COMPENSATORY AFFORESTATION SCHEME.

In lieu of Diversion of 7.722Ha of Forest land coming within Phulbani Forest Division and Diversion of 19.621Ha of Forest land coming within Ghumsur North. Forest Division for the project "Widening of existing 2-lane to 2-lane with 1.5m With paved shoulder from Km 00/00to 83/00 and 93/00 to 119/00 of NH-157on EPCmode.

(for Phulbani Division only)

(Degraded Forest land selected for Compensatory Afforestation – 24 ha in Katingia PRF of G.Udaygiri Range)

16Ha for diversion of 7.722 Ha of Phulbani Forest Division.

8Ha(Part) for diversion of 19.621 Ha of Ghumsur North Forest Division.

Block Plantation: 24.00ha

Divisional Forest Officer,
Phulbani Division.

SCHEME FOR COMPENSATORY AFFORESTATION

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1. Introduction:

The Executive Engineer NH Division Sambalpur has filed application for diversion of forest land vide proposal no FP/OR/ROAD/31054/2017. He has filed application for diversion of 27.343ha forest land coming within Phulbani Division and Ghumshur North Division. Out of 27.343ha, 7.722ha of forest land pertains to Phulbani Division and 19.621ha of Forest land pertains to Ghumsur North Division . As this is a Central Govt. Project two times of Forest land i.e. 16.00ha of Degraded Forest land for Phulbani forest Division and 8 ha out of 40ha Degraded Forest land of Ghumsur North Division has been selected combined in Katingia PRF of G.Udaygiri Range of this division. This forest block is being managed under the working plans of this division and it is suitable for taking of Compensatory Afforestation and also free from encroachment.

2. Details of Degraded forest land allotted for Compensatory afforestation:

The land details of Degraded Forest land area selected and allotted for compensatory afforestation is asfollows.

District: Kandhamal,
Name of Forest Division: Phulbani ; Range: G. Udaygiri
Name of the forest block: Katingia PRF
Section :G.Udaygiri, Beat: Lingagarh
Latitude: $84^0$18’38.06953” Longitude: 20^0 02’54.02152”

3. Description of Area

The land selected for Compensatory afforestation is within Katingia PRF under Administrative Jurisdiction of DFO, Phulbani. This forest block has been included in the Working Plan of the Division and allotted to Rehabilitation Working Circle and plantation working circle. Now 24.00ha area as depicted in the Topo sheet no F45S8 has been allotted for taking of Compensatory afforestation against diversion of 16 Ha of Phulbani forest division and 8Ha of Ghumsur North forest Divisionin forest land under PhulbaniDivision.

Soil: The land bears sallow depth of soil and degraded due to soil erosion. It is mostly alluvial residual hard soil.

Topography: The land is with mixed topography of Plains with hillocks. The altitude of plains is about 360 MSL where as the highest hillock is of 420 MSL. The slope is partly gently to moderate and partly about 25^0 to 30^0.

Climate: The area experiences a tropical climate. The average rainfall is 1400mm. summer is from March to June. The South west monsoon brings usual rain and most of the rainfall receives within July to October. Depression in Bay of Bengal brings wide spread rainfall to this region.

Vegetation: The selected area now bears thorny bushes with average height of 1- 1.5m. There are scattered trees of Sal, Dhuara, Kendu, Kurei, Eupaterioum,Lantena.

Biotic interference.

The area is heavily influenced by biotech interference i.e. grazing, encroachment is highly prevalent in this locality.

Villages surrounding the area. The land is surrounded by village- Biaripanga, Dakpala.

The population in these villages is as given below.

Name	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST
Biaripanga	109	440	229	211	34	406
Dakpala	26	122	55	67	0	122
Total	135	562	284	278	34	528

The population is mainly ST. SC (6.05 %) & ST (93.95 %). There is availability of labour for any forestry operation.

4. PlantationModel:-

It is proposed to take up plantation in Block Plantation mode @ 1000 plants per ha over 24.00 ha With Barbed wire fencing over 2700Rmt as per sitecondition.

5. Schedule of PlantationProgramme:-

As the area is in single patch it is proposed to take up the plantation work in one year and subsequent maintenance as per approved cost norm. The patch will be taken up in 1st year and maintenance in subsequent year. The planting details summarized below.

Sl No	**Parameters / description**	
1	Model	Aided Natural Regeneration(ANR)
2	No of Plants per Hectare	1000 no
3	Total area to be planted in Hectare	24
4	Total number of Plants to be planted.	24000
5	Spacing to be adopted	2.5mx2.5m
6	Fencing required	2700 m
7	Wage Rate	Rs308/-

The Cost norm for ANR plantation is at Annexure- I. The year wise flow of funds is as furnished below.

Year	Block Plantation over 24.00 ha		Special SMC Measure	Barbed Wire Fencing Cost in Lakh Rs for	Total amount in Lakh Rs
	Rate in Rs	Amount in Lakh Rs		2700 m	
0th yr	22788.00	546912.00		1749600.00	2296512.00
1st Yr	44617.00	1070808.00	443448.00		1514256.00
2nd Yr	25045.00	601080.00	88689.00		689769.00
3rd Yr	17833.00	427992.00	88689.00	34992.00	551673.00
4th Yr	5821.00	139704.00	88689.00		228393.00
5th Yr	5821.00	139704.00			139704.00
6th Yr	5821.00	139704.00		34992.00	174696.00
7th Yr	5821.00	139704.00			139704.00
8th Yr	5821.00	139704.00			139704.00
9th yr	5821.00	139704.00		34992.00	174696.00
10th Yr	5821.00	139704.00			139704.00
S. Total	151030.00	3624720.00	709515.00	1854576.00	6188811.00
EPA / VSS Activation in two villages @ Rs0.75 lakh each					150000
S. Total					6338811.00
Cost escalation @20%					1267762.2
Total Cost					7606573.00

(Rupees Seventy six lakh six thousand five hundred seventy three Only.)

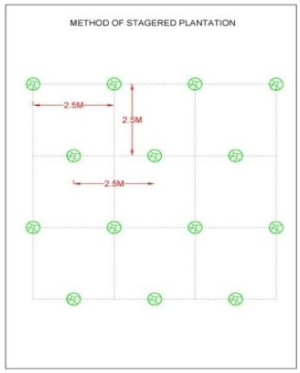
Forest Range Office Udayagiri Range

Divisional Forest Officer Phulbani Forest Division

5. Technical details:-

a) **General:** The plantation will be taken up in Block Plantation mode. The year wise activities to be implemented has been enumerated in the approved Cost norm atannexure-I.

b) **Spacing:** The plant density proposed for planting is @1000 plants per ha. The spacing is 2.5mX2.5m which is generally adopted in this tract. It is suggested to have the line of planting along the contour and plant to plant in adjacent row isstaggered



This will reduce the runoff and encourage percolation of water and enrichment of vegetation.

c) **Choice of Species:** The suitable species for the site as indicated from the present vegetation is preferable drought hardy and pioneer species as per plant succession. Mostly indigenous species will be planted up. In the plain / moderate slope species suggestedare

1. *Azadirachtaindica (neema)*
2. *Bombax ceiba(Simili)*
3. *Cassia fistula(Sunari)*
4. *Dendrocalamusstrictus.(Baunsha)*
5. *Gmelina arborea(Gambhari)*
6. *Mangiferaindica (Aamba)*
7. *Peltoferumferrugenium (Radha chuda)*
8. *Phyllanthus emblica(Anla)*
9. *Pongamiapinnata (karanja)*
10. *Samaniasaman (badaChakunda)*
11. *Syzygiumcumini(Jamun)*
12. *Terminalia tomentosa (Asan)*
13. *Ziziphus mauritiana(Barakoli)*
14. *Artocarpusheterophyllus(Jack Fruit)*

Towards uphill side and in Barren hill Plantation species of drier tract are to be preferred. These are

1. *Bombax ceiba(Simili)*
2. *Cassia fistula(Sunari)*
3. *Caesalpiniabonduc (Gila)*
4. *Cleistanthuscollinus.(Karada)*
5. *Terminalia tomentosa(Asan)*
6. *Ziziphus mauritiana(Barakoli)*
7. *Ficus bengalensis,(bara)*
8. *Dendrocalamusstrictus.(Baunsha)*

d) PlantationMethod.

d(i) **Alignment, stacking and Pitting.**

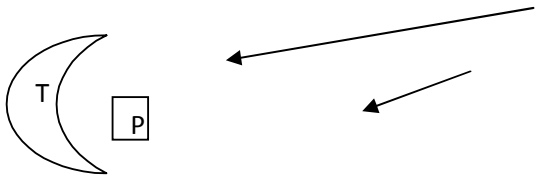
Alignment and stacking will be taken up in the month of January. Pits of size 45 cm x 45cm x 45cm are to be dugout with a spacing of 2.5mt x 2.5mt @1000 plants per hectare. Alignment will be made along the contour strictly. It is also suggested to have plants staggered within adjacent rows to reduce runoff.

d(ii) Planting

Plantation will be done after first regular shower of monsoon and to be completed within a week. Basal dose of NPK/DAP fertilizer @50gm per plant to be given. Utmost care is to be taken to apply insecticides @10gm per pit. Casualty replacement is to be taken up during 1st year of plantation just after one month of planting. 10% causality replacement is also suggested during 2nd Year.

d(iii) Weeding, Soil working and Application of Fertilizer.

Post planting operation is most vital in success of any planting program. It is proposed to carry out two weeding during first year. Preferable Strip Weeding along the contour will be taken up. One weeding and soil working has to be done in second year and third year of plantation. Application of 50gms of NPK/Uria to be added to the soil per plant at the time of soil working during rains during 1st & 2nd year of plantation. During second weeding, provision of Half Moon trench is suggested. This will also be repeated during 2ndyear also. The design is furnishedbelow.



T :Halfmoontrench Indicates slopedirection.

P: Plant position.

d(iv) Application of insecticide:

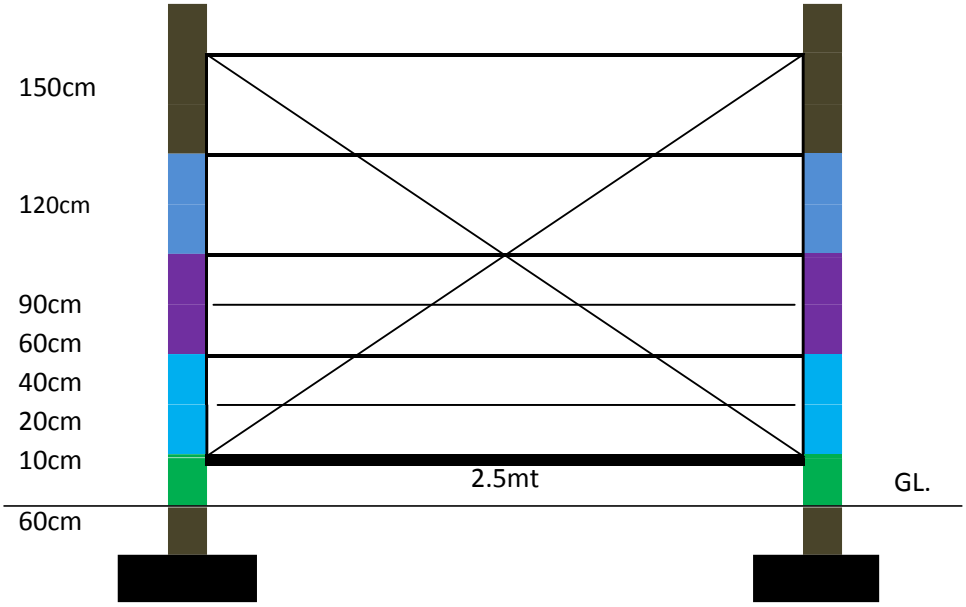
To prevent infestation of planted seedlings with diseases due to influx of insects and pests into the area, it is required to apply insecticides like Phorate at the time of planting. Foliar spraying of insecticide may be done if badlynecessary.

d(v) Fire line tracing and maintenance:

Tender seedlings planted are subject to damage by ground fire. It is required to protect the plantation and forest growth from fire hazard by tracing of fire lines. Boundary of the plantation and several internal lines need to be scrapped to a width of 2mtr during February-March. The cut back materials and dry leaves along with fire lines should be separated and dumped in pits outside the plantation area.

d(vi) Fencing.

Barbed wire fencing is suggested along the plantations.



Description of Barbed Wire Fencing

It is suggested to put T shaped pillars at an interval of 2.5 m. The length of such pillar is 2.40 m. (1.8m above the ground & 0.60m below the ground.) Size 15cmx10cm. The Lower bar of inverted "T" is of 30cm including the width of the pillar. There will be 7 strands of two ply barbed wire at a height of 10cm,20cm, 40cm, 60cm, 90cm, 120cm ,and 150cm. Two strands will be put diagonally (connecting10cm point to 150 cm point & 150cm point to 10cm point)

Details of Calculation of Barbed wire fencing for 1800 Rmt.					
Sl No	**Particulars of work**	**Unit**	**Quantity**	**Rate/ each**	**Amount**
1	Cost of barbed wire fencing (1st Year)	Rmt	2700	648	1749600.00
2	Maintenance of barbed wire fencing (3rd Year) @2% of the cost				34992.00
3	Maintenance of barbed wire fencing (6th Year) @2% of the cost				34992.00
4	Maintenance of barbed wire fencing (9th Year) @2% of the cost				34992.00
	TOTAL				1854576.00

(Rupees Eighteen Lakh Fifty Four Thousand Five Hundred Seventy Six only)

d(vii) Watch and ward:

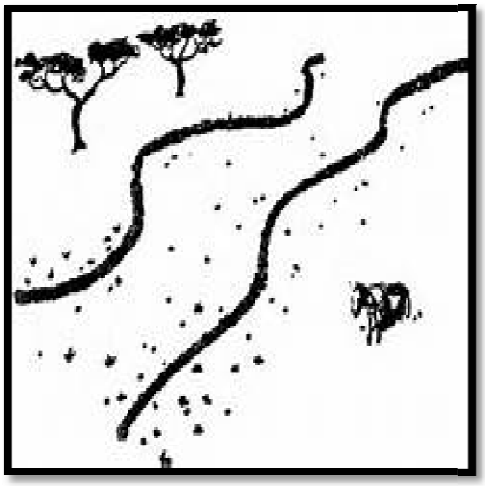
Watch and ward is necessary to protect the area from grazing, fire accident and other biotic interference. Necessary provisions have been made in the approved cost norm.

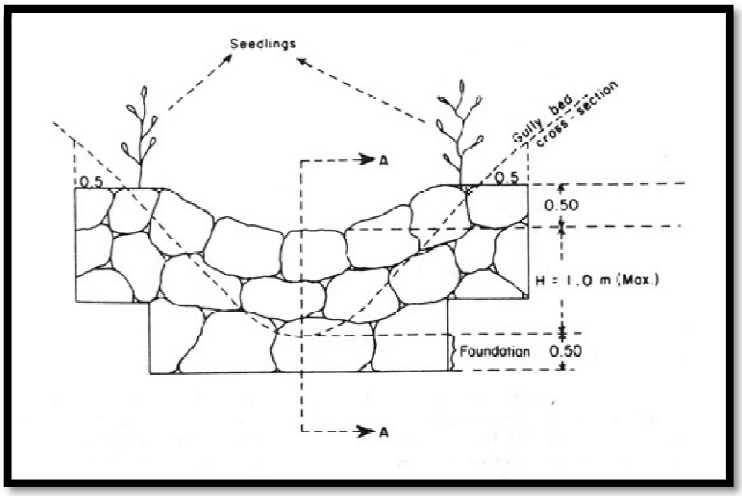
e) Soil and Moisture ConservationWorks:

In order to enhance soil moisture, check run off and arrest carrying of silt in the flow water it is required to have staggered trenches (Size 2m longx0.50 m width X0.5 m Deep) along the contour. Line to line interval is to be kept at 4m or as required considering the degree of slope of the land.

Besides the provisions available in the cost norm, as the tract is hilly and two rivulets are passing through it is suggested to have Loose Boulder Check Dam on the dry seasonal nalla to check soil erosion and enhance ground water recharge. It is also suggested to have Percolation Pit,staggered trench for soil moisture conservation.

Staggered trench.





A) Loose Bolder Check Dam (LBCD)

Size-10x10'x5'

i) Requirement of Boulder (Picked AndBroken)
½(10+4)x10'x5'=350 cft or 9.90 cum
@Rs 185/ Cum — Rs 1831.50

ii)Labour for construction ofLBCD/Cum

Mulia 1.04 @rs308/MD	Rs320.32
Mason Special 0.17nos@ Rs458/ one	Rs77.86
Stone packer 0.35 nos@Rs348/Nos	Rs121.80
Total	Rs 519.98.

For 9.90 Cum
=5147.802

Total i+ii =Rs 6979.302 There fore cost of one LBCD is Rs 6980.00
Ten no of LBCD will be constructed in each nala therefore 20 numbers are required to be constructed. Total cost of LBCD will be Rs 139600

B) PercolationPit

Size- 1mx1mx1m

Prescribed Norm 1 MD for 1.5 percolation pit. 50 percolation pit to be dug in one hect. Therefore in 24hect1200 pit are to be dug. Total man days required 800. Expenditure will be Rs 246400.

Total Expenditure A+B will be Rs 386000. In addition to cost of construction there will be provision of maintenance cost @20% of total cost in 2^{nd},3^{rd},4^{th} year

f) Protection (Fencing, Watch man, People's Participationetc.):

In order to provide protection to plantation so raised, Provision for Fencing, watchman has been made and discussed and elaborated in foregoing paragraphs.

In respect of people's participation, it is proposed to constitute and strengthen the VSS in Biaripanga and Dakpala village. For activation / constitution & motivation of VSS Rs1.00 lakh has been provided to carryout strengthening of VSS, Vocational training and for other EPAActivities.

g) Proposed Monitoring Mechanism:

Implementation of the planting program will be monitored by the DFO, Phulbani and RCCF, Berhampurperiodically. As other technical facilities / tools are now available at the hands of supervisingauthority and

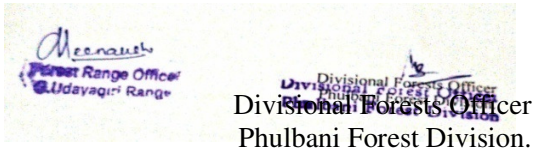
KML file along with Coordinates available it can be easily monitored from Satellite imagery / Google earth maps.

h) Any otherinformation:

The villagers are mostly tribal's and they have a liking for fruit bearing trees i.e. tamarind, Mango, Jack Fruit and Jamun. It should be our endeavor to plant more fruit bearing trees (about 15%) to encourage their participation. Periodical interaction with VSS will go a long way in its success.

Total Project Cost under Compensatory Afforestation comes to **Rs 76.06 lakh. (Rupees Seventy six lakhs six** Thousand **only).**

Encl: 1. Annexure- I



Divisional Forests Officer
Phulbani Forest Division.

PLANTATION MODEL

Block Plantation with 1000 plants per ha. will be taken up in the site followed by maintenance of plantation of 10 years as per the requirement stated in F.No. 11-168/2009-FC Date 14.2.2012 of MoEF, Govt. of India

DETAIL OF YEAR WISE BREAK UP OF REQUIREMENTS OF FUNDS IS AS UNDER

COST NORM FOR BLOCK PLANTATION @ 1000 PLANTS PER HECTARE WAGE RATE RS 308/- PER DAY						
Sl No	**Name of the Work**	**preferable Period of Execution**	**Person days**	**Labour cost @ Rs 308/- per day**	**Material cost (Rs)**	**Total cost (Rs)**
0th Year (ADVANCE WORK) PRE-PLANTATION OPERATION						
1	Survey Dermarcation& Pilar posting	Nov-Dec	2	616	0	616.00
2	Site preparation	Nov-Dec	8	2464	0	2464.00
3	Allignment& stacking of pits	Jan-Feb	2	616	0	616.00
4	Digging of Pits(30 cm cube)	Feb-March	25	7700		7700.00
5	Nursery cost(6 montn old seedlings) part @ 12.43/- seedlings(Rs. 8.67 in oth year + Rs.3.76 in 1st yr.) for 1100 seedlings (1000+100)	Jan-March	27.5	8470	1837	10307.00
	Total		**64.5**	**19866**	**1837**	**21703.00**
6	Monitoring & supervision charges 5% of the total cost					**1085.15**
	Grand Total					**22788.00**
1st YEAR/PLANTING YEAR						
1	Nursery cost(6 montn old seedlings) balance @ 3.08 for 1100 seedlings	Apr-July	13	4004	496	4500.00
2	Fencing for an average of 250 meters /ha @ Rs.76.80/- per meter for bamboo twigs and bamboo thorn fencing.	Jan-Feb	38	11704	8560	20264.00

3	Carriage & Planting, Causality replacement & application of insecticides manure etc.	July -Aug	13	4004	0	4004.00
4	Cost of Insecticides & Fertiliser (a) NPK @50 gm/ plant as basal dose =50 Kg @Rs.24/- per Kg=Rs.1200.00/- (b) Urea @ 70 gm/ plants in two subsequent dose @ Rs.6/- per Kg=Rs.420.00/- (c) Granular insecticides (Thimate, Phorate etc) @ 5 gm/ plant @ Rs.80/- per Kg=400.00/-		0	0	2020	2020.00
5	1st weeding (Complete weeding)	Aug-Sept	5	1540	0	1540.00
6	Manuring Urea @ 35 gm/ plant	Aug-Sept	4	1232		1232.00
7	Second weeding(Complete weeding)	Sept-Oct	4	1232	0	1232.00
8	Soil working (50 cm radius around plants) & manuring urea 35 gm per plants	Sept-Oct	5	1540	0	1540.00
9	Soil conservation measures in the form of staggered trench of size 2mx0.5 mx0.5 m @ 30 nos per Ha	Sept-Oct	10	3080	0	3080.00
10	Fireline tracing & Inspection Path	Feb-March	3	924	0	924.00
11	Watch & ward	Agu-March	7	2156	0	2156.00
	Total		**102**	**31416**	**11076**	**42492.00**
12	Monitoring & supervision charges 5% of the total cost					**2124.60**
	Grand Total		**102**	**31416**	**11076**	**44617.00**
2nd year Maintenance						
1	Casualityreplacement(10 % with nursery cost)	July-Aug	2.5	770	1036	1806.00
2	Weeding (complete weeding)	Sept-Oct	4	1232	0	1232.00
3	Repairing and maintenance of Bamboo fence including material cost	Sept-Oct	20	6160	5080	11240.00

4	Cost of Fertiliser (NPK @70 gm/ plant)Rs.24/- per Kg & Insecticides @ 5 gm /plants for 160 plants =800 gm @ 80/- per Kg		0	0	1720	1720.00
5	Soil working (50 cm radius arround plants)	Oct-Nov	5	1540	0	1540.00
6	Application of fertiliser & Insecticides	Sept-Oct	2.5	770	0	770.00
7	Fireline tracing (2mtwide file over 400 mt. long)	Feb-March	3	924	0	924.00
8	Watch & ward	Apr-March	15	4620	0	4620.00
	Total		**52**	**16016**	**7836**	**23852.00**
9	Monitoring & supervision charges 5% of the total cost					**1192.60**
	Grand Total		**52**	**16016**	**7836**	**25045.00**
3rd year maintenance						
1	Weeding &appliation of fertiliser	Aug-Sept	5	1540	0	1540.00
2	Cost of fertiliser (NPK @50 gm/plant) @24/- per Kg		0	0	1200	1200.00
3	Repairing and maintenance of Bamboo fence including material cost	Sept-Oct	20	6160	1000	7160.00
4	Soil working (50 cm radius arround plants) & application of fertiliser	Oct-Nov	5	1540	0	1540.00
5	Fireline tracing (2m wide fireline over 400 mt length) & cultural operation	Feb-March	3	924	0	924.00
6	Watch & ward	Apr-march	15	4620	0	4620.00
	Total		**48**	**14784**	**2200**	**16984.00**
7	Monitoring & supervision charges 5% of the total cost					**849.20**
	Grand Total		**48**	**14784**	**2200**	**17833.00**
4th year Maintenance						
1	Fireline tracing (2m wide fireline over 400 mt length) & cultural operation	Feb-March	3	924	0	924.00
2	Watch & ward	Apr-March	15	4620	0	4620.00

	Total		**18**	**5544**	**0**	**5544.00**
3	Monitoring & supervision charges 5% of the total cost					**277.20**
	Grand Total		**18**	**5544**	**0**	**5821.00**
5th year Maintenance						
1	Fireline tracing (2m wide fireline over 400 mt length) & cultural operation	Feb-March	3	924	0	924.00
2	Watch & ward	Apr-March	15	4620	0	4620.00
	Total		**18**	**5544**	**0**	**5544.00**
3	Monitoring & supervision charges 5% of the total cost					**277.20**
	Grand Total		**18**	**5544**	**0**	**5821.00**
6th year Maintenance						
1	Fireline tracing (2m wide fireline over 400 mt length) & cultural operation	Feb-March	3	924	0	924.00
2	Watch & ward	Apr-March	15	4620	0	4620.00
	Total		**18**	**5544**	**0**	**5544.00**
3	Monitoring & supervision charges 5% of the total cost					**277.20**
	Grand Total		**18**	**5544**	**0**	**5821.00**
7th year Maintenance						
1	Fireline tracing (2m wide fireline over 400 mt length) & cultural operation	Feb-March	3	924	0	924.00
2	Watch & ward	Apr-March	15	4620	0	4620.00
	Total		**18**	**5544**	**0**	**5544.00**
3	Monitoring & supervision charges 5% of the total cost					**277.20**
	Grand Total		**18**	**5544**	**0**	**5821.00**
8th year Maintenance						
1	Fireline tracing (2m wide fireline over 400 mt length) & cultural operation	Feb-March	3	924	0	924.00
2	Watch & ward	Apr-March	15	4620	0	4620.00
	Total		**18**	**5544**	**0**	**5544.00**

3	Monitoring & supervision charges 5% of the total cost					**277.20**
	Grand Total		**18**	**5544**	**0**	**5821.00**
9th year Maintenance						
1	Fireline tracing (2m wide fireline over 400 mt length) & cultural operation	Feb-March	3	924	0	924.00
2	Watch & ward	Apr-March	15	4620	0	4620.00
	Total		**18**	**5544**	**0**	**5544.00**
3	Monitoring & supervision charges 5% of the total cost					**277.20**
	Grand Total		**18**	**5544**	**0**	**5821.00**
10th year Maintenance						
1	Fireline tracing (2m wide fireline over 400 mt length) & cultural operation	Feb-March	3	924	0	924.00
2	Watch & ward	Apr-March	15	4620	0	4620.00
	Total		**18**	**5544**	**0**	**5544.00**
3	Monitoring & supervision charges 5% of the total cost					**277.20**
	Grand Total		**18**	**5544**	**0**	**5821.00**

ABSTRACT						
Sl.No	**Year**	**No. person days**	**Labour cost@308/- per day**	**Materials**	**Monitoring & supervision charges 5% of the total cost**	**Total cost**
1	0 th year	64.5	19866.00	1837.00	1085.15	22788
2	1st year	102	31416.00	11076.00	2124.60	44617
3	2nd year	52	16016.00	7836.00	1192.60	25045
4	3rd year	48	14784.00	2200.00	849.20	17833
5	4th year	18	5544.00	0	277.20	5821
6	5th year	18	5544.00	0	277.20	5821
7	6th year	18	5544.00	0	277.20	5821
8	7th year	18	5544.00	0	277.20	5821
9	8th year	18	5544.00	0	277.20	5821
10	9th year	18	5544.00	0	277.20	5821
10	10th year	18	5544.00	0	277.20	5821
	Total	**392.50**	**120890.00**	**22949.00**	**7192.00**	**151030.00**

Divisional Forest Officer
Phulbani Forest Division

Meenakshi
Forest Range Officer
G.Udayagiri Range

ESTIMATE FOR BARBED WIRE FENCING

01). 02 ply barbed wire (5 Rmt per kg)

7 straight strand x 1000 Mt	=	7000	Mt	
2 Diagonal strand=2x $\sqrt{((\ [\![6.5')]\!]\ ^2+\ [\![(8.2')]\!]\ ^2)}$ = 2x10.5ft				
=21.00ftx400 nos=8400ft or	=	2560	Mt	
		9560	Mt	

Requirment of Barbed wire per Km

Cost per Km= 9560/5=1912 kg @ Rs.80/Kg **Rs. 1,52,960.00**

02). Construction of RCC pillars of size -

Length- 8ft, Bottom width 6"x6", Top width- 4"x4"

Reinforced with 6mm rods with proper curing

$\{8^{\wedge}{}' \ x\ (6"+4")/2\} x\ (6"+4")/2$ =1.34 cft or 0.038 cum

i) Cost of c.c work 1:2:4=0.038 cum @ 5408.18 /cum				
	=		205.51	
ii) Cost of rod including cutting ,bending& binding				
0.038x0.9qtl=0.0342 qtl @ Rs. 10966.12 /qtl	=		375.04	
iii) Contigency (15%) including				
Curing ,Stacking,provision of hooks etc	=		87.08	
	Rs.	667.64		
or	Rs.	668.00		

Requirement of pillars per KM-

Spacing = 2.5mtx2.5mt			
Requirement = 1000mt/2.5mt	=		400
Strut pillar in evry 10th pillar = (400/10)x2	=		80
			480 Nos.

Cost of pillars per Kilometer = 480@ 668/- **Rs. 3,20,640.00**

3) Fitting fixing of RCC pillars in positio with hbg metal (4cm) in C.M (1:4:8)

i) Digging of pits 1.5'x1.5'x1.5' = 3.375cft/pit

for 480 pits, 480x3.375=1620 cft or 45.86 cum @ Rs.13244/100cum

	Rs.	6073.70	
or Say	**Rs.**	**6,074.00**	

ii) Fixing of pillars with 4cm hbg metals in C.M 1:4:8

pit size-1.5'x1.5'x1.5'	=	3.375 cft
Deduct 1/3rd of butu of pillar i.e3.375/3	=	(-) 1.125 cft

Toalc.c work per pillar

For 480 pillars = 480/2.25 = 1080cft or 30.577 cum @ Rs. 3743.54/cum

		Rs.	**1,14,466.00**
04)	Labour for staightening the barbed wire and fixing & clipping with pillars 70M.d per km@308/- =	**Rs.**	**21,560.00**
05)	carriage of Barded wire & pillars to work site @Rs. 1000/tl. and cost of loading & unloading within 5 km distance Appromately 10tld @ 800/tld	**Rs.**	**18,000.00**
06)	Provision of one Iron Gate of size (4' x 5') on LS	**Rs.**	**7,500.00**
	Total	**Rs.**	**6,41,200.00**
	Labour Cess 1%	**Rs**	**6,412.00**
	Expenditure per 1 Km of barbed wire fencing	**Rs.**	**6,47,612.00**
	Or say, Rs.647.612/- or Rs.648/- per meter		
07)	Expenditure towards maintenance for 3 years (3rd, 6th & 9th year) @ 2% of cost per km = 3 x 2% x Rs.639628.96/-	Rs.	38856.72
	Expenditure per 1 Km of barbed wire fencing including maintenance	**Rs.**	**6,86,468.72**

So, expenditure per running meter for fencing = Rs.686/Mtr.
(Rupees Six Hundred Eighty Six) only

ANALYSIS

1 (a) Earth work in excavation in foundation in hard soil with in initial lead 50m and lift 1.5m including rough dressing and breaking of clods

Maximum 5 to 7 cm size including leveling& dressing etc. per 100 Cum.

Male Mulia	Piece rate	43.00				Rs.	13244.00	
Female Mulia				308.00				
						Rs.	**13244.00**	**/100Cum**

2 Cement concrete (1:4:8)with 4cm size hard granite metal includind laying compacting ,curing with all cost ,conveyance, royalty of material etc per Cum.(A/R 24 item no. 4)

H.G. Metal	0.96	Cum.	@	Rs.	1223.4		Rs.	1174.46
sand	0.48	Cum.	@	Rs.	443.0		Rs.	212.64
cement	1.72	Qntl.	@	Rs.	630.0		Rs.	1083.6
Mason 2nd class	0.18	Nos.	@	Rs.	398.00	/day	Rs.	71.64
Man mulia	1.8	Nos.	@	Rs.	308.00	/day	Rs.	554.4
Woman mulia	1.4	Nos.	@	Rs.	308.00	/day	Rs.	431.2
Man mulia	0.7	Nos.	@	Rs.	308.00	/day	Rs.	215.6
							Rs.	**3743.54**	**/Cum**

3 Cement concrete (1:2:4)with 12cm size C.B.H.G chips includind cost ,carriage & royalty etc. complete

H.G. Chips 12mm	0.96	Cum.	@	Rs.	1581.4	Rs.	1518.14
sand	0.45	Cum.	@	Rs.	443.42	Rs.	199.54
cement	3.23	Qntl.	@	Rs.	630.0	Rs.	2034.9

Mason 2nd class	0.6	Nos.	@	Rs.	398.00	/day	Rs.	238.8
Man mulia	4.6	Nos.	@	Rs.	308.00	/day	Rs.	1416.80
							Rs.	**5408.18**

/Cum

Cutting bending , binding ,straightening and tying the grills and placing in position including cost of M.S of Tor Steel & binding wires etc. Ref-A/R-2006 item No.9 page 52

4

Taking output for 1QT.

Cost & carriage of HYSD steel including 5% For wastage & overlapping	1.05	qntl		Rs.	5500.00		Rs.	5775.00
Binding wire(GI)	8	Kg		Rs.	80		Rs.	640.00
Labour for cutting bending shifting of site laying & placing in position .								
Mate	0.44	Each			398.00		Rs.	175.12
Black smith special	4	Each			398.00		Rs.	1592.00
Semi-skilled Mulia	8	Each			348.00		Rs.	2784.00
							Rs.	**10966.12**

/QT