SCHEME FOR

COMPENSATORY AFFORESTATION SCHEME

OVER 11.00 Ha. (or 27.20Ac.) NON-FOREST LAND

AGAINST DIVERSION OF 8.361Ha. (20.66 Ac.) FOREST LAND FOR ESTABLISHMENT OF INDUSTRY BY M/S SHYAM METALLICS & ENERGY LTD. AS APPLIED BY M/S IDCO.

IN RENGALI TAHASIL OF SAMBALPUR DISTRICT, WITHIN SAMBALPUR FOREST DIVISION

Scheme Prepared by:

P. K. Sarangi IFS (Retd.)

SALIENT FEATURES OF THE COMPENSATORY AFFORESTATION SCHEME

THE PROJECT PROPONENT: SHYAM METALICS & ENERGY LTD.

C A SCHEME TO BE IMPLEMENTED BY GOVERNMENT OF ODISHA, FOREST & ENVIRONMENT DEPARTMENT THROUGH D.F.O, SAMBALPUR.

1. Name of the Project - "SHYAM METALICS & ENERGY LTD"
2. Total Forest area required for the Project - 8.361Ha.
3. Total Non Forest Area Transferred to Forest Department for Compensatory Afforestation - Nil
4. Proposed Treatments:
   a. Aided Natural Regeneration (ANR) @800 plants per ha. - 11.00 Ha.
5. Location : Mauza - Baunsen

   Tahasil - Rengali

   District - Sambalpur

   Forest Division - Sambalpur

   Forest Range - Rrengali

CHAPTER- I

BRIEF NOTE ON THE PROPOSED PROJECT

The project proponent M/s Shyam Metalics & Energy Ltd steel project is located at Pandoloi, in Sambalpur District of Odisha. The project area covers two villages such as Pondloi and Nishanbhanga, under Rengali Tahsil. The project site is at latitude **21^0 40' 50.43'' N** and longitude **84^0 02' 30.63'' E, MSL 208m.**

The project is located by the side of State Highway No.10, joining Sambalpur-Rourkela. NH-6 and 42 are located at a distance of about 25km each from the site.

The project is situated by the side of Railway line of Sambalpur-Jharsuguda section. The nearest railway station Rengali is 8 km away from project site.

The company was initially having DRI Kilns, IFs and rolling mill and for the proposed expansion, Govt. Of India in their Ministry of Environment Forest & Climate Change granted prior EC to setup :-

1. Sponge Iron - 8,00,000 TPA.
2. Billet Caster - 2,00,000 TPA
3. Rolling Mill - 6,60,000 TPA
4. Sinter Plant - 8,82,000 TPA
5. MBF - 7,42,500 TPA
6. Ferro Alloys - 2,50,000 TPA
7. S M S - 14,44,286 TPA
8. Coke Oven - 5,50,000 TPA
9. Pelletisation & Beneficiation - 3,00,000 TPA
10. Coal Washery - 18,00,000 TPA
11. Power - 225 MW
12. Bloom Caster - 3,53,500 TPA
13. Lime Plant - 60,000 TPA.

The company started production after installing some of the facilities approved under EC within its validity period and has taken validity extended vide F.No. J-11011/495/2006-IA II (I)of MoEFCC, dated 2nd December, 2016. The company mean while intents to setup additional 10 Lakh TPA Iron Ore Pellet Plant with existing approved 3Lakh TPA pellet plant, and to reduce Power generation by 50 MW (from approved EC quantity of 225 MW to 175 MW), so as to keep all emissions and effluents within the approved scope of existing EC, so as to be within the scope of 7(ii) of EIA Notification 2006.

The project is "primary ferrous" metallurgical unit belonging to schedule 3(a) category A.

Water will be drawn from Hirakud Reservoir of river Mahanadi. Fresh water requirement after the proposed change has been estimated to be 55702 KLD against 62612 KLD as approved in EC and there will be a reduction of **6910 KLD.**

Power requirement after the change has been estimated to be project is estimated to be about 216.12 MW, whereas captive power generation will be reduced from 225 MW to 175 MW. Balance power will be purchased from state supply.

In the existing plant, the haulage roads are been installed with sprinklers and road leading to material handling and storage have been concretized for control of fugitive emission. Across the railway siding, 44 nos. of sprinklers are been installed which drastically reduces the fugitive emissions due to transportation and handling.

Brief description of nature of the proposed project:

The Proposed expansion cum modification project is a brown field primary metallurgical (ferrous) project, in which the capacity of Pellet Plant will be enhanced to 1200000 TPA from 300000 TPA, total CPP capacity will be reduced from 225 MW to 175 MW along with reduction in Coal Washery throughput from 1500000 TPA to 1000000 TPA. Along the same line, considering the market potential

Need of the project and its importance to the country and or region:

Steel is traditionally considered the backbone of national economic development. It is a major input into sectors which support economic growth such as infrastructure, machinery, power and railways, as well as being important for fast growing sectors, in particular automobiles and consumer durables.

The steel industry in India is currently at an inflexion point brought about by ambitious capacity expansion plans, entry of new players and increased competition on one hand and consistently rising and shifting demand patterns on the other.

This rise in demand is expected to be driven by the construction, automobile and consumer durables sectors

In the construction sector. Government spending in infrastructure is expected to surge during the twelfth plan period. thus driving up demand for steel used in construction.

Most steel producers are planning major capacity expansions through both Greenfield and Brownfield expansions. This, coupled with the entry of new players will result in a significant rise in steel production over the next ten years.

TMT rods as being manufactured by the company are most suitable in construction due to its high workability.

The other proposed product of M/s Shyam Metalics & Energy Ltd are ferroalloys like Fe-Mn, Si-Mn, Fe-Cr and Fe-Si, which has various uses for quality steel production.

The above stated facts indicate importance steel as well as Ferro alloys products in the development of a country. As Odisha has rich source of all the ores from Hematite to Chromatite to Manganese ore, the project bear a lot of significance for development of state as well as the nation.

Now the said Company is undertaking certain expansion projects for which additional land is required. Therefore the current proposal for diversion of Forest land is required.

The total Forest area requiring diversion for the project is 8.361Ha for which non forest land of 11.00 Ha has been identified and in the process of transfer to Forest Department. The identified CA land of 11.00 Ha, contain some Forest growth. Hence it is proposed to take up for ANR activities @800 plants/per ha. over the identified land in Baunsen village of Rengali Tahasil.

The present scheme aims at preparation of a site-specific Compensatory Afforestation Schemes for ANR Plantation @800 plants/per ha. over 11.00 hectares of non forest land identified against proposed diversion of 8.361 Ha of Forest Land.

Details of Identified land for Compensatory Afforestation

Name of the Village : Baunsen
Name of Tahasil : Rengali

Sl No.	Khata No.	Plot No.	Area in Ac.	Kissam
1	40	344	9.730	Gochar
2	40	348	9.330	UJJ
3	40	349	0.380	Gochar
4	42	343	0.620	Patita
5	42	345	2.960	Masa
6	42	350	1.280	Patita
7	42	353	2.900	Patita
TOTAL		6 Plots	27.200	
		OR - 11.00 Ha		

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

A. INFORMATION ON NON-ENCROACHMENT AND NON-ENCUMBRANCE.

The non forest Land identified for Compensatory Afforestation against the forest land required for the project will be transferred to Forest Department and Pattas have to be issued by the concerned Tahasildar in favour of Forest Department. The non-encroachment and non-encumbrance certificate furnished by Tahasildar, Rengali is annexed (***Annexure-I***).

B. GPS COORDINATES AND GPS MAP OF THE COMPENSATORY AFFORESTATION SITE

The area has been demarcated through DGPS survey and RCC pillars have been posted around the identified area and the same has been depicted in the village sheet map.

DGPS survey data showing latitude and longitude of each point and their chainage with bearing is also enclosed in the map prepared thereon (Maps enclosed).

CO-ORDINATES OF C.A.LAND BOUNDARY POINTS

POINT ID	EASTING	NORTHING	LONGITUDE	LATITUDE
1	189487.611	2399899.194	83°59'58.39584"	21°40'31.28916"
2	189354.554	2399925.904	83°59'53.75436"	21°40'32.07288"
3	189148.273	2400014.387	83°59'46.52628"	21°40'34.81716"
4	189004.881	2400126.914	83°59'41.46756"	21°40'38.38188"
5	188995.587	2400201.413	83°59'41.09460"	21°40'40.79568"
6	189087.622	2400225.916	83°59'44.27628"	21°40'41.64960"
7	189159.276	2400243.793	83°59'46.75416"	21°40'42.27528"
8	189394.742	2400307.223	83°59'54.89412"	21°40'44.48388"
9	189445.704	2400327.115	83°59'56.65164"	21°40'45.16212"
10	189529.066	2400293.292	83°59'59.57160"	21°40'44.11596"
11	189561.156	2400278.107	84°00'00.69696"	21°40'43.64292"
12	189542.920	2400227.270	84°00'00.09720"	21°40'41.98008"
13	189535.933	2400219.937	83°59'59.85960"	21°40'41.73744"
14	189516.375	2400207.190	83°59'59.18820"	21°40'41.31120"
15	189514.048	2400203.069	83°59'59.11044"	21°40'41.17584"
16	189489.379	2400201.878	83°59'58.25364"	21°40'41.12148"
17	189480.383	2400197.645	83°59'57.94404"	21°40'40.97856"
18	189474.033	2400196.587	83°59'57.72408"	21°40'40.94004"
19	189453.353	2400186.595	83°59'57.01200"	21°40'40.60272"
20	189450.965	2400118.109	83°59'56.97528"	21°40'38.37648"
21	189437.222	2400077.035	83°59'56.52528"	21°40'37.03368"
22	189438.744	2400048.680	83°59'56.59728"	21°40'36.11388"
23	189420.561	2400044.088	83°59'55.96836"	21°40'35.95332"

24	189426.026	2400021.105	83°59'56.17392"	21°40'35.21028"
25	189442.367	2400016.934	83°59'56.74452"	21°40'35.08500"
26	189471.323	2400004.742	83°59'57.75900"	21°40'34.70700"
27	189485.615	2399999.016	83°59'58.25940"	21°40'34.53024"
28	189524.123	2399986.507	83°59'59.60616"	21°40'34.14792"
29	189556.667	2399977.776	84°00'00.74304"	21°40'33.88476"
30	189561.429	2399964.282	84°00'00.91728"	21°40'33.44952"
31	189565.134	2399968.515	84°00'01.04328"	21°40'33.58956"
32	189563.282	2399942.057	84°00'00.99684"	21°40'32.72880"
33	189574.394	2399918.774	84°00'01.39860"	21°40'31.97964"
34	189577.040	2399905.544	84°00'01.49940"	21°40'31.55160"
35	189527.827	2399928.563	83°59'59.77392"	21°40'32.26836"
36	189500.840	2399937.030	83°59'58.83036"	21°40'32.52648"
37	189380.507	2399968.251	83°59'54.62772"	21°40'33.46464"
38	189369.924	2399970.579	83°59'54.25836"	21°40'33.53376"
39	189361.669	2399969.733	83°59'53.97216"	21°40'33.50100"
40	189358.282	2399958.303	83°59'53.86200"	21°40'33.12768"
41	189342.725	2399959.154	83°59'53.32092"	21°40'33.14568"
42	189341.182	2399963.491	83°59'53.26440"	21°40'33.28536"
43	189314.907	2399968.746	83°59'52.34784"	21°40'33.43944"
44	189332.003	2400013.626	83°59'52.91160"	21°40'34.90788"
45	189342.988	2400023.792	83°59'53.28636"	21°40'35.24520"
46	189363.589	2400022.464	83°59'54.00312"	21°40'35.21496"
47	189359.700	2400004.080	83°59'53.88036"	21°40'34.61556"
48	189376.621	2400003.425	83°59'54.46896"	21°40'34.60476"
49	189388.680	2400000.310	83°59'54.89016"	21°40'34.51116"
50	189386.010	2399992.804	83°59'54.80232"	21°40'34.26564"
51	189014.827	2400164.922	83°59'41.78760"	21°40'39.62244"
52	189019.427	2400181.161	83°59'41.93664"	21°40'40.15308"
53	189029.292	2400182.897	83°59'42.27828"	21°40'40.21572"
54	189033.646	2400192.790	83°59'42.42300"	21°40'40.53972"
55	189045.554	2400192.593	83°59'42.83700"	21°40'40.54080"
56	189062.518	2400199.880	83°59'43.42128"	21°40'40.78812"
57	189071.284	2400200.600	83°59'43.72548"	21°40'40.81692"
58	189105.084	2400198.231	83°59'44.90160"	21°40'40.76148"
59	189105.134	2400192.669	83°59'44.90736"	21°40'40.58076"
60	189135.963	2400181.943	83°59'45.98592"	21°40'40.25172"
61	189152.668	2400175.735	83°59'46.57056"	21°40'40.06056"
62	189173.690	2400185.247	83°59'47.29452"	21°40'40.38276"
63	189184.376	2400180.862	83°59'47.66892"	21°40'40.24704"
64	189223.294	2400187.563	83°59'49.01676"	21°40'40.48932"
65	189230.656	2400168.065	83°59'49.28568"	21°40'39.86040"
66	189206.843	2400160.921	83°59'48.46308"	21°40'39.61344"
67	189182.237	2400157.746	83°59'47.61024"	21°40'39.49500"

68	189165.856	2400133.388	83°59'47.05728"	21°40'38.69364"
69	189139.805	2400137.575	83°59'46.14900"	21°40'38.81316"
70	189138.604	2400133.914	83°59'46.10976"	21°40'38.69328"
71	189122.335	2400137.722	83°59'45.54204"	21°40'38.80668"
72	189115.604	2400141.690	83°59'45.30552"	21°40'38.93160"
73	189112.653	2400133.860	83°59'45.20796"	21°40'38.67528"
74	189106.594	2400141.509	83°59'44.99232"	21°40'38.92008"
75	189090.429	2400154.845	83°59'44.42172"	21°40'39.34272"
76	189080.200	2400157.359	83°59'44.06460"	21°40'39.41796"
77	189067.145	2400162.101	83°59'43.60776"	21°40'39.56376"
78	189044.917	2400169.317	83°59'42.83052"	21°40'39.78444"
79	189039.050	2400168.220	83°59'42.62712"	21°40'39.74484"
80	189033.485	2400161.287	83°59'42.43848"	21°40'39.51624"
81	189459.140	2400163.329	83°59'57.22908"	21°40'39.85068"
82	189455.073	2400172.420	83°59'57.08148"	21°40'40.14336"
83	189321.577	2400020.652	83°59'52.54440"	21°40'35.12964"
84	189315.314	2400003.543	83°59'52.33848"	21°40'34.57020"

C. SUITABILITY OF IDENTIFIED SITE FOR COMPENSATORY AFFORESTATION.

The identified land has been verified by D.F.O, Sambalpur and the suitability certificate furnished by Divisional Forest Officer, Sambalpur is annexed in ***Annexure-II.***

Topography

The topography of the area is almost plane and slightly undulating. Several patches contain some forest growth and suitable for ANR (with gap plantation of 800 plants per Ha.).

Temperature

The average temperature varies from 9° C minimum in December/ January to 45°C maximum in May.

Rainfall

The annual rainfall varies from 1200 mm to 1500 mm. The maximum rainfall is received during the rainy season from July to September.

CHAPTER- IV

DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION

A. PLANTING PLAN

Planting Plan reflects the species specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be taken up where ever required.

Species to be planted:-

While preparing the planting stock, indigenous species will be selected. The species which are suggested for ANR Gap Plantation are:

1. *Sizyzium cumini* (Jamu)
2. *Adina cardifolia* (Kuruma)
3. *Anogeissus latifolia* (Dhaura)
4. *Accacia catechu* (Khair)
5. Dalbergia latifolia (Pahadi sishoo)
6. *Dalbergia sissoo* (Sissoo)
7. *Azadirrachta indica* (Neem)
8. *Gmelina arborea* (Gambar)
9. *Terminalia belerica* (Bahada)
10. *Terminalia chebula* (Harida)
11. *Pongamia pinnata* (Karanja)
12. *Emblica officinalis* (Amla)

B.PRE-PLANTING OPERATION

B(I)-RAISING OF PLANTATION STOCK- NURSERY-

Nursery will be raised @880 seedlings per ha. including seedlings for 10% causality replacement.

B(II)-SURVEY, DEMARCATION & PILLAR POSTING, GPS READING WITH MAPPING-

The area has to be demarcated and posting of pillar is to be done before taking up plantation activities.

B(III)-SITE PREPARATION AND SILVICULTURAL OPERATION INCLUDING CLEARANCE OF WEED, CLIMBER CUTTING, HIGH STUMP CUTTING, SINGLING OF SHOOTS-

The clearing of the site involving removal of invasive weeds, bushes, climbers, high stumps and singling of shoots will be taken up preferably by the end of February and latest by the end of March. However care should be taken to retain the saplings/seedlings of indigenous tree species which may be available on the planting site. Pits of the dimension 30 x 30 x 30 cm. will be dug @800 per ha. with a spacing of 2.5m x 2.5m, preferably during February to March.

C. PLANTING OPERATION

Planting of seedlings will be taken up during first week of July. But due to some reason or the other if rains are delayed, planting can be taken up during August. Before the seedlings are removed from Nursery, the Poly-pot beds should be flooded, so that, the seedlings after planting can survive for at-least one week in case of drought conditions. The polythene covering of the balls of earth will be carefully removed before planting. Care will be taken to see that the ball of earth is not broken while doing so. The seedling with the ball of earth will then be placed firmly in the pit and buried at such a depth that the root collar is slightly below the surface of the soil. Pesticides and Fertilizers should be applied around the seedling at this stage. The earth close to the collar will be slightly elevated so that rain water does not accumulate very close to the plant.

D. POST PLANTING OPERATION

(1). **CASUALTY REPLACEMENT**

The entire area should be thoroughly verified if any casualty it will be replaced with new seedlings.

(2). **WEEDING AND SOIL WORKING**

1st Weeding after one month/or less of planting depending on the weed growth and soil working is to be done during August to September.

(3). MANURING AND INSECTICIDE APPLICATION

Vermicompost @200 gm per plant and granular insecticides has to be given at the time of planting. Basal dosing NPK @50 gram/per plant is to be given at the time of planting.

70 gram of urea per plant in two doses has to be applied to the plant.

(4). SOIL MOISTURE CONSERVATION MEASURES

The area selected for Compensatory afforestation is fairly plane land. Perculation pits of size 1 mt x 1 mt x 1 mt can be provided. However Special Soil Moisture Conservation Measures will be taken up through construction of LBCD structures in one seasonal stream passing through the identified area. It is proposed to construct 4 nos. of loose boulder Check Dams across the nala to check soil erosion.

Intensive Soil and Moisture Conservation Measures

Since the proposed area of plantation sites received scanty rain, so in order to enhance the moisture in the root zone to the growing plants, apart from the regular soil conservation measure as per P.C.C.F, Odisha norm, intensive SMC structure have been prescribed as below:-

(a) Staggered trenches of dimension 2.5 Mt. x 0.5 Mt. x 0.5 Mt. @60 additional per ha.

(b) Perculation pits of dimension 1 mt. x 1 mt. x 1 mt. @200 nos per ha.

(c) 4 Nos of LBCD of size 10' x 5' x5'

(5). PROTECTION AGAINST FIRE AND GRAZING

Fire line tracing will be ensured to protect the plantation from fire and watch & ward will be provided as per the approved norm to augment protection.

(6). VSS Incentive :

In order to involve the local villagers for protection of forest, the local VSS will encouraged through some incentive.

It is proposed to keep a provision of 5% of Plantation cost for the purpose.

A. FUNDING AGENCY

The user agency i.e. IDCO. Bhubaneswar either directly or through land allottee M/s Shyam Metallic & Energy Ltd. shall provide funds for raising Compensatory Afforestation as per approved scheme against diversion of forest land.

B. EXECUTIVE AGENCY

The Divisional Forest Officer, Sambalpur Forest Division will be assigned with the task for execute the Compensatory Afforestation. Plantation in the identified non-forest land.

Total Cost:- The total cost of the plantation including cost of barbed wire fencing and special SMC is Rs.28,91,863.00 (Rupees Twenty eight lakh, ninety one thousand, eight hundred, sixty three) only.

Divisional Forest Officer
Sambalpur Forest Division

CHAPTER- V

COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION

AIDED NATURAL REGENERATION @800 PLANTS / HA OVER 11.00 HA. (ANR)

ESTIMATE OF COST FOR 1.00 HA. UNDER ANRWITH GAP PLANTATION MODEL

Wage Rate – Rs.280.00/Day

0th year (Advance work) Pre-planting operation.

Sl. No.	Item of work	Person days	Labor rate @280/- (Rs)	Material cost. (Rs)	Total. (Rs)
1	Survey, Demarcation & pillar posting, GPS Reading with mapping	2	560	0	560
2	Site preparation.	2	560	0	560
3	Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots	5	1400	0	1400
4	Raising Nursery @8800seedlings/ ha (Including10% Casualty replacement) and watch & ward (part-1)	22	6160	1470	7630
5	Contingency and Unforeseen Expenditures	0	0	230	230
	Sub Total	**31**	**8680**	**1700**	**10380**
6	Monitoring & Supervision @5%				519
	0th Year Grand Total	**31**	**8680**	**1700**	**10899**
	1st Year/ Planting				
1	Maintenance of Nursery(Balance)	11	3080	230	3310
2	Pitting 30 cm cube size	24	6720	0	6720
3	Carriage and planting including casualty replacement.	20	5600	0	5600
4	Complete weeding, Soil working, Manuring	24	6720	0	6720
5	Cost of Vermi compost and Insecticide for plantation	0	0	3520	3520
6	Cost of Chemical fertiliser	0	0	1296	1296
7	Fire line Tracing and Inspection path.	3	840	0	840
8	Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc.	15	4200	0	4200
9	Soil Conservation Measures	20	5600	0	5600
10	Watch & ward	7	1960	0	1960
11	Contingency and Unforeseen Expenditures	0	0	338	338
	Sub Total	**124**	**34720**	**5384**	**40104**
12	Monitoring & Supervision @5%				2005
	1st Year Grand Total	**124**	**34720**	**5384**	**42109**

	2nd Year Maintenance				
1	Casualty Replacement including cost of seedling, carriage and planting.	4	1120	994.	2114
2	Complete weeding and prunning	8	2240	0	2240
3	Soil working and manuring	8	2240	0	2240
4	Cost of Fertiliser and insecticide	0	0	3232	3232
5	Fire line Tracing and Inspection path.	1	280	0	280
6	Soil Conservation Measures	8	2240	0	2240
7	Watch & ward (whole year)	7	1960	0	1960
8	Contingency and Unforeseen Expenditures	0	0	224	224
	Sub Total	**36**	**10080**	**4450**	**14530**
9	Monitoring & Supervision @5%				727
	2nd Year Grand Total	**36**	**10080**	**4450**	**15257**
	3rd Year Maintenance				
1	Complete weeding and cultural operation	4	1120	0	1120
2	Soil working	4	1120	0	1120
3	Fire line Tracing and Inspection path.	1	280	0	280
4	Watch & ward (whole year)	7	1960	0	1960
	Sub Total	**16**	**4480**	**0**	**4480**
	Monitoring & Supervision @5%				224
	3rd Year Grand Total	**16**	**4480**	**0**	**4704**
	4th Year Maintenance				
1	Fire line Tracing and Inspection path.	1	280	0	280
2	Watch & ward, Cultural operation	2	560	0	560
	Sub Total	**3**	**840**	**0**	**840**
	Monitoring & Supervision @5%		-	-	42
	4th Year Grand Total	**3**	**840**	**0**	**882**
	5th Year Maintenance				
1	Fire line Tracing and Inspection path.	1	280	0	280
2	Watch & ward, Cultural operation	2	560	0	560
	Sub Total	**3**	**840**	**0**	**840**
	Monitoring & Supervision @5%				42
	5th Year Grand Total	**3**	**840**	**0**	**882**
	6th Year Maintenance				
1	Fire line Tracing and Inspection path.	1	280	0	280
2	Watch & ward	2	560	0	560
	Sub Total	**3**	**840**	**0**	**840**
	Monitoring & Supervision @5%				42
	6th Year Grand Total	**3**	**840**	**0**	**882**
	7th Year Maintenance				
1	Fire line Tracing and Inspection path.	1	280	0	280
2	Watch & ward	2	560	0	560
	Sub Total	**3**	**840**	**0**	**840**
	Monitoring & Supervision @5%				42
	7th Year Grand Total	**3**	**840**	**0**	**882**

8th Year Maintenance					
1	Fire line Tracing and Inspection path.	1	280	0	280
2	Watch & ward	2	560	0	560
	Sub Total	**3**	**840**	**0**	**840**
	Monitoring & Supervision @5%				42
	8th Year Grand Total	**3**	**840**	**0**	**882**
9th Year Maintenance					
1	Fire line Tracing and Inspection path.	1	280	0	280
2	Watch & ward	2	560	0	560
	Sub Total	**3**	**840**	**0**	**840**
	Monitoring & Supervision @5%				42
	9th Year Grand Total	**3**	**840**	**0**	**882**
10th Year Maintenance					
1	Fire line Tracing and Inspection path.	1	280	0	280
2	Watch & ward	2	560	0	560
	Sub Total	**3**	**840**	**0**	**840**
	Monitoring & Supervision @5%				42
	10th Year Grand Total	**3**	**840**	**0**	**882**
	GRAND TOTAL	**228**	**63840**	**11534**	**79143**

ABSTRACT

Year	Person days	Labour	Material & Contingencies	Monitoring & Supervision	Total
0th Year	31	8680.00	1700.00	519.00	10899.00
1st Year	124	34720.00	5384.00	2005.00	42109.00
2nd Year	36	10080.00	4450.00	727.00	15257.00
3rd Year	16	4480.00	0	224.00	4704.00
4th Year	3	840.00	0	42.00	882.00
5th Year	3	840.00	0	42.00	882.00
6th Year	3	840.00	0	42.00	882.00
7th Year	3	840.00	0	42.00	882.00
8th Year	3	840.00	0	42.00	882.00
9th Year	3	840.00	0	42.00	882.00
10th Year	3	840.00	0	42.00	882.00
Total	**228**	**63840.00**	**11534.00**	**3769.00**	**79143.00**

For 11 Ha. of ANR =Rs.79,143/- x 11 ha. = Rs.870573.00
(Rupees Eight lakh, seventy thousand, five hundred, seventy three) only.

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Sambalpur Forest Division

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DETAILS OF ITEM-WISE FINANCIAL OUTLAY FOR AFFORESTATION

Sl No	Item of Work	Total Outlay
01	ANR Plantation @800 plants/per ha. over 11 ha. @79.143/- per ha. in Bausen village = Rs.8,70,573/-	8,70,573.00
02	VSS Incentive @5% of plantation cost of Rs.870573/-	43,528.65
03	Special SMC	
(a)	Staggered trench of size 2.0 mt. x 5 mt. x 0.5 mt. @60 nos per ha.=11 ha. x 60 = 660 @61/- per ha.	40,2060.00
(b)	Perculation pits of size 1 Mt. x 1 Mt x 1 Mt @200 Nos per ha.=11 ha. x 200 x 120.40 per pit	2,64,880.00
(c)	4 nos of LBCD of size 10' x 5' x 5' @9334/- each	37,336.00
04	Barbed wire fencing with maintenance over 1750 Mt. @668/- per RMT	11,69,000.00
	Sub-Total	**24,25,577.65.45**
05	Add Escalation cost 20%	4,85,115.53
	Grand Total	**29,10,693.18 or 29,10,693.00**

(Rupees Twenty nine lakhs, ten thousand, six hundred, ninety three) only

Divisional Forest Officer,
Sambalpur Forest Division.

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Sambalpur Forest Division

Annexure

COST NORM FOR BARBED WIRE FENCING

(COST FOR 1000 Mt.)

1. Requirement of 2 ply Barbed Wire (5 Rmt/Kg.)
   7 Strands x 1000 mts = 7000 mt.
   2 Diagonal strands = 2560 mt.
   Total - 9560 mt.
   Total weight - (9560 /5 =) 1912 Kg.
   Cost of Barbed Wire 1912 Kg. @Rs.80/- per Kg = Rs.1,52,960.00
2. RCC Pillars with 2.5 mt spacing:
   No of pillars required - 400 nos.
   Strut pillars at every 10th pillar - 80 nos.
   Total No. of RCC Pillars required - 480
   Cost of RCC Pillars @644/- (480 x Rs.644/- =) - Rs.3,09,120.00
3. Fixing of RCC Pilars - Rs.1,10,978.00
4. Labour for straightening & fixing the Barbed wire
   70 M.d./Km @280/- wage rate - Rs. 19,600.00
5. Carriage of Barbed wire & RCC Pillars (10 truck loads)
   @Rs.800/- per truck load. - Rs. 18,000.00
6. Provision of one Iron Gate : - Rs. 7,500.00
   Total - Rs.6,23,680.00
   Labour Cess @1% Rs. 6,237.00
   Total Cost for 1 Km Barbed Wire Fencing Rs.6,29,917.00
   Or @ Rs.630/- per running mt.
7. Expenditure for three years maintenance @2% per year : Rs.37,795.00
   TOTAL - Rs.6,67,712.00

So expenditure per RMT for fencing = Rs.667.71 or say Rs.668/- RMT

For 1750 Mt. = 1750 x 668 = 11,69,000.00

(Rupees Eleven lakh, sixty nine thousand) only

For 1750 Mt. = 1750 x 675/- = Rs.11,81,250.00

(Rupees Eleven lakh, eighty one thousand, two hundred fifty) only.

Divisional Forest Officer
Sambalpur Forest Division

Divisional Forest Officer
Sambalpur Forest Division

CO-ORDINATES OF C.A.LAND BOUNDARY POINTS

POINT ID	EASTING	NORTHING	LONGITUDE	LATITUDE
1	189487.611	2399899.194	83°59'58.39584"	21°40'31.28916"
2	189354.554	2399925.904	83°59'53.75436"	21°40'32.07288"
3	189148.273	2400014.387	83°59'46.52628"	21°40'34.81716"
4	189004.881	2400126.914	83°59'41.46756"	21°40'38.38188"
5	188995.587	2400201.413	83°59'41.09460"	21°40'40.79568"
6	189087.622	2400225.916	83°59'44.27628"	21°40'41.64960"
7	189159.276	2400243.793	83°59'46.75416"	21°40'42.27528"
8	189394.742	2400307.223	83°59'54.89412"	21°40'44.48388"
9	189445.704	2400327.115	83°59'56.65164"	21°40'45.16212"
10	189529.066	2400293.292	83°59'59.57160"	21°40'44.11596"
11	189561.156	2400278.107	84°00'00.69696"	21°40'43.64292"
12	189542.920	2400227.270	84°00'00.09720"	21°40'41.98008"
13	189535.933	2400219.937	83°59'59.85960"	21°40'41.73744"
14	189516.375	2400207.190	83°59'59.18820"	21°40'41.31120"
15	189514.048	2400203.069	83°59'59.11044"	21°40'41.17584"
16	189489.379	2400201.878	83°59'58.25364"	21°40'41.12148"
17	189480.383	2400197.645	83°59'57.94404"	21°40'40.97856"
18	189474.033	2400196.587	83°59'57.72408"	21°40'40.94004"
19	189453.353	2400186.595	83°59'57.01200"	21°40'40.60272"
20	189450.965	2400118.109	83°59'56.97528"	21°40'38.37648"
21	189437.222	2400077.035	83°59'56.52528"	21°40'37.03368"
22	189438.744	2400048.680	83°59'56.59728"	21°40'36.11388"
23	189420.561	2400044.088	83°59'55.96836"	21°40'35.95332"
24	189426.026	2400021.105	83°59'56.17392"	21°40'35.21028"
25	189442.367	2400016.934	83°59'56.74452"	21°40'35.08500"
26	189471.323	2400004.742	83°59'57.75900"	21°40'34.70700"
27	189485.615	2399999.016	83°59'58.25940"	21°40'34.53024"
28	189524.123	2399986.507	83°59'59.60616"	21°40'34.14792"
29	189556.667	2399977.776	84°00'00.74304"	21°40'33.88476"
30	189561.429	2399964.282	84°00'00.91728"	21°40'33.44952"
31	189565.134	2399968.515	84°00'01.04328"	21°40'33.58956"
32	189563.282	2399942.057	84°00'00.99684"	21°40'32.72880"
33	189574.394	2399918.774	84°00'01.39860"	21°40'31.97964"
34	189577.040	2399905.544	84°00'01.49940"	21°40'31.55160"
35	189527.827	2399928.563	83°59'59.77392"	21°40'32.26836"
36	189500.840	2399937.030	83°59'58.83036"	21°40'32.52648"
37	189380.507	2399968.251	83°59'54.62772"	21°40'33.46464"
38	189369.924	2399970.579	83°59'54.25836"	21°40'33.53376"
39	189361.669	2399969.733	83°59'53.97216"	21°40'33.50100"
40	189358.282	2399958.303	83°59'53.86200"	21°40'33.12768"
41	189342.725	2399959.154	83°59'53.32092"	21°40'33.14568"
42	189341.182	2399963.491	83°59'53.26440"	21°40'33.28536"

Forest Range Officer
Rengali Range

Divisional Forest Officer
Sambalpur Forest Division

CO-ORDINATES OF C.A.LAND BOUNDARY POINTS

POINT ID	EASTING	NORTHING	LONGITUDE	LATITUDE
43	189314.907	2399968.746	83°59'52.34784"	21°40'33.43944"
44	189332.003	2400013.626	83°59'52.91160"	21°40'34.90788"
45	189342.988	2400023.792	83°59'53.28636"	21°40'35.24520"
46	189363.589	2400022.464	83°59'54.00312"	21°40'35.21496"
47	189359.700	2400004.080	83°59'53.88036"	21°40'34.61556"
48	189376.621	2400003.425	83°59'54.46896"	21°40'34.60476"
49	189388.680	2400000.310	83°59'54.89016"	21°40'34.51116"
50	189386.010	2399992.804	83°59'54.80232"	21°40'34.26564"
51	189014.827	2400164.922	83°59'41.78760"	21°40'39.62244"
52	189019.427	2400181.161	83°59'41.93664"	21°40'40.15308"
53	189029.292	2400182.897	83°59'42.27828"	21°40'40.21572"
54	189033.646	2400192.790	83°59'42.42300"	21°40'40.53972"
55	189045.554	2400192.593	83°59'42.83700"	21°40'40.54080"
56	189062.518	2400199.880	83°59'43.42128"	21°40'40.78812"
57	189071.284	2400200.600	83°59'43.72548"	21°40'40.81692"
58	189105.084	2400198.231	83°59'44.90160"	21°40'40.76148"
59	189105.134	2400192.669	83°59'44.90736"	21°40'40.58076"
60	189135.963	2400181.943	83°59'45.98592"	21°40'40.25172"
61	189152.668	2400175.735	83°59'46.57056"	21°40'40.06056"
62	189173.690	2400185.247	83°59'47.29452"	21°40'40.38276"
63	189184.376	2400180.862	83°59'47.66892"	21°40'40.24704"
64	189223.294	2400187.563	83°59'49.01676"	21°40'40.48932"
65	189230.656	2400168.065	83°59'49.28568"	21°40'39.86040"
66	189206.843	2400160.921	83°59'48.46308"	21°40'39.61344"
67	189182.237	2400157.746	83°59'47.61024"	21°40'39.49500"
68	189165.856	2400133.388	83°59'47.05728"	21°40'38.69364"
69	189139.805	2400137.575	83°59'46.14900"	21°40'38.81316"
70	189138.604	2400133.914	83°59'46.10976"	21°40'38.69328"
71	189122.335	2400137.722	83°59'45.54204"	21°40'38.80668"
72	189115.604	2400141.690	83°59'45.30552"	21°40'38.93160"
73	189112.653	2400133.860	83°59'45.20796"	21°40'38.67528"
74	189106.594	2400141.509	83°59'44.99232"	21°40'38.92008"
75	189090.429	2400154.845	83°59'44.42172"	21°40'39.34272"
76	189080.200	2400157.359	83°59'44.06460"	21°40'39.41796"
77	189067.145	2400162.101	83°59'43.60776"	21°40'39.56376"
78	189044.917	2400169.317	83°59'42.83052"	21°40'39.78444"
79	189039.050	2400168.220	83°59'42.62712"	21°40'39.74484"
80	189033.485	2400161.287	83°59'42.43848"	21°40'39.51624"
81	189459.140	2400163.329	83°59'57.22908"	21°40'39.85068"
82	189455.073	2400172.420	83°59'57.08148"	21°40'40.14336"
83	189321.577	2400020.652	83°59'52.54440"	21°40'35.12964"
84	189315.314	2400003.543	83°59'52.33848"	21°40'34.57020"

Forest Range Officer
Rengali Range

Divisional Forest Officer
Sambalpur Forest Division

LAND SUITABILITY CERTIFICATE

This is to Certify that the non-Forest Land (NFL) over an area of 11.007 Ha. identified in Baunsen village of Rengali Tahasil under Rengali Range of Sambalpur forest Division under Sambalpur District are suitable for C.A. plantation in ANR mode.

Dt. 30.05.2019

30/5/19

Forest Range Officer
Rengali Range

Forest Range Officer
Rengali Range

Divisional forest Officer
Sambalpur Forest Division

Divisional Forest Officer
Sambalpur Forest Division