Enclosure to Principal Chief Conservator of Forest (HoFF), M. S. Nagpur Letter No. Desk-17/CA/Nodal Cell/CR-40/1127/2019-20, Date 04/10/2019

Model Rate Structure for Compensatory Afforestation Model No.4.

Project Name - Diversion Proposal for Rehabilitation and up-gradation of exiting highway to 2 lane/4 lane with paved shoulder under configuration from Pen-Khopli-[redacted] (KM 00+000 to KM 33+328) Section of NH-166D(Pen-Khopli-[redacted]) on Engineering, Procurement & Construction (EPC) Basis in the state of Maharashtra

Spacement - 3m x 3m
Size of Pits - 0.45 x 0.45 x 0.45m
No. of Seedlings - 1111 per ha

(Amount in Rs.)

Wage Rate- Rs.	425.96	per day.	
Area	20.000	Hectore	
Division	Alibag	Beat-	Bense
Range	Nagothane	S.No.	R.F.C.No.209
Village	Shihu (Gangavane)		
Round	Kadsure	Taluka-	pen

Sr.No	Particulars of works	Man days	Wages	Material supply	Total (Rs.Per Ha.)	Man days	Wages	Material supply	Total
A. Pre Monsoon Works PPO/PYO									
1	(a) Survey and demarcation	1.00	425.96	91.00	516.96	20.00	8519.20	1820.00	10339.20
	(b) Preparation of treatment map (100 m x 50 m grid)	1.00	425.96	91.00	516.96	20.00	8519.20	1820.00	10339.20
	(c) Digging trial pits of size 0.30x0.30x0.60 in corner of Grid.	0.40	170.38	0.00	170.38	8.00	3407.68	0.00	3407.68
	(d) Fixing 60cm x 0.05cm x12cm cement pillars upto 30cm deep in corner of Grid, painting with Grid No.etc complete(3 pillars, Rs.75/- for each pillrs)	0.00	0.00	225.00	225.00	0.00	0.00	4500.00	4500.00
	(e) Clearing of bushes and preparation of site (As per requirement)	10.00	4259.60	91.00	4350.60	200.00	85192.00	1820.00	87012.00
2	Soil and moisture conservation works including collection of rubbles from areas upto 30 m etc	31.00	13204.76	0.00	13204.76	620.00	264095.20	0.00	264095.20
3	Providing chain link fencing as per site reuirement around plantation area 3000 R.M. Rs 3200/- per R.M.	0.00	0.00	480000.00	480000.00	0.00	0.00	9600000.00	9600000.00
4	Alignment of pits at 3m x 3m spacement. 1111 pits per Ha (0.25 per 100 pits and M&S @ Rs. 2.24 per 50 pits.	2.89	1231.02	91.00	1322.02	57.80	24620.49	1820.00	26440.49
5	Digging of pits of size 0.45 x 0.45 x 0.45 m (1111 pits per ha) 6.60 M.D per 100 pits. Note :- As per local conditions provision for mechanized digging can be made.	73.33	31235.65	0.00	31235.65	1466.60	624712.94	0.00	624712.94
6	Construction of 5.00 Rmt wide Inspection Path 1M.D. per 100 Rmt	1.00	425.96	0.00	425.96	20.00	8519.20	0.00	8519.20
7	Enumeration of all valuable plant species at plantation site and grid wise counting and providing color band and recording the same in Register (0.75 M.D.) per 100 plants	0.75	319.47	25.00	344.47	15.00	6389.40	500.00	6889.40
8	Providing and fixing (4 feet x 3 feet) information board each per site	0.00	0.00	5000.00	5000.00	0.00	0.00	5000.00	5000.00
9	Part Nursery cost of raising 1333 seedlings per ha (including 20% casualty replacement) in polygons of size 12.50 x 25.00 cm (Wages Rs.11.90 and M & S Rs.3.62 per plant)	46.70	19892.33	4798.80	24691.13	934.00	397846.64	95976.00	493822.64
	Total	**168.07**	**71591.10**	**490412.80**	**562003.90**	**3361.40**	**1431821.94**	**9713256.00**	**11145077.94**
	Contingency 3%		2147.73	14712.38	16860.12		42954.66	291397.68	334352.34
	Labour Welfare 4%		2863.64	19616.51	22480.16		57272.88	388530.24	445803.12
	Grand Total	**168.07**	**76602.47**	**524741.70**	**601344.17**	**3361.40**	**1532049.48**	**10393183.92**	**11925233.40**
B. First Year Operations									
1.	Part Nursery cost for maintenance of 1333 per ha Rs. 3.77 per seedling (Wages Rs.2.69, M & S Rs. 0.81)	14.80	6619.42	1079.73	7699.15	296.00	132388.37	21594.60	153982.97
2	Refilling of pits by good quality soil including application of single super phosphate (1.66 MD per 100 pits)	18.44	8247.44	1944.25	10191.69	368.80	164948.75	38885.00	203833.75
3	Transportation of 1333 seedlings from Nursery to plantation site including loading & unloading (0.14 M.D. per 100 seedlings & M.S Rs.1.82 Per seedlings)	1.87	836.37	2426.00	3262.37	37.40	16727.45	48520.00	65247.45
4	Planting of 1111 seedlings (1.0 M.D per 100 seedlings)	11.11	4969.04	0.00	4969.04	222.20	99380.73	0.00	99380.73
5	3 seedlings (1 Rmt circular) and 2 soil workings (4.00 M.D per 100 seedlings) fertilizer application Rs.0.82 per seedling	44.44	19876.15	911.02	20787.17	888.80	397522.91	18220.40	415743.31
7	Casualty replacement (20% 222 Seedlings per ha.) (2 M.D. per 100 seedlings)	4.44	1985.83	0.00	1985.83	88.80	39716.51	0.00	39716.51

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Sr.No	Particulars of works	Man days	Wages	Material supply	Total (Rs.Per Ha.)	Man days	Wages	Material supply	Total
8	Part Nursery cost for causality replacement in SYO (222 seedlings per ha.) (wages Rs.11.90 and material supply Rs.3.62 total Rs.12.55 per seedling.)	7.78	3479.67	803.64	4283.31	155.60	69593.34	16072.80	85666.14
9	Watch and ward (10 months – 1 watcher per 10 ha)	27.38	12245.92	0.00	12245.92	547.60	244918.48	0.00	244918.48
10	Soil working for naturally grower plants and singling (1.15 M.D. per 100 plants)	1.15	514.35	10.00	524.35	23.00	10286.93	200.00	10486.93
11	Fire tracing	2.00	894.52	0.00	894.52	40.00	17890.32	0.00	17890.32
	Total	**133.41**	**59668.69**	**7174.64**	**66843.33**	**2668.20**	**1193373.80**	**143492.80**	**1336866.60**
	Contingency 3%		1790.06	215.24	2005.30		35801.21	4304.78	40106.00
	Labour Welfare 4%		2386.75	286.99	2673.73		47734.95	5739.71	53474.66
	Grand Total	**133.41**	**63845.50**	**7676.86**	**71522.36**	**2668.20**	**1276909.96**	**153537.30**	**1430447.26**
C. Second Year Operations									
1	Part nursery cost for seedlings for causality replacement (222 seedlings per ha) labour rate @ Rs.3.77 and M.S. Rs.1.82 per seedlings.	2.46	1155.27	404.04	1559.31	49.20	23105.35	8080.80	31186.15
2	Transportation of 222 seedlings for causality replacement from nursery to plantation site (including loading and unloading) wages 0.14 M.D Per 100 Seedling & M.S. Rs.1.82 per seedlings	0.31	145.58	404.04	549.62	6.20	2911.65	8080.80	10992.45
3	Planting for casualty replacement 222 seedlings (2.00 M.D. per 100 seedlings)	4.44	2085.12	0.00	2085.12	88.80	41702.34	0.00	41702.34
4	2 weedings and 1 soil working, with fertilizer application 2.5 M.D. per 100 seedlings at M.S. Rs. 0.82 per seedling	27.77	13041.37	911.02	13952.39	555.40	260827.45	18220.40	279047.85
5	Watch and ward 12 months -1 watcher per 10.00 ha	36.50	17141.16	0.00	17141.16	730.00	342823.26	0.00	342823.26
6	Fire tracing	2.00	939.24	0.00	939.24	40.00	18784.84	0.00	18784.84
	Total	**73.48**	**34507.74**	**1719.10**	**36226.84**	**1469.60**	**690154.87**	**34382.00**	**724536.87**
	Contingency 3%		1035.23	51.57	1086.81		20704.65	1031.46	21736.11
	Labour Welfare 4%		1380.31	68.76	1449.07		27606.19	1375.28	28981.47
	Grand Total	**73.48**	**36923.29**	**1839.44**	**38762.72**	**1469.60**	**738465.72**	**36788.74**	**775254.46**
D. Third Year Operations									
1	1 weeding and 1 soil working (1.50 M.D per100 seedlings) applying fertilizer @ Rs.0.82 per plant.	16.67	8220.01	911.02	9131.03	333.40	164400.19	18220.40	182620.59
2	Watch and ward 12 months 1 watcher per 10.00 ha	36.50	17998.22	0.00	17998.22	730.00	359964.42	0.00	359964.42
3	Counting of survival percentage Grid wise and Species wise and to Note the same on Register in May and October.	2.00	986.20	25.00	1011.20	40.00	19724.08	500.00	20224.08
4	Fire tracing	2.00	986.20	0.00	986.20	40.00	19724.08	0.00	19724.08
	Total	**57.17**	**28190.64**	**936.02**	**29126.66**	**1143.40**	**563812.76**	**18720.40**	**582533.16**
	Contingency 3%		845.72	28.08	873.80		16914.38	561.61	17475.99
	Labour Welfare 4%		1127.63	37.44	1165.07		22552.51	748.82	23331.33
	Grand Total	**57.17**	**30163.98**	**1001.54**	**31165.52**	**1143.40**	**603279.66**	**20030.83**	**623310.49**

Sr.No	Particulars of works	Man days	Wages	Material supply	Total (Rs.Per Ha.)	Man days	Wages	Material supply	Total
E. Fourth Year Operations									
1	Watch and ward 12 months 1 watcher per 10.00 ha	36.50	18898.13	0.00	18898.13	730.00	377962.64	0.00	377962.64
2	Counting of survival percentage Grid wise and Species wise and to Note the same on Register in May and October.	2.00	1035.51	25.00	1060.51	40.00	20710.28	500.00	21210.28
3	Fire tracing	2.00	1035.51	0.00	1035.51	40.00	20710.28	0.00	20710.28
	Total	**40.50**	**20969.16**	**25.00**	**20994.16**	**810.00**	**419383.20**	**500.00**	**419883.20**
	Contingency 3%		629.07	0.75	629.82		12581.50	15.00	12596.50
	Labour Welfare 4%		838.77	1.00	839.77		16775.33	20.00	16795.33
	Grand Total	**40.50**	**22437.00**	**26.75**	**22463.75**	**810.00**	**448740.03**	**535.00**	**449275.03**
F. Fifth Year Operations									
1	Watch and ward 12 months 1 watcher per 10.00 ha	36.50	19843.04	0.00	19843.04	730.00	396860.77	0.00	396860.77
2	Counting of survival percentage Grid wise and Species wise and to Note the same on Register in May and October.	2.00	1087.29	25.00	1112.29	40.00	21745.80	500.00	22245.80
3	Fire tracing	2.00	1087.29	0.00	1087.29	40.00	21745.80	0.00	21745.80
	Total	**40.50**	**22017.62**	**25.00**	**22042.62**	**810.00**	**440352.36**	**500.00**	**440852.36**
	Contingency 3%		660.53	0.75	661.28		13210.57	15.00	13225.57
	Labour Welfare 4%		880.70	1.00	881.70		17614.09	20.00	17634.09
	Grand Total	**40.50**	**23558.85**	**26.75**	**23585.60**	**810.00**	**471177.03**	**535.00**	**471712.03**
G. Sixth Year Operations									
1	Watch and ward 12 months 1 watcher per 10.00 ha	36.50	20835.19	0.00	20835.19	730.00	416703.81	0.00	416703.81
2	Counting of survival percentage Grid wise and Species wise and to Note the same on Register in May and October.	2.00	1141.65	25.00	1166.65	40.00	22833.09	500.00	23333.09
3	Fire tracing	2.00	1141.65	0.00	1141.65	40.00	22833.09	0.00	22833.09
	Total	**40.50**	**23118.50**	**25.00**	**23143.50**	**810.00**	**462369.98**	**500.00**	**462869.98**
	Contingency 3%		693.55	0.75	694.30		13871.10	15.00	13886.10
	Labour Welfare 4%		924.74	1.00	925.74		18494.80	20.00	18514.80
	Grand Total	**40.50**	**24736.79**	**26.75**	**24763.54**	**810.00**	**494735.88**	**535.00**	**495270.88**
H. Seventh Year Operations									
1	Watch and ward 12 months 1 watcher per 10.00 ha	36.50	21876.95	0.00	21876.95	730.00	437539.00	0.00	437539.00
2	Counting of survival percentage Grid wise and Species wise and to Note the same on Register in May and October.	2.00	1198.74	25.00	1223.74	40.00	23974.74	500.00	24474.74
3	Fire tracing	2.00	1198.74	0.00	1198.74	40.00	23974.74	0.00	23974.74
	Total	**40.50**	**24274.42**	**25.00**	**24299.42**	**810.00**	**485488.48**	**500.00**	**485988.48**
	Contingency 3%		728.23	0.75	728.98		14564.65	15.00	14579.65
	Labour Welfare 4%		970.98	1.00	971.98		19419.54	20.00	19439.54
	Grand Total	**40.50**	**25973.63**	**26.75**	**26000.38**	**810.00**	**519472.68**	**535.00**	**520007.68**
I. Eighth Year Operations									
1	Watch and ward 12 months 1 watcher per 10.00 ha	36.50	22970.80	0.00	22970.80	730.00	459415.95	0.00	459415.95
2	Counting of survival percentage Grid wise and Species wise and to Note the same on Register in May and October.	2.00	1258.67	25.00	1283.67	40.00	25173.48	500.00	25673.48
3	Fire tracing	2.00	1258.67	0.00	1258.67	40.00	25173.48	0.00	25173.48
	Total	**40.50**	**25488.15**	**25.00**	**25513.15**	**810.00**	**509762.91**	**500.00**	**510262.91**
	Contingency 3%		764.64	0.75	765.39		15292.89	15.00	15307.89
	Labour Welfare 4%		1019.53	1.00	1020.53		20390.52	20.00	20410.52
	Grand Total	**40.50**	**27272.32**	**26.75**	**27299.07**	**810.00**	**545446.31**	**535.00**	**545981.31**
J. Ninth Year Operations									
1	Watch and ward 12 months 1 watcher per 10.00 ha	36.50	24119.34	0.00	24119.34	730.00	482386.75	0.00	482386.75
2	Counting of survival percentage Grid wise and Species wise and to Note the same on Register in May and October.	2.00	1321.61	25.00	1346.61	40.00	26432.15	500.00	26932.15
3	Fire tracing	2.00	1321.61	0.00	1321.61	40.00	26432.15	0.00	26432.15
	Total	**40.50**	**26762.55**	**25.00**	**26787.55**	**810.00**	**535251.05**	**500.00**	**535751.05**
	Contingency 3%		802.88	0.75	803.63		16057.53	15.00	16072.53
	Labour Welfare 4%		1070.50	1.00	1071.50		21410.04	20.00	21430.04
	Grand Total	**40.50**	**28635.93**	**26.75**	**28662.68**	**810.00**	**572718.62**	**535.00**	**573253.62**

Exp.

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Sr.No	Particulars of works	Man days	Wages	Material supply	Total (Rs.Per Ha.)	Man days	Wages	Material supply	Total
K. Tenth Year Operations									
1	Watch and ward 12 months 1 watcher per 10.00 ha	36.50	25325.30	0.00	25325.30	730.00	506506.09	0.00	506506.09
2	Counting of survival percentage Grid wise and Species wise and to Note the same on Register in May and October.	2.00	1387.69	25.00	1412.69	40.00	27753.76	500.00	28253.76
3	Fire tracing	2.00	1387.69	0.00	1387.69	40.00	27753.76	0.00	27753.76
	Total	40.50	28100.68	25.00	28125.68	810.00	562013.60	500.00	562513.60
	Contingency 3%		843.02	0.75	843.77		16860.41	15.00	16875.41
	Labour Welfare 4%		1124.03	1.00	1125.03		22480.54	20.00	22500.54
	Grand Total	40.50	30067.73	26.75	30094.48	810.00	601354.56	535.00	601889.56

Abstract for Model No.5

(Amount in Rupees)

Sr.No.	Year of operation	Man days	Wages	Material supply	Total (Rs.Per	Man days	Wages	Material supply	Total
1	Pre Monsoon works	168.07	76602.47	524741.70	601344.17	3361.40	1532049.48	10393183.92	11925233.40
2	First Year Operations	133.41	63845.50	7676.86	71522.36	2668.20	1276909.96	153537.30	1430447.26
3	Second Year Operations	73.48	36923.29	1839.44	38762.72	1469.60	738465.72	36788.74	775254.46
4	Third Year Operations	57.17	30163.98	1001.54	31165.52	1143.40	603279.66	20030.83	623310.49
5	Fourth Year Operations	40.50	22437.00	26.75	22463.75	810.00	448740.03	535.00	449275.03
6	Fifth Year Operations	40.50	23558.85	26.75	23585.60	810.00	471177.03	535.00	471712.03
7	Sixth Year Operations	40.50	24736.79	26.75	24763.54	810.00	494735.88	535.00	495270.88
8	Seventh Year Operations	40.50	25973.63	26.75	26000.38	810.00	519472.68	535.00	520007.68
9	EighthYear Operations	40.50	27272.32	26.75	27299.07	810.00	545446.31	535.00	545981.31
10	Nineth Year Operations	40.50	28635.93	26.75	28662.68	810.00	572718.62	535.00	573253.62
11	Tenth Year Operations	40.50	30067.73	26.75	30094.48	810.00	601354.56	535.00	601889.56
rand Total		715.63	390217.50	535446.79	925664.29	14312.60	7804349.92	10607285.78	18411635.70

(ASHISH THAKARE IFS)
Deputy Conservator of Forests
Alibag

Range Forest Officer
Nagothane