email: smconsultants1@gmail.com

Kind Attn: Mr. Barick(8280327339/07063903443)

SUB: TESTING OF CEMENT (OPC 43 GRADE)

REF : AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155 DTD. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING & STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING, S.W. STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,

Please arrange to submit report to Assistant Engineer-III(R/Works), Muncipal Council against their following letter with a copy to us against their following Letter (Copy Enclosed) and raise Bill on us for our arranging Payment:

1. F.No. 02/ /PBMC/PBSPL/2021-22/61 dtd. 13th June 2023.

Please acknowledge receipt.

Thanking you
SURENDRA INFRASTRUCTURE PVT. LTD

Encl: As Above(01 Sheet)

Received by

S.M. CONSULTANTS PORT BLAIR

... APPLE GARDEN, 2nd FLOOR, PARA 3, ... (03192) 233312, FAX : (03192) ... 233781
Email: surendra@gmail.com

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OFFICE OF THE ASSISTANT ENGINEER-III (WORKS)
MUNICIPAL COUNCIL,PORT BLAIR

F.No: -02/SE/PBMC/PBSPL/2021-22/C/ Dated: 3/1/2023

To,

S.M Consultants,
Pathergudda,
Port Blair.

Subject Mandatory Test -reg.

Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall

Agenc M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No: 01 (PBSPL) of 2022-23

Dear Sir,

I am hereby forwarding 01 Bag of Cement (OPC 43 Grade) for conducting the mandatory test.

Sample	Test to be conducted
Cement (OPC 43 Grade) (01 Bag) (Ramco,Dalmia,Ultratech cements)	1. Fineness
	2. Consistency of Standard Cement Paste
	3. Soundness
	4. Setting Time (Initial & Final)
	5. Compressive Strength.

This result may kindly be communicated to the undersigned at an earliest.Testing Charges may please to collected from who is the contractor for the subject work.

M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.,VIP Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1 The Executive Engineer-III (Works/SWM),PBMC for kind information.
2 The Junior Engineer-III (R/Works) PBMC for information and necessary action.
3 M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor. For information
4 Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

12

Surendra Infrastructure (P) Ltd.

194, VIP ROAD, PURBACHAL, PURULIA (W.B.) 723131, FAX: 03252-251251
Email : surendrapvt@gmail.com

26/PW/329

M/s S.M Consultants
Plot No.372/No.4
Pathergudda
Near SaraswatiShishuMandir School
Ganacharma Post
Port Blair - 744105
Email: smconsultants11@gmail.com

Kind Attn: Mr. Barick(8280327339/07063903443)

SUB: TESTING OF DISIGN MIX

REF : AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155 DTD. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING. S.W: STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,

Please arrange to submit report to Assistant Engineer-III(R/Works), Muncipal Council against their following letter with a copy to us against their following Letter (Copy Enclosed) and raise Bill on us for oer arranging Payment:

1. F.No:- 02/SE/PBMC/PBSPL/2021-22/61 dtd. 28th August'2023.
2. F.No:- 02/SE/PBMC/PBSPL/2021-22/62 dtd. 29th August'2023.
3. F.No:- 02/SE/PBMC/PBSPL/2021-22/62 (A) dtd. 31st August'2023.
4. F.No:- 02/SE/PBMC/PBSPL/2021-22/63(A) dtd. 1st Sep'2023.
5. F.No:- 02/SE/PBMC/PBSPL/2021-22/64(A) dtd. 04th Sep'2023.
6. F.No:- 02/SE/PBMC/PBSPL/2021-22/65(A) dtd. 05th Sep'2023.
7. F No:- 02/SE/PBMC/PBSPL/2021-22/66 dtd. 12th Sep'2023.
8. F.No:- 02/SE/PBMC/PBSPL/2021-22/66(A) dtd. 13th Sep'2023
9. F.No:- 02/SE/PBMC/PBSPL/2021-22/68(A) dtd. 14th Sep'2023.
10. F.No:- 02/SE/PBMC/PBSPL/2021-22/70 dtd. 15th Sep'2023

Please acknowledge receipt.

Received by

Thanking you
SURENDRA INFRASTRUCTURE PVT. LTD
Surendra Infrastructure Pvt. Ltd

Director/Authorised Signatory

Encl: As Above 50 Sheets)

9 EZRA STREET, CALCUTTA 700001, INDIA Ph: 225 3385/3382, FAX: 91-033-225 0152
Email: surpsales8@gmail.com

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F No. 02/SE/PBMC/PBSPL/2021-22/61 Date: 23-01-2023

To
M/S. S.M Consultants
Pathargaddi
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.
This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-
1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PUSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Alalul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M 40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	foundation
11. Date of Casting	:	26/08/2022
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

No. 02/SE/PBMC/PBSPL/2021-22/[illegible]2. Dated: 07.01.2023

To
M/S. S.M Consultants
Pathargodda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PDSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-
1. The Executive Engineer - III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade, Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping
2. Sub Work : Strengthening and construction of sea wall
3. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No : 01 (PBSPL) of 2022-23
5. Name of Executive Engineer : Shri. Avinash Kumar Singh
6. Name of Assistant Engineer : Shri. Abdul Wahab
7. Name of Junior Engineer : Shri. Anil Bahadur Rai
8. Mix of concrete : M40
9. No. of specimen & size : 3 Nos 15 cm x 15 cm x 15 cm
10. Details of portion of work From where cubes are taken And qty approx. : Sea wall 1st Lift
11. Date of Casting : 09/08/2023
12. Date of testing :
13. Mark of specimens : A1, A2, A3
14. Required strength 7 days

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

(No 02/SI-PBMC/PBSPL/2021-22/ C) (A) Date: 21/03/2022

To
M/S. S.M.I Consultants
Pathanpuddi
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade, Margao Road Protection with Cast-in-Cottage Way, Walking Track, Street Lighting, Street Furniture, Service Core, Benching and Landscape
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall foundation
11. Date of Casting	:	31/08/2023
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE
(Contractor)

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/ 671 Date: 30/3/2021

To
M/S. S M Consultants
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-
1. The Executive Engineer - III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade Marine Pond Protection with Dual Lane Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Corr. Treeting and Landscaping
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Baladur Rai
8. Mix of concrete	:	M30
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea Wall 2nd Lift.
11. Date of Casting	:	01/09/2023
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE
Contractor

Sig. of AE

Sig of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PDSPL/2021-22/ 64(A) Date: 03/07/2023

To
M/S. S.M.Consultant
Pathargudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marine Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PDSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade Motor Proof Protective with Pedestrian Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Cum Foundation and Landscaping
2. Sub Work	:	Strengthening and Construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor
4. Agreement No.	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Afslal Wahab
7. Name of Junior Engineer	:	Shri. Anil Baladar Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x 15 cm
10. Details of portion of work From where cubes are taken And qty approx	:	Sea Wall at Left.
11. Date of Casting	:	01/09/2023
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig of JE

Sig of AE

Sig of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

I.No.02/AE-III/PBMC/PBSPL/2021-22/ 649(A) Date: 23/05/2021

To
M/S. S M Consultants
Pattanpudda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade, Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade Marina Road Pedestrian with Utilities Carriage Way, Walking Track, Street Lighting Street Furniture Service Duct Trenching and Landscaping
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor
4. Agreement No	:	01 (PHSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea Wall foundation
11. Date of Casting	:	04/09/2022
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

No: 82/AE-III/PBMC/PHSPL/2021-22/ 6 6(7) Dated: 25.01.2023

To
M/S. S.M.Consultants
Pathargahla
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PHSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-
1. The Executive Engineer - III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade, Marine Road Pedestrian with Dual Use Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Duct, Trenching and Landscaping
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	[illegible]
11. Date of Casting	:	05/09/2023
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE
~~Contractor~~

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

Date: 17/07/2023

F.No. 02/SE/PBMC/PBSPL/2021-22/ 64

To
M/S. S M Consultants
Pathanpalda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work, M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-
1. The Executive Engineer - III (Work/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PHSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M 40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea wall formation
11. Date of Casting	:	12/07/2022
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contra

Scanned with OKEN Scanner

NPC

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE-PBMC/PBSPL/2021-22/ 2 66(A) Date: 15.03.2023

To
M/S. S.M.Consultants
Pathargadda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer -III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade Marina Road Restructuring with Footpath Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x 15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	[illegible]
11. Date of Casting	:	14/09/2022
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/MC/PBMC/PBSPL/2021-22/ 68(A) Dated 19/09/2022

To
M/S. S.M.Consultants
Pathargodda
Port Blair

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.
This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-
1. The Executive Engineer - III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade, Marine Road Restructure with Synthetic Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Cable Trenching and Utility Chamber
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor
4. Agreement No	:	01 (PIWPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x 15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	See Daily formation
11. Date of Casting	:	19/09/2023
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE (Contractor)

Sig. of AE

Sig of Contractor

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

I No. 02/SE/PBMC/PBSPL/2021-22/ [illegible] Date: 5-2-[illegible]

To
M/S. S.M.Consultants
Pathargo,Ha
Port Blair

Sub	:	Mandatory Design Mix-reg
Name of work	:	Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Steet Lighting, Street Furniture, Service Core Trenching and Landscaping.
Sub Work	:	Strengthening and construction of sea wall
Agency	:	M/s. Surendra Infrastructure (P) Ltd , Govt. Contractor.
Agreement No	:	01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat , Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works/SWM) Municipal Council Port Blair for information.
3. M/s Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Making Exploratory Metro Road Pavement [illegible] Cottage Way, Walking for [illegible] Service Core from Ley and Hard [illegible]
2. Sub Work	:	Strengthening and [illegible] of [illegible]
3. Agency	:	M/s. Surender Infrastructure (P) Ltd., Govt. Contractor
4. Agreement No.	:	91 (PBM) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri Anil Bahadur Rai
8. Mix of concrete	:	M40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x 15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	[illegible]
11. Date of Casting	:	15/01/2023
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

No. 02/SL-PBMC/PBSPL/2021-22/ (C.S)

Dated: 31/1/23

To
M/S. S.M.Consultancy
Pathergadda
Port Blair

Sub : Mandatory Design Mixing
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core, Tree planting and Landscaping.
Sub Work : Strengthening and construction of sea wall
Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Sir,

Enclosed find herewith the details of CC Cubes along with samples for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer - III (Works SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (Works SWM) Municipal Council Port Blair for information.
3. M/S. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work	:	Marine Esplanade Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Cone Trenching and Landscaping
2. Sub Work	:	Strengthening and construction of sea wall
3. Agency	:	M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
4. Agreement No	:	01 (PBSPL) of 2022-23
5. Name of Executive Engineer	:	Shri. Avinash Kumar Singh
6. Name of Assistant Engineer	:	Shri. Abdul Wahab
7. Name of Junior Engineer	:	Shri. Anil Bahadur Rai
8. Mix of concrete	:	M-40
9. No. of specimen & size	:	3 Nos 15 cm x 15 cm x15 cm
10. Details of portion of work From where cubes are taken And qty approx.	:	Sea Wall 3rd lift
11. Date of Casting	:	05/07/2023
12. Date of testing	:	
13. Mark of specimens	:	A1, A2, A3
14. Required strength 7 days		

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig of Contractor

Scanned with OKEN Scanner

13

Surendra Infrastructure (P) Ltd.

P/C/V.I.P. ROAD, HOWRAH, CHENNAI, PORT BLAIR-744 101, Ph : 2331512, FAX : 91(03192) 231151
Email : surajeplace@gmail.com

SI/23/PB/204

14th July 2023

M/s. SM Consultants
Plot No. 342/No 4
Pathergudda
Near Saraswati Shishu Mandir School
Gurudwara Post
Port Blair - 744104
Email: smconsultants1@gmail.com

Kind Attn: Mr. Barick(8280327339/07063903443)

SUB: DESIGN MIX M40 GRADE

REF : AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155 DT.D. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING, S.W: STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,

Please arrange to submit report to Assistant Engineer-III(R/Works), Muncipal Council against their following letter with a copy to us against their following Letter (Copy Enclosed) and raise Bill on us for our arranging Payment;

1. *F.No:- 02/AE/PBMC/PBSPL/2021-22/60 dtd. 13th June 2023.*

Please acknowledge receipt.

Thanking you
SURENDRA INFRASTRUCTURE PVT. LTD

C/c

Received by

Encl: As Above(01 Sheet)

P/C/V.I.P. ROAD, HOWRAH, CHENNAI, PORT BLAIR-744 101, Ph : 2331512, FAX : 91(03192) 231151
Email : surajeplace@gmail.com

Scanned with OKEN Scanner

OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

Date: 13/06/2023

F.No. 02/SE/PBMC/PBSPL/2021-22/60

To
S.M.Consultants,
Ward No.24, Sivaji Colony,
Behind Maruthi Agency House,
Garacharma Post,
Port Blair.

Sub : Mandatory Design Mix-reg
Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & construction of sea wall

Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No : 01 (PBSPL) of 2022-23

Dear Sir,

Please find herewith sealed of following materials for Mix Design of Reinforced Cement Concrete M40 Grade as per the latest and relevant codes and CPWD specifications for above mentioned work.

Sample	
Stone Aggregate 20mm (01 Bag)	Design Mix M40 Grade
Stone Aggregate 12.5mm (01 Bag)	
Coarse Sand (01 Bag)	
Cement (01 Bag)-OPC 43 Grade Cement	
Admixtures	

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours faithfull

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

Surendra Infrastructure (P) Ltd.
P/L, V.I.P. ROAD, JUNGLI GHAT, PORT BLAIR-744 103. Ph: 233317, FAX: 03192 - 231781
Email - sursalepb@gmail.com

262/PB/221 21st July 2023

M/s S.M Consultants
Plot No.3/2/No.4
Pathergudda
Near Saraswati Shishu Mandir School
Garacharma Post
Port Blair - 744105
Email: smconsultants11@gmail.com

Kind Attn: Mr. Barick(8280327339/07063903443)

SUB: STEEL TEST

REF : AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155 DTD. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING. S.W: STRENGHENING & CONSTRUCTION OF SEA WALL.

Dear Sir,

Please arrange to submit report to Assistant Engineer-III(R/Works), Muncipal Council against their following letter with a copy to us against their following Letter (Copy Enclosed) and raise Bill on us for our arranging Payment:

1. F.No:- 02/SE/PBMC/PBSPL/2021-22/59 dtd. 06th July 2023.

Please acknowledge receipt.

Thanking you
SURENDRA INFRASTRUCTURE PVT. LTD

Surendra Infrastructure Pvt. Ltd.

Director/Authorised Signatory

Received by
S.M. CONSULTANTS PORT BLAIR

Encl: As Above(01 Sheet)

9, EZRA STREET, CALCUTTA 700001, INDIA Ph: 225 3385/3382, FAX: 91-033-225 3152
Email: sursales8@gmail.com

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OFFICE OF THE ASSISTANT ENGINEER-III (WORKS)
MUNICIPAL COUNCIL,PORT BLAIR

F.No: -02/SE/PBMC/PBSPL/2021-22/ Date: 6/7/2023

To,

S.M Consultants,
Ward No.24, Sivaji Colony,
Behind Maruthi Agency House,
Garacharma Post,
Port Blair.

Subject: Mandatory Test -reg.

Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping. S.W : Strengthening & construction of sea wall

Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.

Agreement No: 01 (PBSPL) of 2022-23

Dear Sir,

I am hereby forwarding samples of steel make J Balaji Brand as per IS 1786 for conducting the mandatory test.

Sample	Test to be conducted
08 mm Ø	All Test mandatory Required.
10 mm Ø	
12 mm Ø	
16 mm Ø	
20 mm Ø	

This result may kindly be communicated to the undersigned at an earliest.Testing Charges may please to collected from who is the contractor for the subject work.
M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.,VIP Road, Junglighat, Port Blair, for necessary action.

Yours faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1 The Executive Engineer-III (Works/SWM),PBMC for kind information.
2 The Junior Engineer-III (Road Works) PBMC for information and necessary action.
3 M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor. For information
4 Order File.

Assistant Engineer-III (R/Works)
Municipal Council

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Surendra Infrastructure (P) Ltd.

P.T.V. TP. ROAD, BEHALA, PORT BLAIR-744107, A&N ISLANDS, PH: 03192-234287, FAX: 03192-234281
Email: sursalepbl@gmail.com

No. SIPL/ /05

14th July 2023

M/s S.M Consultants
Plot No. 372/No.4
Pathergudda
Near Saraswati Shishu Mandir School
Garacharma Post
Port Blair - 744103.
Email: smconsultants11@gmail.com

Kind Attn: Mr. Barick(8280327339/07063903443)

SUB: CUBE TEST

REF : AWARD LETTER NO. 02/SE/PBMC/PBSPL/2021-2022/155 DTD. 23RD FEB'2023
MARINE ESPLANADE : MARINE ROAD RESTRUCTURING WITH UNIFORM CARRIAGE WAY, WALKING TRACK, STREET LIGHTING STREET FURNITURE, SERVICE CORE TRENCHING AND LANDSCAPING, S.W: STRENGHENING & CONSTRUCTION OF SE WALL.

Dear Sir,

Please arrange to submit report to Assistant Engineer-III(R/Works), Municipal Council against their following letter with a copy to us against their following Letter (Copy Enclosed) and raise Bill on us for our arranging Payment:

1. F.No:- 02/SE/PBMC/PBSPL/2021-22/57 dtd. 30th June 2023.

Please acknowledge receipt.

Thanking you
SURENDRA INFRASTRUCTURE PVT. LTD

O/C

Encl: As Above(1 Sheets)

S.M. CONSULTANTS * PORT BLAIR *

Received by
14/7/23

9 LYONS RANGE, CALCUTTA 700001, PH: 033-22431682, FAX: 91-033-225 1152
Email: sursales@gmail.com

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OFFICE OF THE MUNICIPAL COUNCIL
ASSISTANT ENGINEER-III (RW/SWM)
PORT BLAIR

F.No. 02/SE/PBMC/PBSPL/2021-22/57 Date: 20/6/2023

To
M/s. S.M.Consultants,
Patherguida,
Port Blair

Sub : Mandatory Design Mix-reg
Name of work :Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
S.W : Strengthening & construction of sea wall
Agency :M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
Agreement No :01 (PBSPL) of 2022-23

Sir,

It is to inform you that conduct a trial mix of cube test of standard size of cube as per IS codes of at least three samples of different mix to attain design strength of M40 grade of concrete for conducting compressive strength as per relevant IS Codes.

This result may kindly be communicated to the undersigned at an earliest. Testing charges may please to collected from who is the contractor for the subject work. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor, V.I.P Road, Junglighat, Port Blair, for necessary action.

Yours Faithfully

Assistant Engineer-III (R/Works)
Municipal Council

Copy to:-

1. The Executive Engineer –III (Works/SWM) Municipal Council Port Blair for information.
2. The Junior Engineer-III (R/Works) Municipal Council Port Blair for Information.
3. M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor Port Blair for necessary action.
4. Order File.

Assistant Engineer-III (R/Works)
Municipal Council

Scanned with OKEN Scanner

PERFORMA FOR TESTING COMPRESSIVE STRENGTH OF CC CUBES

1. Name of work : Marine Esplanade: Marina Road Restructure with Uniform Carriage Way, Walking Track, Street Lighting, Street Furniture, Service Core Trenching and Landscaping.
   S.W : Strengthening & construction of sea wall
2. Agency : M/s. Surendra Infrastructure (P) Ltd., Govt. Contractor.
3. Agreement No : 01 (PBSPL) of 2022-23
4. Name of Executive Engineer : Shri. Avinash Kumar Singh
5. Name of Assistant Engineer : Shri. Abdul Wahab
6. Name of Junior Engineer : Shri. Anil Bahadur Rai
7. Mix of concrete : Design mix M40
8. No. of specimen & size : 3 Nos 15 cm x 15 cm x15 cm
9. Details of portion of work From where cubes are taken And qty approx. :
10. Date of Casting :
11. Date of testing :
12. Mark of specimens : A1, A2, A3
13. Required strength 7 days :

Certificate that the above sample have been taken in our presence

Sig. of JE

Sig. of AE

Sig. of Contractor

Scanned with OKEN Scanne