

(FOR DEPARTMENTAL USE ONLY)

GOVERNMENT OF ASSAM
SOIL CONSERVATION DEPARTMENT



STANDARD NORMS
OF
DIFFERENT SOIL CONSERVATION SCHEMES

FOR THE YEAR
2013-2014

PUBLISHED UNDER THE AUTHORITY OF
THE DIRECTOR OF SOIL CONSERVATION, ASSAM
BHUMI SHANGRAKSHAN BHAWAN, R. G. BARUAH ROAD,
GUWAHATI - 5

**GOVERNMENT OF ASSAM
SOIL CONSERVATION DEPARTMENT**

**STANDARD NORMS
OF
DIFFERENT SOIL CONSERVATION SCHEMES**

**FOR THE YEAR
2013-2014**

**PUBLISHED UNDER THE AUTHORITY OF
THE DIRECTOR OF SOIL CONSERVATION, ASSAM
AMARABATY PATH, PANNYAGAR BHAWAN,
CHRISTAN BASTI, GUWAHATI-05**

REVISION OF DEPARTMENTAL NORMS FOR SOIL CONSERVATION WORKS

FOREWORD

The standardized departmental norms for Protective Afforestation, Rubber Plantation, Bamboo Plantation, Cash Crops, Nurseries, Coffee Plantation as well as Engineering Works like Control Bunding, Land Development Works through Earthen Embankment, Land Reclamation works by way of channelisation, Gully Control Works, Stream Bank Protection Works, Bench Terracing Works in hills, Reclamation of hill areas, Reconnaissance Soil Survey Works, Detailed Soil Survey Works in the entire state under Soil Conservation Department, Assam is revised, compiled and published by the Director of Soil Conservation, Assam.

The revised norms deals with different item of works for Afforestation, Cash Crop and various Engineering works and cover all other related items of works normally undertaken under Soil Conservation Department.

The norms have been revised on the basis of APWD (R&B) schedule of rates for the year 2013-14 and APWD (Bld) schedule of rates for the year 2010-11 and consulting the norms of Coffee Board & Rubber Board, Govt of India, ASIDC rates for hexagonal wire, barbed wire etc as well as through rate analysis on the basis of market price etc. Except for the norms for Protective Afforestation, Bamboo Plantation, Cash Crops, Rubber Plantation, Coffee Plantation and Nurseries, individual project report with necessary plan estimates should have to be prepared as per recent APWD schedule of rates.

The Director of Soil Conservation, Assam shall be the final deciding authority as to the meaning, interpretation and implementation of various provisions made in the norms, rates and specifications etc.

Approved by

(R.K. Doley)

Director of Soil Conservation, Assam

&

Chairman of Norms Committee

Committee for Revision of Departmental Norms

Scutinized by

(Sri R.N.Das)

Member secretary, divisional officer (South Bank) & Joint Director of Soil Conservation, (Head Quarter) S.C. Directorate, Guwahati-05

(Sri Arup Rai)

Member
&
Joint Director & divisional Soil Conservation officer, Lower Assam Soil Survey Division Guwahati

(Sri.Monideep Chutia)

Member
Planning Officer (Head Quarter), S.C. Directorate, Guwahati-05

(Sri Anamika Tamuli)

Member
&
Assistant Soil Conservation Officer, S.C. Directorate, Guwahati-05

(Sri C.J.Saikia)

Member
&
Superintendent Assam Soil Conservation Training School Mahur & Divisional Soil Conservation Officer(Engineering),Guwahati-05

(Sri Gautam. Kalita)

Member
&
Soil Conservation Overseer O/O Divisional Officer Soil Conservation Engineering, Guwahati-05

CONTENTS

CHAPTER	PARTICULARS	PAGE NO
A	Protective Afforestation	
B	Rubber Plantation	
C	Bamboo Plantation	
D	Coffee Plantation	
E	Citronella Plantation	
F	Modal Estimate for Construction of Camphut	
G	Various Engineering Works	
H	Soil Survey Works	

(A)

**ABSTRACT OF THE NORMS OF PROTECTIVE AFFORESTATION SCHEME
TOTAL AREA : 1.0 HECTARE
(FOR THE YEAR – 2013-2014)**

1. 1st Year Creation including Preliminary Works

Size of Area with Ground Cover	Barbed wire fencing with live wood fencing posts				Barbed wire fencing with Bholuka bamboo fencing posts				Live fencing			
	Line sowing (Rs)	Thali sowing (Rs)	Stump planting/ planting with naked seedlings (Rs)	Transplanting with poly potted seedling (Rs)	Line sowing (Rs)	Thali sowing (Rs)	Stump planting / planting of naked seedlings (Rs)	Transplanting with poly potted seedlings (Rs)	Line sowing (Rs)	Thali sowing (Rs)	Stump planting / planting of naked seedlings (Rs)	Transplanting with poly potted seedlings (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13
Narrow strip – Jungle area	34041	31958	31958	32718	31222	30918	30918	31678	25423	25119	25119	25879
Narrow strip – Thatch area	30286	29982	29982	30742	29246	28942	28942	29702	233447	23143	23143	23903
Wide strip- Jungle area	24156	23852	23852	24612	23356	23052	23052	23812	23035	22731	22731	23491
Wide strip- Thatch area	22180	21876	21876	22636	21380	21076	21076	21836	21059	20755	20755	21515

Remarks : Norms for 1st year creation excludes the cost of seedlings/stumps / seeds. While preparing the estimate, cost of the planting materials are to be added as per proposed spacing, following the cost of seedlings/stumps/seeds as per norms.

2. **2nd year Maintenance :**
Cost of Maintenance / Hectare

Size of Area	Type of Fencing		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	9884.00	11652.00	12268.00
Wide strip	9770.00	11008.00	11608.00

3. **3rd Year Maintenance :**

Size of Area	Type of Fencing		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	8060.00	11016.00	8794.00
Wide strip	7946.00	10204.00	8464.00

4. **4th Year Maintenance :**

Size of Area	Type of Fencing		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts	Live fencing (Rs)
1	2	3	4
Narrow strip	7300.00	10256.00	8034.00
Wide strip	7186.00	9444.00	7704.00

5. **5th Year Maintenance :**

Size of Area	Type of Fencing		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	5172.00	8128.00	6080.00
Wide strip	5058.00	7316.00	5472.00

6. **6th Year Maintenance :**

Size of Area	Type of Fencing		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	3956.00	6912.00	4864.00
Wide strip	3842.00	6100.00	4256.00

7. 7th Year Maintenance Rs. 3520.00

8. 8th Year Maintenance Rs. 1520.00

9. **Cost of Materials :**

(a) Cost of barbed wire (made of best quality G.I. wire of 12 G x 2 ply x 4 points- 7.5 cm apart packed in coils without bobbin in rolls of 201 Rm including VAT 13.50%, ASIDC Commission 5% and carriage up to work site) Rs. 11,683.00/ Qtl.

(b) Cost of U-staple (made of 10 G good quality galvanized wire of standard size (3,4 &5 cm) including VAT 13.50%, ASIDC Commission 5% and carriage up to work site) Rs. 11,810.00/ Qtl.

(c) Cost of live wood fencing posts (mainly of quick growing species like Jia, Modar, Bot, Simul etc of size 2m long, 20-25 cm girth including carriage) Rs. 38.00/ Post

- | | | |
|------------|--|----------------------|
| (d) | Cost of Bholuka bamboo fencing posts of size 2.0m long, 20-25 mm dia including carriage etc) | Rs. 30.00/Post |
| 10. | Raising of Live fencing | Rs. 33.00/RM. |

NURSERY :

(a) Seedling Nursery in General Bed : Nursery cost for planting, Unit=1.00 hectare area-

- | | | |
|-------|---|--------------|
| (i) | For barbed wire fencing with Live wood fencing posts. | Rs. 5317.00 |
| (ii) | For barbed wire fencing with Bholuka bamboo posts | Rs. 5273.00 |
| (iii) | For Live fencing. | Rs. 4568.00 |
| (iv) | Cost of seedling (using existing water source for irrigation) | Rs. 5.00/ No |
| (v) | Cost of seedling (creating new infrastructure for irrigation) | Rs. 7.00/No |

(b) Seedling Nursery raised in poly pot : Nursery cost for planting -1.0 hectare .

- | | | |
|-------|--|-----------------|
| (i) | With barbed wire fencing & live wood fencing posts | Rs. 12,732.00 |
| (ii) | With barbed wire fencing & bholuka bamboo posts | Rs. 12,688.00 |
| (iii) | With Live fencing | Rs. 11,983.00 |
| (iv) | Cost of poly potted seedling | Rs. 11.00/ Nos. |
| 12. | Cost of collection of seeds like-Sisoo, Khair, Simul, Siris etc (Easily available spp.) | Rs. 178.00/Kg |
| 13. | Cost of poly potted seedlings other than Depatmental Nursery (Medicinal plants like-Moha neem, Amlokhi, Hilikha etc) | Rs. 25.00/No. |

**COST OF PLANTATION FOR – PROTECTIVE AFFORESTATION
(FOR THE YEAR -2013-2014)**

**1ST YEAR CREATION INCLUDING PRELIMINARY WORKS :
TOTAL AREA- 1.00 HECTARE**

1. Cost of barbed wire (made of best quality G.I. wire 12G x 2 ply x 4 points-7.5 cm apart packed in coils without bobbin in rolls of 201 Rm including VAT 13.50% and ASIDC Commission 5% and carriage upto work site)
 - (a) For narrow strip- Requirement of barbed wire
Total = 1.4 Qtl. @ Rs. 11,683.00/Qtl..... Rs. 16,356.20
 - (b) For wide strip- Requirement of barbed wire
Total = 0.85 Qtl. @ Rs. 11,683.00/Qtl..... Rs. 9,930.60

2. Cost of 'U' Staple (made of 10 G good quality galvanized wire of standard size (3,4&5 cm) including VAT 13.50% and ASIDC Commission 5% and carriage upto work site)
 - (a) For narrow strip- 7 Kg @ Rs. 118.10/Kg..... Rs. 826.70
 - (b) For wide strip- 5 Kg @ Rs. 118.10/Kg..... Rs. 590.50

3. (a) Bholuka bamboo fencing posts of size 2.0m length, 20-25 cm dia including carriage etc all complete.
 - (i) **For narrow strip** -130 Nos @ Rs. 30.00/No..... Rs. 3,900.00
 - (ii) **For wide strip**-100 Nos/Ha @ Rs. 30.00/No..... Rs. 3,000.00

3. (b) Collection of live wood fencing post of species- Jia, Modar, Auhat, Bor, Jori, Simul etc from private patta land owners of size 2.0m long, 20-25cm girth including local carriage and stacking etc all complete.
 - (i) **For narrow strip** -130 Nos/Ha @ Rs. 38.00/No..... Rs. 4,940.00
 - (ii) **For wide strip**-100 Nos/Ha @ Rs. 38.00/No..... Rs. 3,800.00

4.	Raising of live fencing by planting Jatropha, vitex etc cutting of 100 to 120 cm long & placed at 15 cm apart centre to centre in between live posts of size 180cm long, 10 to 15 cm dia driven atleast 60cm below ground & 120 cm above ground at 250cm apart tied with Jati bamboo kamies in three rows binding with G.I. wire.	
(i)	For narrow strip -500 RM/Ha @ Rs. 33.00/rm.....	Rs. 16,500.00
(ii)	Fro wide strip-400 rm/Ha @ Rs. 33.00/rm.....	Rs. 13,200.00
5.	Fitting & fixing of barbed wire including erection of fencing posts up to a depth of 45 cm below ground level as directed.	
(i)	For narrow strip -8 DLS/Ha @ Rs. 152.00/unit.....	Rs. 1,216.00
(ii)	Fro wide strip-6 DLS/Ha @ Rs. 152.00/unit	Rs. 912.00
6.	Clearing of jungle including removal of debris out side the area and burning etc all complete as directed.	
(a)	Jungle area- Total -30 DLS/Ha @ Rs. 152.00/unit	Rs. 4,560.00
(b)	Light jungle/Thatch area- Total-17 DLS/Ha @ Rs. 152.00/unit.....	Rs. 2,584.00
7.	Survey, Lining and Stacking- Total person days Total = 5 DLS @ Rs. 152.00/Unit.....	Rs. 760.00
8.	Providing supplying of stakes made of Jati bamboo of 1.0m length Total 1112 Nos @ Rs. 1.60/No.....	Rs. 1,779.20
9.	Seed Sowing :	
(a)	Labour for sowing of seeds in lines including necessary soil working up to a depth of 20cm and width 1.0m. = 12 DLS/Ha @ Rs. 152.00/unit	Rs. 1,824.00
(b)	Labour for sowing of seeds in thalies including necessary soil working up to a depth of 20cm thali size of thali 50cm radius: 10 DLS/Ha @ Rs. 152.00/unit	Rs. 1,520.00
10.	Stump planting including preparation of stumps with local carriage if any- 10 DLS/Ha @ Rs. 152.00/unit	Rs. 1,520.00
11.	Transplanting of poly potted seedlings/ seedlings with ball of earth. Total 15 DLS/Hect @ Rs. 152.00/unit.....	Rs. 2,280.00
12.	Provision of signboard of size 3' x 5' with plain sheet, iron frame & posts including fitting & fixing etc at site. Total 15 sqft. @ Rs. 300.00/sqft.....	Rs. 4,500.00

ABSTRACT

Shape of the plot with Ground Cover	Type of Fencing and Method of Planting											
	Barbed wire fencing with live wood posts				Barbed wise fencing with Bholuka bamboo posts				Live fencing			
	Line sowing (Rs)	Thali sowing (Rs)	Stump planting/ planting with naked seedlings (Rs)	Transplanting with poly potted seedling (Rs)	Line sowing (Rs)	Thali sowing (Rs)	Stump planting / planting of naked seedlings (Rs)	Transplanting with poly potted seedlings (Rs)	Line sowing (Rs)	Thali sowing (Rs)	Stump planting / planting of naked seedlings (Rs)	Transplanting with poly potted seedlings (Rs)
1	2	3	4	5	6	7	8	9	10	11	12	13
Narrow strip – Jungle area	34041	31958	31958	32718	31222	30918	30918	31678	25423	25119	25119	25879
Narrow strip – Thatch area	30286	29982	29982	30742	29246	28942	28942	29702	23447	23143	23143	23903
Wide strip- Jungle area	24156	23852	23852	24612	23356	23052	23052	23812	23035	22731	22731	23491
Wide strip- Thatch area	22180	21876	21876	22636	21380	21076	21076	21836	21059	20755	20755	21515

- Remarks :**
- Block plantation for an area of 5.00 ha on less, detailed estimate for barbed wire fencing may be proposed separately as per departmental norms of fencing materials.
 - Planting materials for raising **afforestation creation** need to be collected from the existing nursery created one year ahead i.e. Nursery Creation- 2012-13.
 - In case of non existance of departmental nursery, provision for purchase of planting materials will be made available in addition to the cost of plantation as per departmental norms.
 - In case of plantation, where mounting of earth is necessary, an additional amount may be made available as per detailed estimate of earth work to be filled in to form the mount by following APWD schedule of rate as per field condition. This provision is specially meant for Soom, Medicinal Plantation to be created in the low-lying areas. Prior Approval is to be obtained form the DSC Assam for raising such plantation.
 - The norms as shown in the abstract is excluding the cost of signboard as mentioned in Item No 12 of 1st year creation. It should only be added after calculating the cost of creation for a particular plot/area within the same financial year.

**Cost of Plantation for Protective Afforestation
(For the Year -2013-2014)**

**2nd Year Maintenance
Total Area : 1.0 Hectare**

1.	1 st weeding including refilling/ resowing- Total 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00	
2.	2 nd weeding including vacancy filling, soil working and mulching Total 12 Dls @ Rs. 152.00/Dl.....	Rs. 1,824.00	
3.	3 rd weeding including mulching - Total 12 Dls @ Rs. 152.00/Dl.....	Rs. 1,824.00	
4.	4 th weeding including mulching - Total 12 Dls @ Rs. 152.00/Dl.....	Rs. 1,824.00	
5.	Fire protection works including payment of wages to the fire watcher. Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00	
6. (a)	Repairing of barbed wire fencing with live posts including replacement of damaged fencing posts assuming 10% replacement.		
(i)	Narrow strip : live fencing posts = 13 Nos @ Rs. 38.00/post.....	Rs. 494.00	
	U-Staple L.S. 1.0 Kg @ Rs. 118.10/Kg.....	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl.....	Rs. 304.00	
	<u>Total</u>	Rs. 916.10	
	Say	Rs. 916.00	Rs. 916.00
(ii)	Wide strip : live fencing posts Total = 10 Nos @ Rs. 38.00/post.....	Rs. 380.00	
	U-Staple L.S. 1.0 Kg @ Rs. 118.10/Kg.....	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl.....	Rs. 304.00	
	<u>Total</u>	Rs. 802.10	
	Say	Rs. 802.00	Rs. 802.00
6. (b)	Repairing of barbed wire fencing with bholuka bamboo posts including replacement of damaged fencing posts assuming 50% replacement.		
(i)	Narrow strip : Bholuka bamboo posts Total = 65 Nos @ Rs. 30.00/No.....	Rs. 1,950.00	
	U-Staple L.S. 3.0 Kg @ Rs. 118.10/Kg.....	Rs. 354.30	
	Labour 2.5 Dls @ Rs. 152.00/Dl.....	Rs. 380.00	
	<u>Total</u>	Rs. 2684.30	
	Say	Rs. 2684.00	Rs. 2684.00
(ii)	Wide strip : Bholuka bamboo fencing posts Total = 50 Nos @ Rs. 30.00/each.....	Rs. 1,500.00	
	U-Staple L.S. 2.0 Kg @ Rs. 118.10/Kg.....	Rs. 236.20	

Labour 2 Dls @ Rs. 152.00/Unit..... Rs. 304.00
 Total Rs. 2040.20
 Say Rs. 2040.00 Rs. 2040.00

- 6 (c) Repairing of live fencing including damaged live posts, pruning of cuttings of Jatropha/ Vitex/ Ipomea etc as directed assuming 20% damage.
- (i) Narrow strip : 20% of 500 rm = 100 rm
 @ Rs. 33.00/rm..... Rs. 3,300.00
- (ii) Wide strip : 20% of 400 rm = 80 rm
 @ Rs. 33.00/rm..... Rs. 2,640.00

Abstract for 2nd Year Maintenance
Total Area = 1.0 Hectare

Shape of Plot of Plantation	Type of Fencing		
	Barbed wire fencing with Live wood posts (Rs)	Barbed wire fencing with Bholuka bamboo posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	9,884.00	11,652.00	12,268.00
Wide strip	9,770.00	11,008.00	11,608.00

Cost of Plantation for Protective Afforestation for 2013-2014
Total Area = 1.0 Hectare

3rd Year Maintenance

1.	1 st weeding & vacancy filling, Total 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00	
2.	2 nd weeding, weeding & vacancy filling, soil working & mulching Total 12 Dls @ Rs. 152.00/Dl.....	Rs. 1,824.00	
3.	3 rd weeding, soil working & mulching Total 12 Dls/Hect @ Rs. 152.00/Dl.....	Rs. 1,824.00	
4 (a)	Repairing of barbed wire fencing with live posts assuming 10% replacement of damaged posts.		
(i)	Narrow strip : live fencing posts Total = 13 Nos @ Rs. 38.00/No.....	Rs. 494.00	
	U-Staple L.S. 1.0 Kg @ Rs. 118.10/Kg.....	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl.....	Rs. 304.00	
	Total	Rs. 916.10	
	Say	Rs. 916.00	Rs. 916.00
(ii)	Wide strip : live fencing posts Total = 10 Nos @ Rs. 38.00/No.....	Rs. 380.00	
	U-Staple L.S. 1.0 Kg @ Rs. 118.10/Kg.....	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl.....	Rs. 304.00	
	Total	Rs. 802.10	
	Say	Rs. 802.00	Rs. 802.00
4(b)	Repairing of barbed wire fencing with Bholuka bamboo posts including replacement of damaged fencing posts assuming 75% replacement.		
(i)	Narrow strip : Bholuka bamboo fencing posts Total = 97 Nos @ Rs. 30.00/each.....	Rs. 2,910.00	
	U-Staple L.S. 3.0 Kg @ Rs. 118.10/Kg.....	Rs. 354.30	
	Labour 4 Dls @ Rs. 152.00/Dl.....	Rs. 608.00	
	Total	Rs. 3,872.30	
	Say	Rs. 3,872.00	Rs. 3,872.00
(ii)	Wide strip : Bholuka bamboo fencing posts Total = 75 Nos @ Rs. 30.00/each.....	Rs. 2250.00	
	U-Staple L.S. 3.0 Kg @ Rs. 118.10/Kg.....	Rs. 354.30	
	Labour 3 Dls @ Rs. 152.00/Dl.....	Rs. 456.00	
	Total	Rs. 3060.30	
	Say	Rs. 3060.00	Rs. 3060.00
4(c)	Repairing of live fencing including change of damaged live posts, and bamboo kamies etc all complete as directed assuming 10% damage.		
(i)	Narrow strip : 10% of 500 rm = 50 rm		

- (ii) @ Rs. 33.00/rm..... Rs. 1,650.00
 Wide strip : 10% of 400 rm = 40 rm
 @ Rs. 33.00/rm..... Rs. 1,320.00
5. Fire protection works including payment of wages to the fire watcher.
 Total 8 Dls @ Rs. 152.00/Dl..... Rs. 1216.00

Abstract for 3rd Year Maintenance
Total Area = 1.0 Hectare

Shape of Plot of Plantation area	Type of Fencing		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	8060.00	11016.00	8794.00
Wide strip	7946.00	10204.00	8464.00

Cost of Plantation for Protective Afforestation
Total Area = 1.0 Hectare (For 2013-2014)

4th Year Maintenance

- 1.(a) 1st weeding & refilling if necessary
 Total 14 Dls @ Rs. 152.00/Unit..... Rs. 2,128.00
- (b) 2nd weeding, soil working & mulching
 Total 12 Dls @ Rs. 152.00/Unit..... Rs. 1,824.00
- (c) 3rd weeding, soil working & mulching
 Total 8 Dls @ Rs. 152.00/Unit..... Rs. 1,216.00

2 (a) Repairing of barbed wire fencing with live posts including replacement of damaged fencing posts assuming 10% replacement.

(i) **Narrow strip** : live fencing posts

Total = 13 Nos @ Rs. 38.00/No.....	Rs. 494.00	
U-Staple L.S. 1.0 Kg @ Rs.118.10/Kg.....	Rs. 118.10	
Labour 2 Dls @ Rs. 152.00/Unit.....	Rs. 304.00	
	<u>Total</u>	Rs. 916.10
	Say	Rs. 916.00 Rs. 916.00

(ii) **Wide strip** : live fencing posts

Total = 10 Nos @ Rs. 38.00/No.....	Rs. 380.00	
U-Staple L.S. 1.0 Kg @ Rs. 118.10/Kg.....	Rs. 118.10	
Labour 2 Dls @ Rs. 152.00/Unit.....	Rs. 304.00	
	<u>Total</u>	Rs. 802.10
	Say	Rs. 802.00 Rs. 802.00

2 (b) Repairing of barbed wire fencing with Bholuka bamboo fencing posts including replacement of posts assuming 75% replacement.

(i) **Narrow strip** : Bholuka bamboo fencing posts

Total = 97 Nos @ Rs. 30.00/No.....	Rs. 2,910.00	
U-Staple L.S. 3.0 Kg @ Rs. 118.10/Kg.....	Rs. 354.00	
Labour 4 Dls @ Rs. 152.00/Dl.....	Rs. 608.00	
	<u>Total</u>	Rs. 3,872.30
	Say	Rs. 3,872.00 Rs. 3,872.00

(ii) **Wide strip** : Bholuka bamboo fencing posts

Total = 75 Nos @ Rs. 30.00/each.....	Rs. 2,250.00	
U-Staple L.S. 3.0 Kg @ Rs. 118.10/Kg.....	Rs. 354.30	
Labour 3 Dls @ Rs. 152.00/Dl.....	Rs. 456.00	
	<u>Total</u>	Rs. 3060.30
	Say	Rs. 3060.00 Rs. 3060.00

2(c) Repairing of live fencing including cutting of excessive branches etc (10% of total fencing)

(i) Narrow strip : 10% of 500 rm = 50 rm

@ Rs. 33.00/rm.....	Rs. 1,650.00
---------------------	--------------

(ii) Wide strip : 10% of 400 rm = 40 rm

@ Rs. 33.00/rm..... Rs. 1,320.00

3. Fire protection works including wages to the fire watcher.
Total 8 Dls @ Rs. 152.00/Unit..... Rs. 1,216.00

Abstract for 4th Year Maintenance
Total Area = 1.0 Hectare

Shape of Plot of Plantation area	Type of Fencing		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	7300.00	10256.00	8034.00
Wide strip	7186.00	9444.00	7704.00

Cost of Plantation for Protective Afforestation
Total Area = 1.0 Hectare (For 2013-2014)

5th Year Maintenance

1. (a) 1st weeding- Total 12 Dls @ Rs. 152.00/Unit..... Rs. 1,824.00
(b) 2nd weeding- Total 8 Dls @ Rs. 152.00/Unit..... Rs. 1,216.00

2. (a) Repairing of barbed wire fencing including replacement of live fencing posts where necessary (assuming 10% replacement)
- (i) Narrow strip : live fencing posts
 Total = 13 Nos @ Rs. 38.00/No..... Rs. 494.00
 U-Staple L.S. 1.0 Kg @ Rs. 118.10/Kg..... Rs. 118.10
 Labour 2 Dls @ Rs. 152.00/Dl..... Rs. 304.00
Total Rs. 916.10
 Say Rs. 916.00 Rs. 916.00
- (ii) Wide strip : live fencing posts
 Total = 10 Nos @ Rs. 38.00/No..... Rs. 380.00
 U-Staple L.S. 1.0 Kg @ Rs. 118.10/Kg..... Rs. 118.10
 Labour 2 Dls @ Rs. 152.00/Unit..... Rs. 304.00
Total Rs. 802.10
 Say Rs. 802.00 Rs. 802.00
- 2 (b) Repairing of barbed wire fencing including replacement of damaged Bholuka bamboo fencing posts where necessary (Assuming 75% replacement).
- (i) Narrow strip : Bholuka bamboo fencing posts
 Total = 97 Nos @ Rs. 30.00/No..... Rs. 2,910.00
 U-Staple L.S. 3.0 Kg @ Rs. 118.10/Kg..... Rs. 354.30
 Labour 4 Dls @ Rs. 152.00/Dl..... Rs. 608.00
Total Rs. 3,872.30
 Say Rs. 3,872.00 Rs. 3,872.00
- (ii) Wide strip : Bholuka bamboo fencing posts
 Total = 75 Nos @ Rs. 30.00/No..... Rs. 2,250.00
 U-Staple L.S. 3.0 Kg @ Rs. 118.10/Kg..... Rs. 354.30
 Labour 3 Dls @ Rs. 152.00/Dl..... Rs. 456.00
Total Rs. 3060.30
 Say Rs. 3060.00 Rs. 3060.00
- 2(c) Repairing of live fencing including cutting away unwanted overgrown branches and stems etc.
- (i) Narrow strip-
 Total 12 Dls @ Rs. 152.00/Unit..... Rs. 1,824.00
- (ii) Wide strip-
 Total 8 Dls @ Rs. 152.00/Unit..... Rs. 1,216.00
3. Fire protection works including wages to the fire watcher.
 Total 8 Dls @ Rs. 152.00/Unit..... Rs. 1,216.00

Abstract for 5th Year Maintenance
Total Area = 1.0 Hectare

Shape of Plot of Afforestation area	Cost according to Type of Fencing		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	5172.00	8128.00	6080.00

Wide strip	5058.00	7316.00	5472.00
------------	---------	---------	---------

**Cost of Plantation for Protective Afforestation
Total Area = 1.0 Hectare (For 2013-2014)**

6th Year Maintenance

1.	Weeding -12 Dls/Hect @ Rs. 152.00/Unit.....		Rs. 1,824.00
2.	Fencing repairing –		
(a)	Barbed wire fencing with live fencing posts (assuming 10% replacement of damaged fencing posts).		
(i)	Narrow strip- Live posts-		
	Total = 13 Nos @ Rs. 38.00/No.....	Rs. 494.00	
	U-staple –L.S. 1.0 Kg @ Rs. 118.10/Kg	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Unit.....	Rs. 304.00	
		<hr/>	
	Total	Rs. 916.10	
	Say	Rs. 916.00	Rs. 916.00
(ii)	Wide strip- Live posts-		
	Total = 10 Nos @ Rs. 38.00/No.....	Rs. 380.00	
	U-staple –L.S. 1.0 Kg @ Rs. 118.10/Kg	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl.....	Rs. 304.00	
		<hr/>	
	Total	Rs. 802.10	
	Say	Rs. 802.00	Rs. 802.00
2 (b)	Repairing of barbed wire fencing including replacement of damaged Bholuka bamboo fencing posts where necessary (Assuming 75% replacement).		
(i)	Narrow strip : Bholuka bamboo fencing posts		
	Total = 97 Nos @ Rs. 30.00/No.....	Rs. 2910.00	
	U-Staple L.S. 3.0 Kg @ Rs. 118.10/Kg.....	Rs. 354.30	
	Labour 4 Dls @ Rs. 152.00/Dl.....	Rs. 608.00	
		<hr/>	
	Total	Rs. 3872.30	
	Say	Rs. 3872.00	Rs. 3,872.00
(ii)	Wide strip : Bholuka bamboo fencing posts		
	Total = 75 Nos @ Rs. 30.00/No.....	Rs. 2250.00	
	U-Staple L.S. 3.0 Kg @ Rs.118.10/Kg.....	Rs. 354.30	
	Labour 3 Dls @ Rs. 152.00/Dl.....	Rs. 456.00	
		<hr/>	
	Total	Rs. 3060.30	
	Say	Rs. 3060.00	Rs. 3060.00
2(c)	Maintenance of Live Fencing Posts live post, pruning/ cutting of jathropa/vitex/ Ipomea etc		
(i)	Narrow strip-		
	Total 12 Dls @ Rs. 152.00/Unit.....		Rs. 1,824.00
(ii)	Wide strip-		

Total 8 Dls @ Rs. 152.00/Unit..... Rs. 1,216.00

3. Fire protection works including wages to the fire watcher.

Total 8 Dls @ Rs. 152.00/Unit..... Rs. 1,216.00

Abstract for 6th Year Maintenance
Total Area = 1.0 Hectare

Shape of Plot of Afforestation area	Type of Fencing with Cost		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo posts (Rs)	Live fencing (Rs)
1	2	3	4
Narrow strip	3956.00	6912.00	4864.00
Wide strip	3842.00	6100.00	4256.00

Cost of Plantation for Protective Afforestation
Total Area = 1.0 Hectare (For 2013-2014)

7th Year onwards Maintenance

(a)	7 th Year Maintenance :	
1.	Climber cutting, fire line opening, wages of fire watcher etc.	
	Total - 10 Dls @ Rs. 152.00/Dl.....	Rs. 1,520.00
2.	Maintenance of Signboard L.S Rs. 2000.00.....	Rs. 2,000.00
		<u>Rs. 3,520.00</u>

Cost of plantation for protective afforestation :
For the year 2013-14 :
8th year maintenance (unit = 1.00 hect)

(b)	From 8 th year onwards up to 11 th Year	
1.	Climber cutting, fire line opening, maintenance of inspection path etc.	
	Total - 10 Dls @ Rs. 152.00/Unit.....	Rs. 1,520.00

**Cost for Creation of Nursery
(Creation of a Nursery for Planting of 10.0 Hectare Area)**

1. Seedling Nursery

- | | | |
|-----|-------------------------------------|--|
| (a) | Requirement of seedlings/stumps | = $\frac{(10,000 \times 10)}{3 \times 3} + 1 \text{ No} + 20\% \text{ Extra}$
= (11,112 + 2222) Nos
= 13,334 Nos |
| (b) | No of standard bed of size 10m x 1m | = 10M x 1M = 50 Nos |
| (c) | Total area for the Nursery | = 33m x 21m = 693 sqm. |
| (d) | Perimeter of the Nursery | = (33 x 2 + 21 x 2) rm
= 108 rm. |

Detailed Estimate :

- | | | |
|-------|---|--------------|
| 1. | Requirement / cost of barbed wire (made of best quality G.I. wire 12 G x 2 ply x 4 points- 7.5 cm apart in coils without bobbin in rolls of 201m including 13.50% VAT and 5% ASIDC Commission).
Total 540 Rm = 68 Kg @ Rs. 116.83/Kg..... | Rs. 7,944.44 |
| 2. | Requirement and cost of U-staple made of good quality 10G galvanized wire of size 3,4&5 cm.
Total 3.5 Kg (@ 5 Kg for 1.0 Qtl. of barbed wire) @ Rs. 118.10/Kg..... | Rs. 413.35 |
| 3.(a) | Cost of live fencing posts of size 2.0m long & 20-25 cm girth including local carriage to worksite.
Total No of fencing posts = 55 Nos
@ Rs. 38.00/No..... | Rs. 2,090.00 |
| 3.(b) | Cost of Bholuka bamboo fencing post of size 55 to 100 mm dia & 2.0m long including local carriage to the worksite.
Total = 55 Nos @ Rs. 30.00/ No..... | Rs. 1,650.00 |
| 4. | Fitting and fixing of barbed wire including erection of fencing posts atleast 45 cm below ground level and 2.0m apart.
Total= 4 Dls @ Rs. 152.00/Dl..... | Rs. 608.00 |
| 5. | Raising live fencing by planting Jatropha/Vitex/Ipomea cutting of 100 to 120 cm long, placed at 15 cm apart (Centre to Centre) in between live posts of size 180 Cm long, 10 to 15 cm dia driven at least 60 cm below ground & 120 cm above ground at 250 cm apart tied with Jati bamboo kamies in three rows binding with G.I. wire.
Total = 108 rm @ Rs. 33.00/rm..... | Rs. 3,564.00 |

6. Clearance of jungle including uprooting of stumps, removal of all debris out side the area as directed.
Total = 3 Dls @ Rs. 152.00/Dl..... Rs. 456.00
7. Soil working, leveling, preparation of beds including application of well decomposed cowdung.
Total = 50 beds- 50 Dls @ Rs. 152.00/Dl..... Rs. 7,600.00
8. Providing supplying of well decomposed cowdung 1 truck load (including loading and unloading)
L.S. Rs. 6000.00/truck (5.00 CuM)..... Rs. 6,000.00
9. Collection of seeds including carriage & treatment.
Total= 100 Dls @ Rs. 152.00/Unit..... Rs. 15,200.00
10. Seed sowing in the nursery beds including watering etc.
Total = 5 Dls @ Rs. 152.00/Dl..... Rs. 760.00
11. Maintenance of 50 Nos of beds i.e. weeding, regular watering & application of pesticides if necessary.
Total = 75 Dls @ Rs. 152.00/Dl..... Rs. 11,400.00
12. Cost of Pesticides L.S. Rs. 700.00..... Rs. 700.00

ABSTRACT

Particulars of Item	Cost of creation of seedling nursery raised on general bed for planting 10.00 H area as per types of fencing		
	Barbed wire fencing with Live fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo posts (Rs)	Live fencing (Rs)
Total cost for production of seedlings to raise 10 H plantation area	53,172.00	52,732.00	45,680.00
Nursery cost for planting 1.0 H area	5,317.00	5,273.0	4,568.00
Cost / Seedling	5.00 (using existing water source) 7.00 (creating new infrastructure for water supply)	5.00 (using existing water source) 7.00 (creating new infrastructure for irrigation)	5.00 (using existing water source) 7.00 (creating new infrastructure for irrigation facility)

- Remarks :**
1. In case of non-availability of existing water source, for creation of infrastructure like-shallow tube well, kacha ring well- a provision for Rs. 20,000/- may be made available for which the seedling cost will be Rs. 7.00/per No.
 2. Nursery to be created one year ahead of Afforestation creation.
 3. In case of temporary nursery for 2 years or less, no live fencing is to be erected.

2. Seed collection for direct sowing in lines / thalies of Protective Afforestation Scheme.

(a)	Total area to be sown	= 10.00 Hectare	
(b)	Requirement of seeds for 10.0 H area	= 110.00 Kg	
(c)	Requirement of seeds for 1.0 H area	= 11.00 Kg.	
1.	Collection of seeds of Sissoo, Khoira, Simul, Koroi, Moj etc from matured sound trees, free from any defect like excessive branches, buttresses etc.		
	Total = 100 Dls @ Rs. 152.00/Dl.....		Rs. 15,200.00
2.	Cleaning of seeds from pods, drying including mixing of pesticides/insecticides etc. all complete.		
	Total = 25 Dls @ Rs. 152.00/Dl.....		Rs. 3,800.00
3.	Cost of pesticides/insecticides L.S.		Rs. 250.00
4.	Cost of Gunny bags = 2 Nos @ Rs. 35.00/ No.....		Rs. 70.00
5.	Carriage L.S. Cost.....		Rs. 250.00
(i)	Cost of seeds for 10.0 H area	Total	Rs. 19,570.00
(ii)	Cost of seeds for 1.0 H area (for 11.00 Kg).....		Rs. 19,570.00
(iii)	Cost of 1 Kg of seeds	= Rs. <u>1,957.00</u>	
		11	
		= Rs. 177.91	
	Say	= Rs. 178.00	

3. Poly Potted Nursery : (For planting of 10.0 H Area)

- (a) Requirement of seedlings (spacing 3m x 3m) = 11,112 + 5% Extra for refilling = 11,667 Nos.
- (b) Requirement of bed of standard size 10m x 1m (including germination bed)= 50 Nos.
- (c) Total area of nursery = 33m x 21m = 693 Sqm.
- (d) Perimeter = 108 Rm.

Detailed Estimate :

1.	Requirement of barbed wire of best quality G.I. wire 12 G x 2 ply x 4 points-7.5 cm apart in coils without bobbin in rolls of 201m including 13.50 and ASIDC Commission5% and carriage upto work site.		
	Total (108 x 5) = 540 Rm = 68 Kg @ Rs. 116.83/Kg.....		Rs. 7,944.44
2.	Requirement of U-staple made of good quality 10 G galvanized wire of standard size (3,4 & 5 cm including VAT 13.50% & ASIDC commission 5% and carriage upto work site).		
	Total 3.5 Kg (@ Rs. 5 Kg for 100.00 kg of barbed wire) @ Rs. 118.10/Kg.....		Rs. 413.35
3.(a)	Requirement of fencing posts (live post) of size-length 2m, girth 20-25 cm including local carriage to the work site.		
	Total = 55 Nos @ Rs. 38.00/ No.....		Rs. 2,090.00

3(b)	Requirement & cost of Bholuka bamboo fencing post of size- length 2m, dia 22 to 25 cm including local carriage to the work site. Total = 55 Nos @ Rs. 30.00/ No.....	Rs. 1,650.00
4.	Fitting & fixing of barbed wire including erection of fencing posts as directed. Total = 4 Dls @ Rs. 152.00/Dl.....	Rs. 608.00
5.	Raising live fencing by planting of Jatropha/Vitex/ Ipomea cutting of 100 to 120 cm long, placed at 15 cm apart (centre to centre) in between live posts of size-180 cm long, 10 to 15 cm dia driven at least 60cm below ground & 120 cm above ground at 250cm apart tied with Jati bamboo kamies in 3 rows binding with G.I. wire. Total = 108 rm @ Rs. 33.00/rm.....	Rs. 3,564.00
6.	Clearing of jungle including uprooting and removal of all debries out side the area. Total = 3 Dls @ Rs. 152.00/Dl.....	Rs. 456.00
7.	Soil working, leveling, preparation of mother beds including application of well decomposed cowdung. Total = 5 Dls (for 5 mother beds) @ Rs. 152.00/Dl...	Rs. 760.00
8.	Seed sowing in mother beds including necessary Treatment. Total = 2 Dls @ Rs. 152.00/Dl.....	Rs. 304.00
9.	Providing supplying of well decomposed cowdung, manure for mother beds as well as secondary beds including loading and unloading. Total = 2 trucks @ Rs. 6,000.00/truck.....	Rs. 12,000.00
10.	Collection and carrying of topsoil / good earth for filling in poly bags. Total = 25 Dls @ Rs. 152.00/Dl.....	Rs. 3,800.00
11.	Collection of seeds including carriage up to the nursery site. Total = 100 Dls @ Rs. 152.00/Dl...	Rs. 15,200.00
12.	Cost of Poly bags = 25.00 Kg @ Rs. 250.00/Kg.....	Rs. 6,250.00
13.	Preparation & treatment of top soil mixing with well decomposed cowdung including filling in poly bags. Total = 100 Dls @ Rs. 152.00/Dl.....	Rs. 15,200.00
14.(i)	Preparation of secondary beds including fitting, fixing of half bamboos for placement of poly bags. Total = 8 Dls @ Rs. 152.00/unit.....	Rs. 1,216.00

- 14.(ii) Labour for providing shade over nursery beds.
 Total = 8 Dls @ Rs. 152.00/unit Rs.1,216.00
 Providing supplying of bamboos & thatching grass
 for provision of shade over secondary bed
- (15) Providing supplying of bamboo & thaching grass for
 Provision of shade over secondary beds .
- (i) For shade – 120 Nos Jati Bamboo Nos @ Rs.60.00/No..... Rs.7,200.00
 (ii) For shade – 120 Nos Jati Bamboo Nos @ Rs.60.00/No..... Rs.7,200.00
 (iii) Thaching grass=2000Blds.@ Rs.4000/ 1000 bundles.....Rs.8,000.00
16. Transplanting of germinated seedlings to poly
 bags including necessary watering.
 Total = 30 Dls @ Rs. 152.00/Units..... Rs,4,560.00
17. Weeding, temporary shifting of poly bags and watering.
 Total = 75 Dls @ Rs. 152.00/units..... Rs.11400.00
18. Tools, inputs & pesticides L.S. Cost1,500.00..... Rs. 1,500.00
19. Creation of infrastructure like- tube well as source
 of water for irrigation in the nursery.
 L.S. Cost Rs20,000.00..... Rs. 20,000.00

ABSTRACT

Particulars of Item	Cost of creation for raising poly potted nursery for planting 10.0 H area as per different types of fencing (No of seedlings to produce 11,677 Rm)		
	Barbed wire fencing with Live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo posts (Rs)	Live fencing (Rs)
Total cost	1,27,318.00	1,26,878.00	1,19,826.00
Cost per Hectare	12,732.00	12,688.00	11,983.00
Cost for one No of poly potted seedling	11.00	11.00	11.00

- Note :
1. The cost of one no poly potted seedling is also applicable for seedling line soom, coffee, medicinal plant etc.
 2. In respect of the species where shade is not required, the item No. 14 (i) & 15 (ii) & (iii) may be curtailed.
 3. Nursery is to be created one year ahead of afforestation creation.

- (a) **Rate analysis for 1.0 Qtl. of barbed wire** (As per revised price of wire netting)
Code No & detail specification of item (AIDS):- **1)WWMB/07:-**
Barbed wire made of best quality G.I. wire of size & specification(12G x ply x 4
barbs 2 7.50 Cm apart in coils without boddbins in rolls of 201 RM including VAT
13.50 % and ASIDC Commission 5%)
- a) Barbed wire cost/quintal (As per **Annexure-1**).....Rs.7,568.00
25% Raise due to price escalation @5% per Yr (+) ..Rs.1,892.00
Total cost of barbed wire (Ex.VAT+Comm)= Rs.9,460.00.....Rs.9,460.00
- b). + VAT 13.50% on Rs. 9,562.50..... Rs 473.00
- c). + ASIDC Commission 5% on Rs. 9,460.00..... Rs. 473.00
- d). + Cost of carriage of barbed @ LS 5% on Rs.9,460.00.....Rs. 473.00
- GRAND TOTAL COST OF BARBED WIRE/Qntl.(Inc.VAT+Comm Rs.11,683.10**
(say), Rs,11,683.00.....11,683.00

U STAPLE:-

- Code No & detail specification of item (ASIDC):- **1)WWWMB/028:-**
U-staple made of 10 G good quality galvanized wire of standard size (3,4 & cm
including VAT 13.50% and ASIDC Commission 5%)
- a. U-staple cost (As per As per Annexure-1) = Rs,7,650.00
25% Raise due to price escalation (+) = Rs.1,912.50
Total cost of U staple (Ex.VAT+ Comm) RS.9,562.50 Rs. 9,562.50
- b. VAT 13.50% on Rs. 9,562.50..... Rs. 303.92
- c. ASIDC Commission 5% on Rs. 9,562.50=..... Rs. 478.13
- d. + Cost of carriage of barbed @ LS 5% on Rs.9,562.50 =.....Rs. 478.13
- GRAND TOTAL COST OF U-STAPLE(Inc.VAT+Comm).....RS.11,809.70**
Say Rs. 11,809.70

ANNEXURE-1

ABERAGE RATE OF BARBED WIRE & U-STAPLE AS PER ASIDC DISTRICT WISE RATE OF JULY 2008

BARBED WIRE			U-STAPLE		
SL NO	DISTIRCT	COST/QNTL (Rs.P)	SL NO	DISTRICT	COST/QNTL (Rs.P)
01	02	03	01	02	03
1	Karimganj, Nalbari, Morigaon, Mangaldoi	7516.00	1	Karimganj, Nalbari, Morigaon, Mangaldoi	7598.00
2	Nowgoan,Barpeta, Goalpara	7527.00	2	Nowgoan,Barpeta, Goalpara	7609
3	Bogaigoan,Sunitpur	7536.00	3	Bogaigoan,Sunitpur	7618.00
4	Kokrajhar,Dhubri	7546.00	4	Kokrajhar,Dhubri	7628.00
5	North Lakhimpur, Jorhat, Diphu, Golaghat	7566.00	5	North Lakhimpur, Jorhat, Diphu,	7648

				Golaghat	
6	Tinsukia, Dibrugarh, Sibsagar, Dhemaji	7583.00	6	Tinsukia, Dibrugarh, Sibsagar, Dhemaji	7665.00
7	Karimganj, Hailakandi, Majuli	7605.00	7	Karimganj, Hailakandi, Majuli	7687.00
8	Silchar, Dima Hasao	7611.00	8	Silchar, Dima Hasao	7693.00
9	Sadia	7622.00	9	Sadia	7704.00
	TOTAL Rs.	68,112.00		TOTAL Rs	68,850.00
	Average Barbed wire Rate/ Qntl	7,568.00		Average Barbed wire Rate/ Qntl	7,650.00

**RATE ANALYSIS FOR BHOLUKA BAMBOO FENCING POST LOADING & UNLOADING OF 2.00M LONG
(FOR 40 NOS) As per local market)**

1) Collection of live post (Jia, Modar, Bor, Jori Simul etc) from private patta land of size 2.00 M length, 20-25cm girth including local carriage & stacking etc all completed

Total = 33 DLS @ Rs. 152.00/Unit..... = Rs. 5016.00

2) Transportation upto work site including loading & unloading with a distance of 30-50Km

Total = 1 truck load (250 Nos) @ Rs. 4,000.00/truck load..... = Rs 4,500.00
Total Rs. 9,516.00 =Rs. 9,516.00

Therefore, cost of 1(one) No live post = $\frac{9516.00}{250.00}$
Rs. 38.06
(say), Rs. 38.00/post

(e) Rate Analysis for Raising Live Fencing (for 10.0 Rm)

Specification :

Planting of Jatropha/Vitex/Ipomea cuttings of 100 to 120 cm long & placed at 15 cm apart (centre to centre) in between liveposts of size 180 cm long, 10 to 15cm dia driven at least 60cm below ground & 120 cm above ground at 250cm apart tied with Jati bamboo kamies in three rows binding with G.I. wire ropes.

- | | | |
|----|---|------------|
| 1. | Live fencing post as per specification.
Total 5 Nos @ Rs. 27.00/No..... | Rs. 135.00 |
| 2. | Collection of Jatropha/Vitex/Ipomea cuttings
as per specification including local carriage etc.
Total = 67 Nos @ Rs. 0.50/No..... | Rs. 33.50 |

3.	Jati bamboo of size 50mm to 85mm dia and 6.0m long. Total 1 No @ Rs. 33.00 + 20% extra on APWD schedule (Building) of rate due to excalation of price. L.S. Cost.....	Rs. 39.60
4.	G.I. wire 250 Gms @ Rs. 60.00/Kg.....	Rs. 15.00
5.	Labour for raising live fencing Total = 1 Dl @ Rs. 110.00/Dl.....	<u>Rs. 110.00</u>
		Total Rs. 333.10
		Say Rs. 333.00

Cost of raising 10 Rm of live fencing	= Rs. 333.00
Cost of raising 1 Rm of live fencing	= <u>Rs. 333.00</u>
	Rs. 10.00
	= Rs. 33.30
Say	= Rs. 33.00

(f) Rate analysis for making stakes of Jati bamboo (As per APWD schedule (Bld) of rate for& as per wage rate of labour board) (Project Area = 1.0 H)

1.	Providing supplying of stakes made of Jati bamboo of 1.0m length. Requirement of Jati bamboo of size 50mm to 85mm dia and 6.0m long. Total = 20 Nos @ Rs. (33.00+20% extra) Rs. 39.60/No..	Rs. 792.00
----	---	------------

2.	Labour for making stakes Total = 2 Dls @ Rs. 110.00/Dl..	Rs. 220.00
		<u>Total Rs. 1,012.00</u>

No of stakes for one hectare (Spacing 3m x 3m)	= 1112 Nos
Cost per stake	= <u>Rs. 1012.00</u>
	1112
	= 0.91
Say	= Rs. 1.00/stake

Approved by

(R.K. Doley)

Director

Soil Conservation, Department Assam,
Pannyagar Bhawan, Guwahati-05

Committee for Revision of Departmental Norms

Scutinized by

(J.C. Gogoi)

Chairman & Joint Director of
Soil Conservation,
(Head Quarter) S.C. Directorate,
Guwahati-05

(B.K. Bhattacharjya)

Member

&

Divisional Soil Conservation
Officer (Engineering), Uzan
Bazar, Guwahati-01

(P. Dutta)

Member

&

Divisional Soil Conservation
Officer, Hamren Soil
Conservation Division,
Hamren

(P. Saikia)

Member Secretary

&

I/C Joint Director of Soil
Conservation, Lower Assam
Circle, Guwahati

(D. Gogoi)

Member

&

Assistant Soil Conservation
Officer, S.C. Directorate,
Guwahati-05

(G. Kalita)

Member

&

Soil Conservation Overseer
O/O the Jt. DSC (RVP)
Guwahati-01

(B)

**Abstract of Norms for Rubber Plantation
(For the Year 2013-2014)**

- A. Name of Crop : Rubber
B. Name of Hybrid : R.R.I.M.-600, R.R.I.I.-105, GT-I
C. Area : 1.0 Hectare

1.	1 st year creation	Rs. 92,000.00
2.	2 nd year maintenance	Rs. 29,950.00
3.	3 rd year maintenance	Rs. 22,800.00
4.	4 th year maintenance	Rs. 18,400.00
5.	5 th year maintenance	Rs. 14,550.00
6.	6 th year maintenance	Rs. 13,800.00
7.	7 th year maintenance	Rs. 12,400.00
	Total during immaturity period	Rs. 2,0900.00
8.	Maintenance from 8 th year onward including the cost of harvesting	Rs. 55,900.00

Remarks :

1. The norms have been prepared in consultation with the existing norms of the Rubber Board, Govt. of India as well as the existing norms of the department.
2. The plantation may be registered with the Rubber Board, Govt. of India in the 1st year creation itself keeping in view to obtain subsidy from them as per their norms.
3. The plantation may be insured with a Nationalized Insurance Company in the 1st year creation itself.
4. Allotment of Govt. land may be obtained from the Revenue Authority Govt. of Assam / Autonomous Councils before going ahead with the work.

Cost of Rubber Plantation
Area : 1.0 Hectare
For the Year -2013-2014

1st Year Creation

1.	Jungle clearance including necessary uprooting and removal of all debris out side the area. Total 60 mandays @ Rs. 152.00/manday.....	Rs. 9,120.00
2.	Terracing, lining and digging of pits of size 60cm x 60cm x 60cm. Total 110 mandays @ Rs. 152.00/manday.....	Rs. 16,720.00
3.	Labour for construction of drain, approach road Total 10 mandays @ Rs. 152.00/manday.....	Rs. 1,520.00
4.	Labour for construction of footpath etc inside and around the plantation area. Total 20 mandays @ Rs. 152.00/manday.....	Rs. 3,040.00
5.	Raising of live fencing by planting Jatropha Vitex cuttings of 120-130 cm long & placed at 10 to 15 cm apart in between live posts of size 180cm long, 10 to 15 cm dia driven at least 45-60cm below ground level at 250cm apart tied with Jati bamboo kamies in three rows tied with G.I. wire etc complete. Total = 400 Rm @ Rs. 33.00/Rm.....	Rs. 13,200.00
6.	Cost of planting materials (Plants raised in poly bags) Total = 500 Nos @ Rs. 55.00/No.....	Rs. 27,500.00
7.	Labour for planting of rubber plants raised in poly bags including filling of pits after being completed necessary treatment and carriage of plants up to the planting site. Total = 95 mandays @ Rs. 152.00/manday.....	Rs. 14,440.00
8.	Application of fertilizer	
(a)	RP 20% (at the time of planting) Total 90 Kg @ Rs. 9.35/Kg.....	Rs. 841.50
(b)	Labour 5 mandays @ Rs.152.00/manday	Rs. 760.00
	<u>Rs. 1,601.50</u>	Rs. 1,601.50
9.	Cost of pesticides etc L.S . Cost.....	Rs. 250.00
10.	Establishment of cover crops :	
(a)	Material Cost L.S. Cost.....	Rs. 350.00
(b)	Labour -12 mandays @ Rs. 152.00/manday.....	Rs. 1,824.00
11(a)	Sign Board	Rs. 400.00
(b)	Insurance L.S. Cost.....	Rs. 1,000.00
	<u>Total</u>	Rs. 90,965.50
	Say	Rs. 91,000.00

Cost of Rubber Plantation
Area : 1.0 Hectare
For the Year -2013-2014
2nd Year Maintenance

1.	Labour for weeding, mulching & pruning		
(i)	1 st weeding & mulching – Total = 25 mandays @ Rs. 152.00/manday.....		Rs. 3,800.00
(ii)	2 nd weeding, pruning & mulching including refilling Total-30 mandays @ Rs. 152.00/manday.....		Rs. 4,560.00
(iii)	3 rd weeding, pruning & mulching- Total = 25 mandays @ Rs. 152.00/manday.....		Rs. 3,800.00
(iv)	4 th weeding & mulching- Total = 25 mandays @ Rs. 152.00/manday.....		Rs. 3,800.00
2.	Cost of planting materials for refilling assuming 1% replacement-Total = 5 Nos @ Rs. 55.00/No.....		Rs. 275.00
3.	Providing supplying of chemical fertilizer as detailed below including carriage up to site & VAT 4%.		
(i)	Rock phosphate 20%		
(a)	To be applied in cover crops in two split doses = 150 Kg		
(b)	As ingredient in 12:12:12 NPK mixture in two split doses	<u>= 142 Kg</u> = 292 Kg	
	@ Rs. 9.35/Kg.....		Rs. 2,730.00
(ii)	Urea (46%) As ingredient in 12:12:12 NPK mixture to be applied in two spit doses. Total = 61 Kg @ Rs. 11.73/Kg.....		Rs. 715.00
(iii)	MOP (60%) As ingredient in 12:12:12 NPK mixture in two spit doses. Total = 47 Kg @ Rs. 11.73/Kg.....		Rs. 551.31
4.	Labour for manuring & split doses Total = 5+5 = 10 mandays @ Rs. 152.00/unit.....		Rs. 1,520.00
5.	Fire protection works – Total = 7 mandays @ Rs. 152.00/unit.....		Rs. 1,064.00
6.	Plant protection measures :		
(a)	Materials L.S. Cost.....		Rs. 250.00
(b)	Labour 5 mandays @ Rs. 152.00/unit.....		Rs. 760.00
7.	Maintenance of cover crops. Total = 5 mandays @ Rs. 152.00/unit.....		Rs. 760.00
8.	Maintenance of drain, footpath, roads & other misc. works Total = 20 mandays @ Rs. 152.00/unit..		Rs. 3,040.00
9.	Repairing of live fencing where necessary including pruning etc.		
	materials component L.S.cost.....	Rs. 500.00	
	Labour component Total =12 mandays @ Rs. 152.00/unit.....	<u>Rs. 1,824.00</u>	
		Rs. 2,324.00	Rs. 2,324.00

Total Rs. 29,949.31
Say Rs. 29,950.00

Cost of Rubber Plantation
Area : 1.0 Hectare
For the Year -2009-2010

3rd Year Maintenance

1.	Weeding		
(a)	1 st weeding, mulching, refilling and pruning Total = 22 mandays @ Rs. 152.00/unit.....		Rs. 3,344.00
(b)	2 nd weeding & mulching Total = 20 mandays @ Rs. 152.00/unit.....		Rs. 3,040.00
(c)	3 rd weeding & mulching Total = 20 mandays @ Rs. 152.00/unit.....		Rs. 3,040.00
(d)	4 th weeding & mulching Total = 18 mandays @ Rs. 152.00/unit.....		Rs. 2,736.00
2.	Cost of planting materials for refilling assuming 1% casualty Rubber Plant- Total = 5 Nos @ Rs. 55.00/No.....		Rs. 275.00
3(a)	Material Component : Providing supplying of chemical fertilizer (12:12:12 NPK @ 250 Kg/H in two split doses).		
(i)	Urea (46%)- 61 Kg @ Rs. 11.73/Kg.	Rs. 715.53	
(ii)	Rock phosphate (20%)- 142 Kg @ Rs. 9.35/Kg	Rs. 1327.70	
(iii)	MOP- 47 Kg @ Rs. 7.76/Kg.	Rs. 551.72	
		<u>Total</u>	Rs. 2594.54
		Say	Rs. 2594.54 Rs. 2,594.54
3(b)	Labour component Total = 10 mandays @ Rs. 152.00/manday.....		Rs. 1,520.00
4.	Labour for pruning / branch induction Total = 5 mandays @ Rs. 152.00/manday.....		Rs. 550.00
5.	Plant protection works :		
(a)	Material component L.S.	Rs. 180.00	
(b)	Labour component Total = 5 mandays @ Rs. 110.00/unit	<u>Rs. 760.00</u>	
		Rs. 940.00	Rs. 940.00
6.	Maintenance of drains & roads Total = 3 mandays @ Rs. 152.00/manday.....		Rs. 456.00
7.	Labour for fire line opening and engagement of watcher Total = 7 mandays @ Rs. 152.00/unit.....		Rs. 1,064.00
8.	Labour for maintenance of foot path & live fencing. Total = 18 mandays @ Rs. 152.00/unit.....		Rs. 2,736.00
9.	Tools & Implements L.S Cost.....		Rs. 300.00
		<u>Total</u>	Rs. 22,805.54
		Say	Rs. 22,800.00

Cost of Rubber Plantation
Area : 1.0 Hectare
For the Year -2013-2014

4th Year Maintenance

1.	Weeding and Mulching :		
(a)	1 st weeding & mulching.		
	Total = 20 mandays @ Rs. 152.00/unit.....		Rs. 3,040.00
(b)	2 nd weeding & mulching		
	Total = 20 mandays @ Rs. 152.00/unit.....		Rs. 3,040.00
(c)	3 rd weeding & mulching		
	Total = 16 mandays @ Rs. 152.00/unit.....		Rs. 2,432.00
2.	Labour for pruning etc		
	Total = 3 mandays @ Rs. 152.00/manday.....		Rs. 456.00
3(a)	Material Component : Providing supplying of chemical fertilizer (12:12:12 NPK @ 250 Kg/H in two split doses).		
(i)	Urea (46%)- 61 Kg @ Rs. 11.73/Kg.	Rs. 715.53	
(ii)	Rock phosphate (20%)- 142 Kg @ Rs.9.35/Kg	Rs1327.70	
(iii)	MOP- 47 Kg @ Rs. 11.73/Kg.	<u>Rs. 551.31</u>	
	Total	Rs2594.54	
	Say	Rs. 2600.00	Rs. 2,600.00
3(b)	Labour component		
	Total = 10 mandays @ Rs. 152.00/manday.....		Rs. 1,520.00
4.	Plant protection works :		
(a)	Material component L.S.	Rs. 260.00	
(b)	Labour component		
	Total = 5 mandays @ Rs. 152.00/unit	<u>Rs. 760.00</u>	
		Rs. 1,020.00	Rs. 1,020.00
5.	Maintenance of drains, foot path & live fencing		
	Total = 19 mandays @ Rs. 152.00/manday.....		Rs. 2,888.00
6.	Watchman as fire watcher		
	Total = 7 mandays @ Rs. 152.00/manday.....		Rs. 1,064.00
7.	Tools & Implements L.S Cost.....		<u>Rs. 300.00</u>
	Total	Rs. 18,354.54	
	Say	Rs. 18,350.00	

Cost of Rubber Plantation
Area : 1.0 Hectare
For the Year -2013-2014

5th Year Maintenance

1.	Weeding, Mulching & Pruning :		
(a)	1 st weeding & mulching.		
	Total = 12 mandays @ Rs. 152.00/unit.....		Rs. 1,824.00
(b)	2 nd weeding, mulching & pruning		
	Total = 14 mandays @ Rs. 152.00/unit.....		Rs. 2,128.00
(c)	3 rd weeding & mulching		
	Total = 12 mandays @ Rs. 152.00/unit.....		Rs. 1,824.00
2	Fertilizer application in prop 12:12:12 NPK @ 250 Kg/H in two split doses.		
(a)	Material Component :		
(i)	Urea (46%)- 61 Kg @ Rs. 11.73/Kg.	Rs. 715.53	
(ii)	Rock phosphate (20%)- 142 Kg @ Rs. 9.35/Kg	Rs. 1327.70	
(iii)	MOP- 47 Kg @ Rs. 11.73/Kg.	Rs. 551.31	
	Total	Rs. 2594.54	
			Rs. 2594.54
2(b)	Labour component		
	Total = 10 mandays @ Rs. 152.00/manday.....		Rs. 1,520.00
3.	Plant protection measures :		
(a)	Materials component L.S.	Rs. 260.00	
(b)	Labour component		
	Total = 3 mandays @ Rs. 152.00/unit	Rs. 456.00	
		Rs. 716.00	Rs. 716.00
4.	Labour for maintenance of drains, & misc works.		
	Total = 2 mandays @ Rs. 152.00/manday.....		Rs. 304.00
5.	Labour for opening of fire line, boundary protection, maintenance of foot path etc.		
	Total = 22 mandays @ Rs. 152.00/manday.....		Rs. 3344.00
6.	Tools & Implements L.S Cost.....		Rs. 300.00
		Total	Rs. 14,554.00
		Say	Rs. 14,550.00

Cost of Rubber Plantation
Area : 1.0 Hectare
For the Year -2013-2014

6th Year Maintenance

1.	Weeding and Mulching :		
(a)	1 st weeding & mulching.		
	Total = 15 mandays @ Rs. 152.00/unit.....		Rs. 2,280.00
(b)	2 nd weeding & mulching.		
	Total = 15 mandays @ Rs. 152.00/unit.....		Rs. 2,280.00
(c)	3 rd weeding & mulching		
	Total = 15 mandays @ Rs. 152.00/unit.....		Rs. 2,280.00
2	Application of chemical fertilizer in prop 12:12:12 NPK @ 250 Kg/H in two split doses.		
(a)	Material Component :		
(i)	Urea (46%)- 61 Kg @ Rs. 11.73/Kg.	Rs. 715.59	
(ii)	Rock phosphate (20%)- 142 Kg @ Rs. 9.35/Kg	Rs. 1,327.70	
(iii)	MOP- 47 Kg @ Rs. 11.73/Kg.	Rs. 551.31	
		Total Rs. 2,594.54	
		Say Rs. 2,600.00	Rs. 2,600.00
2(b)	Labour component		
	Total = 10 mandays @ Rs. 152.00/manday.....		Rs. 1,520.00
3.	Plant protection measures :		
(a)	Material component L.S.	Rs. 260.00	
(b)	Labour component		
	Total = 1 manday @ Rs. 152.00/unit	Rs. 152.00	
		Rs. 412.00	Rs. 412.00
4.	Maintenance of drains, foot path and boundary protection including maintenance of fire line		
	Total = 14 mandays @ Rs. 152.00/manday.....		Rs. 2,128.00
5.	Tools & Implements L.S Cost.....		Rs. 300.00
		Total Rs. 13800.00	
		Say Rs. 13,800.00	Rs. 13,800.00

Cost of Rubber Plantation
Area : 1.0 Hectare
For the Year -2013-2014

7th Year Maintenance

1.	Weeding and Mulching :		
(a)	1 st weeding & mulching.		
	Total = 15 mandays @ Rs. 152.00/unit.....		Rs. 1,650.00
(b)	2 nd weeding & mulching.		
	Total = 15 mandays @ Rs. 152.00/unit.....		Rs. 1,650.00
(c)	3 rd weeding & mulching		
	Total = 15 mandays @ Rs. 152.00/unit.....		Rs. 1,650.00
2	Application of chemical fertilizer in grade 12:12:12 NPK @ 250 Kg/H in two split doses.		
(a)	Material Component :		
(i)	Urea (46%)- 61 Kg @ Rs. 11.73/Kg.	Rs. 715.53	
(ii)	Rock phosphate (20%)- 142 Kg @ Rs. 9.35/Kg	Rs. 1,327.70	
(iii)	MOP- 47 Kg @ Rs. 11.73/Kg.	Rs. 551.31	
		<u>Total</u>	Rs. 2,594.54
		Say	Rs. 2,594.54 Rs. 2,594.54
2(b)	Labour component		
	Total = 10 mandays @ Rs. 152.00/manday.....		Rs. 1,520.00
3.	Plant protection works :		
(a)	Material component L.S.	Rs. 260.00	
(b)	Labour component		
	Total = 1 manday @ Rs. 152.00/unit	<u>Rs. 152.00</u>	
		Rs. 412.00	Rs. 412.00
4.	Maintenance of fire line		
	Total = 7 mandays @ Rs. 110.00/manday.....		Rs. 1,064.00
		<u>Total</u>	Rs. 12,430.54
		Say	Rs. 12,400.00



Cost of Rubber Plantation
Area : 1.0 Hectare
For the Year -2013-2014

Maintenance from the 8th Year onwards

1.	Weeding -3 Nos (10 x 3) = 30 mandays @ Rs. 152.00/manday.....		Rs. 4,560.00
2.	Application of chemical fertilizer in prop 30:30:30 NPK/Ha/year in two split doses.		
(a)	Material Component :		
(i)	Urea - 65 Kg @ Rs. 11.73/Kg.	Rs. 762.45	
(ii)	Rock phosphate (20%)- 150 Kg @ Rs. 9.35/Kg	Rs. 1402.50	
(iii)	MOP- 50 Kg @ Rs. 11.73/Kg.	Rs. 586.50	
(b)	Labour component Total = 10 mandays @ Rs. 152.00/manday.....	Rs. 1520.00	
	Total	Rs. 4271.45	Rs.4300.00
3.	Repairing of approach road and drains Total 3 mandays @ Rs. 152.00/manday.....		Rs. 456.00
4.	Labour for fire protection works including maintenance of live fencing Total = 7 mandays @ Rs. 152.00/unit		Rs. 1,064.00
5.	Harvesting of Rubber :		
(a)	Material Component :		
	Acetic Acid 20 Kg/Ha @ Rs. 140.00/Kg	Rs. 2,800.00	
	Fire wood L.S.	Rs. 750.00	
(b)	Labour component for tapping Total 240 mandays @ Rs. 175.00/unit	Rs. 42,000.00	
	Total	Rs. 55901.45.00	Rs. 55,901.00
			Rs. 55,900.00
			Say Rs. 55,900.00

Approved by

(R.K. Doley)

Director

Soil Conservation Department, Assam

Committee for Revision of Departmental Norms

Scutinized by

(J.C. Gogoi)

Chairman & Joint Director of
Soil Conservation,
(Head Quarter) S.C. Directorate,
Guwahati-05

(B.K. Bhattacharjya)

Member

&

Divisional Soil Conservation
Officer (Engineering), Uzan
Bazar, Guwahati-01

(P. Dutta)

Member

&

Divisional Soil Conservation
Officer, Hamren Soil
Conservation Division,
Hamren

(P. Saikia)

Member Secretary

&

I/C Joint Director of Soil
Conservation, Lower Assam
Circle, Guwahati

(D. Gogoi)

Member

&

Assistant Soil Conservation
Officer, S.C. Directorate,
Guwahati-05

(G. Kalita)

Member

&

Soil Conservation Overseer
O/O the Jt. DSC (RVP)
Guwahati-01

(C)

Abstract of the Norms of Bamboo Plantation for 2013-2014**Total Area : 1.0 Hectare****1. 1st Year Creation (Offshoot Origin) :**

Cost of Creation / Hectare as per						
Size of Planting Area	Type of Fencing with Species of Planting					
	Barbed wire fencing with live fencing posts		Barbed wire fencing with Bholuka bamboo fencing posts		Live fencing	
	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)
1	2	3	4	5	6	7
Narrow strip	69,667.00	74,063.00	68,627.00	73,023.00	62,828.00	67,224.00
Wide strip	61,561.00	65,927.00	60,761.00	65,157.00	59,528.00	63,924.00
2. 2nd Year Maintenance :						
Narrow strip	10,752.00	10,976.00	12,520.00	12,744.00	13,136.00	13,360.00
Wide strip	10,752.00	10,976.00	11,876.00	12,100.00	12,476.00	12,700.00
3. 3rd Year Maintenance :						
Narrow strip	9,963.00	9,277.00	12,919.00	13,143.00	10,697.00	10,921.00
Wide strip	9,849.00	9,163.00	12,107.00	12,331.00	10,367.00	10,591.00

4. 4th Year Maintenance :

Size of Planting Area	Barbed wire fencing with live fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
Narrow strip	8,922.00	11,878.00	9,656.00
Wide strip	8,808.00	11,066.00	9,326.00

5. 5th Year Maintenance : Rs. 4,864.00**6. 6th Year Onwards : -Do-****7. 1st Year Creation : (From Seedling)**

Size of Plot	Barbed wire fencing with live fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
Narrow strip	42,708.00	41,668.00	35,869.00
Wide strip	34,602.00	33,802.00	32,569.00
8. 2nd Year Maintenance : - Do-			
Narrow strip	10,392.00	12,160.00	12,776.00
Wide strip	10,278.00	11,516.00	12,116.00
9. 3rd Year Maintenance : (From Seedling)			

Narrow strip	9,888.00	12,844.00	10,622.00
Wide strip	9,774.00	12,032.00	10,292.00

10. 4th Year Maintenance : (From Seedling)

- (i) For barbed wire fencing with live fencing posts Rs. 8,504.00
(ii) For barbed wire fencing with bholuka bamboo posts..... Rs. 10,912.00
(iii) For live fencing Rs. 9,352.00

11. 5th Year Onwards Maintenance : (-Do-) Rs. 4,864.00

12. (a) Cost of Jati bamboo offshoot Rs. 95.00
(b) Cost of Bholuka bamboo offshoot Rs. 123.00
(c) Cost of Bamboo seedling Rs. 25.00

13. Cost of Chemical Fertilizer (including 4% VAT and carriage up to work site) :

- (i) Urea Rs. 11.73/Kg
(ii) SSP..... Rs. 11.25/Kg
(iii) MOP..... Rs. 11.73/Kg
(iv) Rock phosphate 20%..... Rs. 9.35/Kg

14. Cost of Bamboo nursery (From seeds) (For planting 1.0 Hectare area with a target to produce 200 Nos of seedlings).

- (i) For barbed wire fencing with live fencing posts..... Rs. 4,930.00
(ii) For barbed wire fencing with bholuka bamboo posts..... Rs. 4,907.00
(iii) For live fencing Rs. 4,512.00

Cost of Bamboo Plantation

Total Area = 1.0 Hectare, For the Year – 2013-2014

- General Recommended Species :
1. Bholuka (Bambusa balcooa)
 2. Jati (Bambusa tulda)
 3. Kotoha (Bambusa arundinacea)
 4. Kako (Dendrocalamus hamiltonii)
 5. Muli (Melocana bambusoides)

Species proposed by the Department : Bholuka (Bambusa balcooa) & Jati (Bambusa tulda)

Bamboo Plantation

Propagated from offshoots (Rhizomes)

- (a) Total area to be planted : 1.0 Hectare
(b) Spacing of planting : 8.0m x 8.0m
(c) Time of planting : March
(d) No of offshoots to be planted : $\frac{10,000}{8 \times 8} + 1$ Nos = 157 Nos
in 1.0 hectare

Bamboo Plantation
Total Area = 1.0 hectare, For the Year – 2013-2014
1st Year Creation (Offshoot Origin)

1.	Jungle clearance including removal of all debris from the worksite as directed. Total 30 Dls @ Rs. 152.00/Dl.....	Rs. 4,560.00
2.	Lining, Stakeing, Pit digging of size 60cm x 60cm x 60cm and return filling. Total 16 Dls @ Rs. 152.00/Dl.....	Rs. 2,432.00
3.	Cost of barbedwire made of best quality G.I.wire 12G x 2 ply x 4 points -7.5 cm apart in coils without bobbin in rolls of 201Rm including VAT 13.50% and ASIDC Commission 5%.	
(i)	For narrow strip- 1.4 Qtl. @ Rs. 11,683/Qtl.....	Rs. 16,356.20
(ii)	For wide strip- 0.85 Qtl. @ Rs. 11683/Qtl.....	Rs. 9,930.00
4.	'U' staple made of 10 G good quality galvanized wire of standard size (3,4&5cm) including VAT 13.50% & ASIDC Commission 5%.	
(i)	For narrow strip- 7 Kg. @ Rs. 118.10/Kg.....	Rs. 826.70
(ii)	For wide strip- - 5 Kg. @ Rs. 118.10/Kg.....	Rs. 590.50
5 (a)	Collection of live fencing posts of species like- Jia, Modar, Anhat, Bor, Jori, Simul etc from private patta land owners of size-2.0m long, 20-25cm girth including local carriage and stacking etc all complete.	
(i)	For narrow strip- 130 Nos @ Rs. 38.00/ No.....	Rs. 4,940.00
(ii)	For wide strip- - 100 Nos @ Rs. 38.00/ No.....	Rs. 3,800.00
5 (b)	Cost of Bholuka bamboo fencing post of size 2.0m long, 10-15cm girth including carriage etc all complete as directed.	
(i)	For narrow strip- 130 Nos @ Rs.30.00/ No.....	Rs. 3,990.00
(ii)	For wide strip- - 100 Nos @ Rs.30.00/ No.....	Rs. 3,300.00
6.	Labour for erection of fencing posts up to a depth of 45cm below ground including pit digging, fitting & fixing of barbed wire of 5 rows all complete as directed.	
(i)	For narrow strip- 8 Dls @ Rs. 152.00/ Dl.....	Rs. 1,216.00
(ii)	For wide strip- 6 Dls @ Rs. 152.00/ Dl.....	Rs. 912.00
7.	Raising of live fencing by planting Jetropha, Vitex cuttings of 100 to 120 cm long & placed at 15cm apart centre to centre in between live posts of size 180cm long, 10 to 15 cm dia driven at least 60cm below ground & 120cm above ground at 250cm apart tied with Jati bamboo kamies in three rows binding with G.I. wire etc all complete.	
(i)	For narrow strip- 500 Rm @ Rs. 33.00/Rm.....	Rs. 16,500.00
(ii)	For wide strip- 400 Rm @ Rs. 33.00/Rm.....	Rs. 13,200.00

8.	Providing supplying of FYM/well decomposed cowdung manure to worksite including the cost of loading and unloading. Total = 3 truck loads @ Rs.6,000.00/truck load....	Rs. 18,000.00
9.	Survey L.S. Cost.....	Rs. 150.00
10.	Provision of signboard of size 3' x 5' with plain sheet, Iron frame & posts including fitting & fixing at site. Total 15 sqft. @ Rs. 300.00/sqft.....	Rs. 4,500.00
11.	Providing supplying of bamboo offshoots	
(i)	Jati bamboo offshoots Total = 157 Nos @ Rs. 95.00/No.....	Rs. 14,915.00
(ii)	Bholuka bamboo offshoots Total = 157 Nos @ Rs. 123.00/No.....	Rs. 19311.00
12.	Labour for planting of bamboo offshoots Total = 10 Dls @ Rs. 152.00/Dl.....	Rs. 1,100.00
13.	Providing supplying of stakes Total = 157 Nos @ Rs. 1.60/No.....	Rs. 251.00

Abstract of 1st Year Creation
Total Area = 1.0 Hectare, For the year – 2013-2014

Shape of the Plot	Type of Fencing with species to be planted					
	Barbed wire fencing with live fencing posts		Barbed wire fencing with Bholuka bamboo fencing posts		Live fencing	
	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)
1	2	3	4	5	6	7
Narrow strip	69,667.00	74,063.00	68,627.00	73,023.00	62,828.00	67,224.00
Wide strip	61,561.00	65,927.00	60,716.00	65,157.00	59,528.00	63,924.00

- Remarks :**
- The abstract of norms excludes the price of signboard (Item No.10) as only one signboard is necessary for a particular area of creation in the same financial year within a centre. The Item should be added as per requirement of the field condition after calculating the cost of creation for the particular area.
 - Plantation for an area of 5.0 hectare or less, detailed estimate for requirement of barbed wire fencing may be prepared separately as per Departmental Norms of fencing materials.

Cost of Bamboo Plantation (Offshoot Origin)
Total Area = 1.0 Hectare, For the year- 2013-2014

2nd Year Maintenance

1.	Weeding .		
(a)	1 st weeding and soil working including manuring. Total 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
(b)	2 nd weeding, mulching & casualty replacement Total 10 Dls @ Rs. 152.00/Dl.....		Rs. 1,520.00
(c)	3 rd round weeding, earthing up soil around offshoots, mulching and manuring. Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
2.	Providing supplying of chemical fertilizer to be applied in two split doses around the plant @ 300 gm. Urea, @ 150 gm-Rock phosphate 20% & MOP @ 50 gm/ plant/year.		
(i)	Urea – 47 Kg @ Rs. 11.73/Kg	Rs. 551.31	
(ii)	RP 20%-24 Kg @ Rs. 9.35/Kg	Rs. 224.40	
(iii)	MOP-8Kg @ Rs. 11.73/Kg	Rs. 93.84	
	Total	Rs. 869.55	
	Say	Rs. 870.00	Rs. 870.00
3.	Fire protection works i.e. opening of fireline & engagement of watcher. Total = 8 Dls Rs. 152.00/Dl.....		Rs. 1,216.00
4.	Plant protection works i.e. application of insecticide & fungicide L.S. Cost.....		Rs. 910.00
5.	Providing supplying of bamboo offshoots for casualty replacement assuming 5% replacement.		
(i)	Jati bamboo offshoot-8 Nos @ Rs. 95.00/No.....		Rs. 760.00
(ii)	Bholuka bamboo offshoots-8 Nos @ Rs. 123.00/No.....		Rs. 984.00
6(a)	Repairing of barbed wire fencing with live posts including replacement of damage fencing posts assuming 10% replacement.		
(i)	For narrow strip-		
	Live fencing posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl	Rs. 304.00	
	Total	Rs. 916.00	
	Say	Rs. 916.00	Rs. 916.00
(ii)	For wide strip-		
	Live fencing posts = 10 Nos @ Rs. 38.00/No	Rs. 380.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl	Rs. 304.00	
	Total	Rs. 802.10	
	Say	Rs. 802.00	Rs. 802.00

6(b) Repairing of barbed wire fencing with Bholuka bamboo fencing posts including replacement of damage fencing posts assuming 50% replacement.

(i) For narrow strip-
 Bholuka bamboo posts
 Total = 65 Nos @ Rs. 30.00/No Rs. 1950.00
 U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg. Rs. 354.30
 Labour 2.5 Dls @ Rs. 152.00/Dl Rs. 380.00
 Total Rs. 2684.00
 Say Rs. 2684.00 Rs. 2,684.00

(ii) For wide strip-
 Bholuka bamboo posts
 Total = 50Nos @ Rs. 30.00/No Rs. 1500.00
 U-staple L.S.- 2.0 Kg @ Rs. 118.10/Kg. Rs. 236.20
 Labour 2 Dls @ Rs. 152.00/Dl Rs. 304.00
 Total Rs. 2040.20
 Say Rs. 2040.00 Rs. 2040.00

6(c) repairing of live fencing including damaged live posts, pruning of cuttings of Jatropha/ Vitex etc assuming 20% damage.

(i) For narrow strip 20% of 500 rm = 100 rm
 @ Rs. 33.00/rm..... Rs. 3,300.00
 (ii) For wide strip 20% of 400 rm = 80 rm
 @ Rs. 33.00/rm..... Rs. 2,640.00

ABSTRACT

Shape & size of the plantation area	Type of Fencing and species of the Plantation					
	Barbed wire fencing with live fencing posts		Barbed wire fencing with Bholuka bamboo fencing posts		Live fencing	
	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)
1	2	3	4	5	6	7
Narrow strip	10,752.00	10,976.00	12,520.00	12,744.00	13,136.00	13,360.00
Wide strip	10,638.00	10,862.00	11,876.00	12,100.00	12,476.00	12,700.00

Cost of Bamboo Plantation (Offshoot Origin)
Total Area = 1.0 Hectare, For the year- 2013-2014

3rd Year Maintenance

1.	Weeding .		
(a)	1 st weeding, casualty replacement and application of chemical fertilizer.		
	Total 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
(b)	2 nd weeding & mulching		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
(c)	3 rd weeding, mulching and earthing up of soil arriybd the clump Total = 12 Dls @ Rs. 152.00/Dl.....		Rs. 1,824.00
2.	Providing supplying of chemical fertilizer to be applied in single dose - Urea @ 200 gm., RP 20% @ Rs. 200 gm & MOP @ 100 gm/ Plant/year		
(i)	Urea - 31 Kg @ Rs. 1173/Kg	Rs. 240.56	
(ii)	RP 20%-31 Kg @ Rs. 9.35/Kg	Rs. 289.85	
(iii)	MOP-16 Kg @ Rs. 11.73/Kg	Rs. 187.68	
	Total	Rs. 841.16	
	Say	Rs. 841.00	Rs. 841.00
3 (a)	Repairing of barbed wire fencing with live fencing posts including replacement of fencing posts etc (assuming 10% replacement)		
(i)	For narrow strip-		
	Live fencing posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl	Rs. 304.00	
	Total	Rs. 916.00	
	Say	Rs. 916.00	Rs.916.00
(ii)	For wide strip-		
	Live fencing posts = 10 Nos @ Rs. 38.00/No	Rs. 380.00	
	U-staple L.S.- 1.0 Kg @ Rs. 83.82/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 110.00/Dl	Rs. 304.00	
	Total	Rs. 802.00	
	Say	Rs. 802.00	Rs. 802.00
3(b)	Repairing of barbed wire fencing with Bholuka bamboo posts including replacement of damage posts etc assuming 75% replacement.		
(i)	For narrow strip-		
	Bholuka bamboo fencing posts		
	Total = 97 Nos @ Rs. 30.00/No	Rs. 2910.00	
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30	
	Labour 4 Dls @ Rs. 152.00/Dl	Rs. 608.00	
	Total	Rs. 3,872.30	
	Say	Rs. 3,872.00	Rs. 3,872.00

- (ii) For wide strip-
 Bholuka bamboo fencing posts
 Total = 75Nos @ Rs. 30.00/No Rs. 2250.00
 U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg. Rs. 354.30
 Labour 3 Dls @ Rs. 110.00/Dl Rs. 456.00
 Total Rs. 3,060.30
 Say Rs. 3,060.00 Rs. 3,060.00
- 3(c) Repairing of live fencing including replacement of dried cuttings/ posts etc all complete as directed. (Assuming 10% replacement)
- (i) For narrow strip
 Total = 50 rm @ Rs. 33.00/rm..... Rs. 1,650.00
- (ii) For wide strip
 Total = 40 rm @ Rs. 33.00/rm..... Rs. 1,320.00
4. Fire protection works i.e. opening of fire line and engagement of watcher.
 Total = 8 Dls @ Rs. 152.00/Dl..... Rs. 1,216.00
5. Plant protection works i.e. application of fungicide / insecticide L.S. Cost..... Rs. 910.00
6. Providing supplying of bamboo offshoots for casualty replacement (assuming 5% replacement).
- (i) Jati bamboo offshoots- 8 Nos @ Rs. 95.00/No..... Rs. 760.00
 (ii) Bholuka bamboo offshoots- 8 Nos @ Rs. 123.00/No... Rs. 984.00

ABSTRACT

Shape of the plantation area	Type of Fencing and species to be planted					
	Barbed wire fencing with live fencing posts		Barbed wire fencing with Bholuka bamboo fencing posts		Live fencing	
	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)	Jati bamboo offshoots (Rs)	Bholuka bamboo offshoots (Rs)
1	2	3	4	5	6	7
Narrow strip	9,963.00	9,277.00	12,919.00	13,143.00	10,697.00	10,921.00
Wide strip	9,849.00	9,163.00	12,107.00	12,331.00	10,367.00	10,591.00

Cost of Bamboo Plantation (Offshoot Origin)
Total Area = 1.0 Hectare, For the year- 2013-2014

4th Year Maintenance

1.	Weeding .		
(a)	1 st weeding, soil working & mulching		
	Total 10 Dls @ Rs. 152.00/Dl.....		Rs. 1,520.00
(b)	2 nd weeding & mulching		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
(c)	3 rd weeding, earthing up around the clump, application of chemical fertilizer & mulching.		
	Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
2.	Providing supplying of chemical fertilizer to be applied around the bamboo clump - Urea @ 300 gm., RP 20% @ Rs. 300 gm & MOP @ 200 gm/ Plant/year in single dose.		
(i)	Urea – 47 Kg @ Rs. 11.73/Kg	Rs. 551.31	
(ii)	RP 20%-47 Kg @ Rs. 9.35/Kg	Rs. 439.45	
(iii)	MOP-31 Kg @ Rs. 7.76/Kg	Rs. 363.63	
	Total	Rs. 1354.39	
	Say	Rs. 1354.00	Rs. 1,354.00
3 (a)	Repairing of barbed wire fencing with live fencing posts including replacement of dead fencing posts etc (assuming 10% replacement)		
(i)	For narrow strip-		
	Live fencing posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl	Rs. 304.00	
	Total	Rs. 916.10	
	Say	Rs. 916.00	Rs. 916.00
(ii)	For wide strip-		
	Live fencing posts = 10 Nos @ Rs. 38.00/No	Rs. 380.00	
	U-staple L.S.- 1.0 Kg @ Rs. 83.82/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 110.00/Dl	Rs. 304.00	
	Total	Rs. 802.10	
	Say	Rs. 802.00	Rs. 802.00
3(b)	Repairing of barbed wire fencing with Bholuka Bamboo fencing posts including replacement of damage fencing posts etc assuming 75% replacement.		
(i)	For narrow strip-		
	Bholuka bamboo fencing posts		
	Total = 97 Nos @ Rs. 30.00/No	Rs. 2910.00	
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30	
	Labour 4 Dls @ Rs. 110.00/Dl	Rs. 608.00	
	Total	Rs. 3,872.30	
	Say	Rs. 3,872.00	Rs. 3,872.00

- (ii) For wide strip-
 Bholuka bamboo fencing posts
 Total = 75Nos @ Rs. 30.00/No Rs. 2250.00
 U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg. Rs. 354.30
 Labour 3 Dls @ Rs. 110.00/Dl Rs. 456.00
 Total Rs. 3,060.30
 Say Rs. 3,060.00 Rs. 3,060.00
- 3(c) Repairing of live fencing including pruning etc
 all complete as directed.
 (Assuming 10% replacement)
- (i) For narrow strip
 Total = 50 rm @ Rs. 33.00/rm..... Rs. 1,650.00
- (ii) For wide strip
 Total = 40 rm @ Rs. 33.00/rm..... Rs. 1,320.00
4. Fire protection works i.e. cutting of fire line and
 engagement of watcher.
 Total = 8 Dls @ Rs. 152.00/Dl..... Rs. 1,216.00
5. Plant protection measures L.S. Cost..... Rs. 420.00

ABSTRACT

Shape of the plot	Type of Fencing		
	Barbed wire fencing with live fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
Narrow strip	8,922.00	11,878.00	9,656.00
Wide strip	8,808.00	11,066.00	9,326.00

**Cost of Bamboo Plantation (Offshoot Origin)
Total Area = 1.0 Hectare, For the year- 2009-2010**

5th Year Maintenance

1.	Weeding & Mulching Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
2.	Earthing up & mulching around the clump Total 16 Dls @ Rs. 152.00/Dl.....	Rs. 2,432.00
3.	Fireline opening & engagement of watcher Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
		Total Rs. 4,864.00

**Cost of Bamboo Plantation (Offshoot Origin)
Total Area = 1.0 Hectare, For the year- 2013-2014**

6th Year Maintenance

1.	Weeding & Mulching Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
2.	Earthing up & mulching around the clump Total 16 Dls @ Rs. 152.00/Dl.....	Rs. 2,432.00
3.	Fireline opening & engagement of watcher Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
		Total Rs. 4,864.00

Remarks : To maintain the sustained yield, the bamboo plantation will be managed from 6th year onwards as per following formula.

$$2n + I$$

Where, n = Young shoot

I = Mother stem

Keeping this, balance stems should be removed instead of clear felling.

Cost of Bamboo Plantation (From Seedlings)
Total Area = 1.0 Hectare, For the year- 2013-2014

1st Year Creation

A.	Species suggested	:	1. Jati (Bambusa tulda) 2. Bholuka (Bambusa balcooa)	
B.	Area	:	1.0 hectare	
C.	Spacing	:	8.0m x 8.0m	
D.	No of Seedlings/Hectare	:	157 Nos	
1.	Jungle cutting, removal of debries from the site etc all complete as directed. Total 30 Dls @ Rs. 152.00/Dl.....			Rs. 4,560.00
2.	Lining, staking, pit digging of size 30cm x 30cm x 30cm Total 8 Dls @ Rs. 152.00/Dl.....			Rs. 1,216.00
3.	Return filing of pits after mixing well decomposed cowdung manure and rock phosphate @ 100gm/Pit Total 3 Dls @ Rs. 152.00/Dl.....			Rs. 456.00
4.	Providing supplying of barbed wire 12G x 2 ply x 4 points-7.5cm apart packed in coil without bobbin of 201 Rm including carriage 13.5% VAT & 5 % ASIDC commission.			
(i)	For narrow strip -1.4 Qtl. @ Rs. 8,11,683.00/Qtl.....			Rs. 16,356.20
(ii)	For wide strip-0.85Qtl. @ Rs. 11,683.00/Qtl.....			Rs. 9,930.55
5.	Providing supplying of U-staple made of best quality 10 G G.I. wire of standard size (3,4&5cm) including carriage 4% VAT & 5 % ASIDC commission.			
(i)	For narrow strip- 7 Kg @ Rs. 118.10/Kg.....			Rs. 826.70
(ii)	For wide strip-5 Kg @ Rs. 118.10/Kg.....			Rs. 590.50
6(a)	Providing supplying of live fencing posts mainly of Jia, Modar, Kechkechi, Auhat, Boro, Jori etc. of size 2.0m long, 20-25 cm girth including carriage etc up to the work site.			
(i)	For narrow strip- 130 Nos @ Rs. 38.00/No.....			Rs.4,940.00
(ii)	For wide strip- 100 Nos @ Rs. 38.00/No.....			Rs. 3,800.00
6(b)	Providing supplying of Bholuka bamboo fencing posts of size-2.0m long, 10.15cm girth including carriage up to work site.			
(i)	For narrow strip- 130 Nos @ Rs. 30.00/No.....			Rs. 3,900.00
(ii)	For wide strip- 100 Nos @ Rs. 30.00/No.....			Rs. 3,000.00
7.	Labour for erection of fencing posts up to a depth of 45cm below ground level including pit digging, fitting & fixing of barbed wire etc all complete as directed.			
(i)	For narrow strip- 8 Dls @ Rs. 152.00/Dl.....			Rs. 1,216.00
(ii)	For wide strip- 6 Dls @ Rs. 152.00/Dl.....			Rs. 912.00

8. Providing live fencing with Jatropha/Vitex cuttings of 100cm to 120cm long, placed at 15cm apart in between live posts of size 180cm long, 10-15cm dia driven at least 60cm below ground level at 250cm apart binding with Jati bamboo kamies in three rows tied with G.I. wire.
- (i) For narrow strip- 500 Rm @ Rs. 33.00/Rm..... Rs. 16,500.00
- (ii) For wide strip- 400 Rm @ Rs. 33.00/Rm..... Rs. 13,200.00
9. Providing supplying of the following for use in pit filling
- (i) Cowdung (well decomposed) ½ truck @ Rs. 6,000.00/truck Rs. 3,000.00
- (ii) Rock phosphate 20%-16 Kg @ Rs. 9.35/Kg..... Rs. 150.00
10. Providing supplying of bamboo seedlings with ball of earth. Total= 180 Nos (inclusive additional 15%) @ Rs. 25.00/ No..... Rs. 4,500.00
11. Local carriage of seedlings up to plantation site Total 180 Nos @ Rs. 1.00/No..... Rs. 180.00
12. Labour for planting of bamboo seedlings Total 3 Dls @ Rs.152.00/Dl..... Rs. 456.00
13. Providing supplying of stakes Total 157 Nos @ Rs. 1.00/No..... Rs. 251.00
14. Survey L.S. Cost..... Rs. 100.00
15. Providing supplying of sign board of size 3' x 5' in plain sheet, iron frame including fitting and fixing at site. Total 15 Sqft. @ Rs. 300.00/ Sqft..... Rs. 4,500.00

ABSTRACT OF NORMS

Shape of the plot	Type of Fencing		
	Barbed wire fencing with live fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
Narrow strip	42,708.00	41,668.00	35,869.00
Wide strip	34,602.00	33,802.00	32,569.00

- Remarks :
1. Plantation for an area of 5.0 hectare or less, detailed estimate for barbed wire fencing may be prepared separately as per departmental norms of fencing materials.
 2. The abstract of cost norms / hectares/excludes item No. 15 which should be added after calculation of total cost for the particular area to be created as one no signboard is necessary for a particular plot only.
 3. Item No 10 may be omitted if departmental nursery is available.

Cost of Bamboo Plantation (From Seedlings)
Total Area = 1.0 Hectare, For the year- 2013-2014

2nd Year Maintenance

1.	Weeding .		
(a)	1 st weeding, casualty replacement and application of chemical fertilizer.		
	Total 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
(b)	2 nd weeding soil working & mulching		
	Total 10 Dls @ Rs. 152.00/Dl.....		Rs. 1,520.00
(c)	3 rd weeding, soil working, mulching & manuring.		
	Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
2.	Providing supplying of chemical fertilizer		
(i)	Urea – 47 Kg @ Rs. 11.73/Kg	Rs. 551.31	
(ii)	RP 20%-24 Kg @ Rs. 9.35/Kg	Rs. 224.40	
(iii)	MOP-8 Kg @ Rs. 11.73/Kg	Rs. 93.84	
	Total	Rs. 869.55	
	Say	Rs. 870.00	Rs. 870.00
3.	Plant protection i.e. application of pesticide and fungicide. L.S. Cost.....		Rs. 910.00
4.	Fire protection work i.e. opening of fire line & engagement of fire watcher Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
5.	Providing supplying of bamboo seedlings with ball of earth for casualty replacement.		
	Total 16 Nos @ Rs. 25.00/No.....		Rs. 400.00
6.(a)	Repairing of barbed wire fencing with live fencing posts (assuming 10% replacement of old decayed fencing post).		
(i)	For narrow strip-		
	Live fencing posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl	Rs. 304.00	
	Total	Rs. 916.10	
	Say	Rs. 916.00	Rs. 916.00
(ii)	For wide strip-		
	Live fencing posts = 10 Nos @ Rs. 38.00/No	Rs. 380.00	
	U-staple L.S.- 1.0 Kg @ Rs. 83.82/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 110.00/Dl	Rs. 304.00	
	Total	Rs. 802.00	
	Say	Rs. 802.00	Rs. 802.00
6(b)	Repairing of barbed wire fencing with Bholuka Bamboo fencing posts including replacement of damage fencing posts assuming 50% replacement.		
(i)	For narrow strip-		
	Bholuka bamboo fencing posts		
	Total = 65 Nos @ Rs. 30.00/No	Rs. 1950.00	
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30	

Labour 2.5 Dls @ Rs. 110.00/Dl

	Rs. 380.00
Total	Rs. 2,684.30
Say	Rs. 2,684.00 Rs. 2,684.00

(ii) For wide strip-

Bholuka bamboo fencing posts

Total = 50Nos @ Rs. 30.00/No

Rs. 1500.00

U-staple L.S.- 2.0 Kg @ Rs. 118.10/Kg.

Rs. 236.20

Labour 2 Dls @ Rs. 152.00/Dl

Rs. 304.00

Total Rs. 2,040.20

Say Rs. 2040.00 Rs. 2040.00

6(c) Repairing of live fencing where necessary

(i) For narrow strip

Total = 100 rm @ Rs. 33.00/rm.....

Rs. 3,300.00

(ii) For wide strip

Total = 80 rm @ Rs. 33.00/rm.....

Rs. 2,640.00

ABSTRACT

Shape of the Plantation area	Type of Fencing		
	Barbed wire fencing with live fencing posts (R)	Barbed wire fencing with Bholuka bamboo fencing posts (R)	Live fencing
Narrow strip	10,392.00	12,160.00	12,776.00
Wide strip	10,392.00	12,160.00	12,776.00

Cost of Bamboo Plantation (From Seedlings) Total Area = 1.0 Hectare, For the year- 2009-2010

3rd Year Maintenance

1. Weeding .

(a) 1st weeding, vacancy filling and manuring.

Total 15 Dls @ Rs. 152.00/Dl.....

Rs. 2,280.00

(b) 2nd weeding & mulching

Total 8 Dls @ Rs. 152.00/Dl.....

Rs. 1,216.00

(c) 3rd weeding, soil working, mulching & manuring.

Total = 15 Dls @ Rs. 152.00/Dl.....

Rs. 2,280.00

2. Providing supplying of seedlings for casualty replacement assuming 5% replacement.

Total = 8 Nos @ Rs. 25.00/No.....

Rs. 200.00

3. Providing supplying of chemical fertilizer to be applied in two split doses.

(i) Urea – 47 Kg @ Rs. 11.73/Kg

Rs. 551.31

(ii) RP 20%-24 Kg @ Rs. 9.35/Kg

Rs. 224.40

(iii) MOP-8 Kg @ Rs. 11.73/Kg

Rs. 93.84

	Total Rs. 869.55	
	Say Rs. 870.00	Rs. 870.00
4.	Plant protection measures L.S. Cost.....	Rs. 910.00
5.	Fire line opening and engagement of watcher Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
6.(a)	Repairing of barbed wire fencing with live fencing posts (assuming 10% replacement of old decayed fencing posts).	
(i)	For narrow strip-	
	Live fencing posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10
	Labour 2 Dls @ Rs. 152.00/Dl	Rs. 304.00
	Total	Rs. 916.10
	Say	Rs. 916.00 Rs. 916.00
(ii)	For wide strip-	
	Live fencing posts = 10 Nos @ Rs. 38.00/No	Rs. 380.00
	U-staple L.S.- 1.0 Kg @ Rs. 83.82/Kg.	Rs. 118.00
	Labour 2 Dls @ Rs. 152.00/Dl	Rs. 304.00
	Total	Rs. 802.10
	Say	Rs. 802.00 Rs. 802.00
6(b)	Repairing of barbed wire fencing with Bholuka Bamboo fencing posts including replacement of damage fencing posts etc assuming 75% replacement.	
(i)	For narrow strip-	
	Bholuka bamboo fencing posts	
	Total = 97 Nos @ Rs. 30.00/No	Rs. 2910.00
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30
	Labour 4 Dls @ Rs. 110.00/Dl	Rs. 440.00
	Total	Rs. 3,872.30
	Say	Rs. 3,872.00 Rs. 3,872.00
(ii)	For wide strip-	
	Bholuka bamboo fencing posts	
	Total = 75Nos @ Rs. 30.00/No	Rs. 225.00
	U-staple L.S.- 3.0 Kg @ Rs. 83.82/Kg.	Rs. 354.30
	Labour 3 Dls @ Rs. 152.00/Dl	Rs. 456.00
	Total	Rs. 3,060.30
	Say	Rs. 3,060.00 Rs. 3,060.00
6(c)	Repairing of live fencing including replacement of damaged live posts etc assuming 10% damage.	
(i)	For narrow strip	
	Total = 50 rm @ Rs. 33.00/rm.....	Rs. 1,650.00
(ii)	For wide strip	
	Total = 40 rm @ Rs. 33.00/rm.....	Rs. 1,320.00

ABSTRACT

Shape of the Plantation area	Type of Fencing		
	Barbed wire fencing with live fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
Narrow strip	9,888.00	12,844.00	10,622.00

Wide strip	9,774.00	12,032.00	10,292.00
------------	----------	-----------	-----------

Remarks : Item No. 2 may be omitted if departmental nursery is available.

**Cost of Bamboo Plantation (Seedling Origin)
Total Area = 1.0 Hectare, For the year- 2009-2010**

4th Year Maintenance

1.	Weeding .		
(a)	1 st weeding and manuring.		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
(b)	2 nd weeding & mulching		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
(c)	3 rd weeding, earthing up of soil around clump, mulching & manuring.		
	Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
2.	Providing supplying of chemical fertilizer to be applied around the bamboo clumps Urea @ 300gm, Rock phosphate 20% @ 300gm & MOP @ 200gm/ plant/ year in single dose.		
(i)	Urea – 47 Kg @ Rs. 11.73/Kg	Rs. 551.32	
(ii)	RP 20%-47 Kg @ Rs. 9.35/Kg	Rs. 439.45	
(iii)	MOP-31 Kg @ Rs. 11.73/Kg	Rs. 363.63	
	Total	Rs. 1354.39	
	Say	Rs. 1354.00	Rs. 1,354.00
3.	Plant protection measures L.S. Cost.....		Rs. 420.00
4.	Fire protection works i.e. opening of fire line and engagement of watcher		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
5.(a)	Repairing of barbed wire fencing with live fencing posts including replacement of damaged fencing post.		
(i)	For narrow & wide strips- (Average)		
	Live fencing posts = 10 Nos @ Rs. 38.00/No	Rs. 380.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 2 Dls @ Rs. 152.00/Dl	Rs. 304.00	
	Total	Rs. 802.10	
	Say	Rs. 802.00	Rs. 802.00
5(b)	Repairing of barbed wire fencing with Bholuka Bamboo fencing posts including replacement of damage fencing posts etc.		
(i)	For narrow & wide strips- (Average)		
	Bholuka bamboo fencing posts		
	Total = 80 Nos @ Rs. 30.00/No	Rs. 2400.00	
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.00	
	Labour 3 Dls @ Rs. 152.00/Dl	Rs. 456.00	
	Total	Rs. 3,210.30	
	Say	Rs. 3,210.00	Rs. 3,210.00
5(c)	Repairing of live fencing including pruning etc all complete as directed.		
(i)	For narrow & wide strip (Average)		

Total = 50 rm @ Rs. 33.00/rm.....

Rs. 1,650.00

ABSTRACT

Cost in areas of barbed wire fencing with live post (Rs)	Cost in areas of barbed wire fencing with bholuka bamboo post (Rs)	Cost in areas of live fencing (Rs)
8,504.00	10,912.00	9,352.00

**Cost of Bamboo Plantation (Seedling Origin)
Total Area = 1.0 Hectare, For the year- 2009-2010**

5th Year Maintenance

1. Weeding .		
(a) 1 st weeding and mulching		
Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
(b) 2 nd weeding, earthing up around the clump & mulching		
Total 16 Dls @ Rs. 152.00/Dl.....		Rs. 2,432.00
(c) Fire protection works		
Total = 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
		<u>Total Rs. 4,864.00</u>

**Cost of Bamboo Plantation (Seedling Origin)
Total Area = 1.0 Hectare, For the year- 2013-2014**

Maintenanec from 6th Year Onwards

1. Weeding .		
(a) 1 st weeding and mulching		
Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
(b) 2 nd weeding, earthing up around the clump & mulching		
Total 16 Dls @ Rs. 152.00/Dl.....		Rs. 2,432.00
(c) Fire protection works		
Total = 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
		<u>Total Rs. 4,864.00</u>

**Cost of Bamboo Nursery (From Seeds)
(For the year 2013-2014)**

- A. For 10 ha area to be planted at a specement of 8m x 8m, requirement of seedlings. = 2000 Nos (Including replacemnet of casualty).
 B. No of beds required (10m x 1m) = 13 Nos
 C. Total area required for the nursery = 16m x 12m = 192 m2
 D. Perimeter of the nursery = 56 Rm.

Detailed Estimate

- | | | |
|------|---|--------------|
| 1. | Cost of barbed wire made of best quality G.I. wire 12G x 2 ply x 4 points -7.5cm apart in coils without bobbin in rolls of 201 Rm including 4% VAT & 5% ASIDC Commission & carrying including loading & unloading etc.
Requirement of barbed wire = 280 Rm = 35 Kg
@ Rs. 116.83/Kg..... | Rs. 4,089.05 |
| 2. | Cost of U staple made of 10G best quality galvanized wire of standard size (3,4&5 cm) including carriage, VAT 4% & ASIDC Commission 5%.
Requirement of U-staple-2Kg @ Rs. 118.10/Kg..... | Rs. 236.20 |
| 3(a) | Providing supplying of live fencing posts of size 2.0m long, 20-25cm girth including carriage etc up to work site.
Fencing posts = 29 Nos @ Rs. 38.00/No..... | Rs. 1,102.00 |
| 3(b) | Providing supplying of Bholuka bamboo fencing posts of size 2.0m long, 10-15cm girth including carriage etc up to work site.
Fencing posts = 29 Nos @ Rs. 30.00/No..... | Rs. 870.00 |
| 4. | Raising of live fencing by planting Jatropha/ Vitex cuttings of 100 to 120 cm long, placed at 15cm apart (centre to centre) in between live post of size 180 cm long, 10 to 15 cm dia driven at least 60cm below ground & 120cm above ground at 250cm apart tied with Jati bamboo kamies in three rows binding with G.I. wire.
Total = 56 Rm @ Rs. 33.00/Rm..... | Rs. 1,848.00 |
| 5. | Labour for digging of pits, erection of fencing posts atleast 45cm below ground level, fitting & fixing of barbed | |

	wire etc all complete as directed. Total 4 Dls @ Rs. 152.00/Dl.....	Rs. 608.00
6.	Labour for jungle clearance, uprooting of stumps etc Total 2 Dls @ Rs. 152.00/Dl.....	Rs. 304.00
7.	Soil working, leveling, preparation of bed including application of well decomposed cowdung manure. Total 13 Dls @ Rs. 152.00/Dl.....	Rs. 1,976.00
8.	Providing supplying of well decomposed cowdung including loading and unloading. Cowdung -1truck load @ Rs. 6,000.00/truck load.....	Rs. 6,000.00
9.	Collection of seeds including treatment by mixing Diathene M-45 @ Rs. 3gm/Kg of seeds L.S. Cost.....	Rs. 1,400.00
10.	Seed sowing in the nursery beds Total 3 Dls @ Rs. 152.00/Dl.....	Rs. 456.00
11.	Maintenanec of 13 Nos of beds-viz Weeding, regular watering, application of pesticide/fungicides. Total 180 Dls (For two year maintenance) @ Rs. 152.00/Dl.....	Rs. 27,360.00
12.	Providing supplying of materials for shade to the nursery beds.	
(i)	Jati bamboo-32 Nos @ Rs. 55.00/No.....	Rs. 1,760.20
(ii)	Thatching grass-500 bundles @ Rs. 2500.00/1000 bundle.....	Rs. 1,750.00
13.	Labour for creation of shade roof as necessary. Total 2 Dls @ Rs. 152.00/Dl.....	Rs. 304.00
14.	Cost of pesticide/fungicide L.S. cost.....	Rs. 910.00
15.	Cost of tools & inputs L.S. Cost.....	Rs. 1,050.00

ABSTRACT

Particular of Item	Cost of creation of Bamboo Nursery from Seeds		
	Barbed wire fencing with live fencing posts (R)	Barbed wire fencing with Bholuka bamboo fencing posts (R)	Live fencing
Total cost for raising 2000 nos of seedlings for planting 10.0 Ha	49,305.00	49,073.00	45,118.00
Cost/ Seedling	25.00	25.00	23.00

Rate Analysis for Jati Bamboo Offshoots (Rhizomes)

(For 200 Nos of Rhizomes)

1.	Cost of Jati bamboo of age-1 year to 1 ½ year Total 200 Nos @ Rs (33.00+20% extra) = Rs. 60.00/No	Rs. 12,000.00
2.	Labour for uprooting & preparation of offshoots Total 29 Dls @ Rs. 152.00/Dl.....	Rs. 3,952.00
3.	Carriage by truck up to work stie within a distance of 50 Km including loading and unloading. L.S. Cost....	Rs. 3,000.00
		Total Rs. 18,952.00

Cost of 200 nos of offshoots = Rs. 18,952.00
 Cost of 1 No of offshoot = Rs. $\frac{18,952.00}{200}$
 = Rs. 94.76
 Say = Rs. 95.00

Rate Analysis for Bholuka Bamboo Offshoots (Rhizomes)

(For 200 Nos of Rhizomes)

1.	Cost of Bholuka bamboo of age-1 year to 1 ½ year old Total 200 Nos @ Rs (50.00+20% extra) = Rs. 86.00/No	Rs. 16,800.00
2.	Labour for uprooting & preparation of offshoots Total 30 Dls @ Rs. 152.00/Dl.....	Rs. 4,712.00
3.	Carriage by truck up to work stie within a distance of 50 Km including loading and unloading. L.S. Cost....	Rs. 3,000.00
		Total Rs. 24,512.00

Cost of 200 nos of offshoots = Rs. 24,512.00
 Cost of 1 No of offshoot = Rs. $\frac{24,512.00}{200}$
 = Rs. 122.5
 Say = Rs. 123.00

COST OF CHEMICAL FERTILIZER

Name of Chemical Fertilizer	Priec (Rs / MT)	VAT 4% (Rs)	Carriage cost (Rs / MT)	Total cost (Rs / MT)	Cost/Qtl. (Rs)	Cost/ Kg (Rs)
1	2	3	4	5	6	7
Urea	9100.00	1228.00	1400.00	11728.00	1172.80	11.73
SSP	8680.00	1172.00	1400.00	11252.00	1125.20	11.25
MOP	9100.00	1228.00	1400.00	11728.00	1172.80	11.73
Rock Phosphate 20%	7000.00	945.00	1400.00	9345.00	934.50	9.35

- Remarks :**
1. The rate for carrying cost of chemical fertilizer is assumed as Rs. 10,000.00 for 10 MT (1 truck load).
 2. Rates are collected from M/s Fertico, G.S. Road, Ulubari, Guwahati-07. Dealer of fertilizer, pesticides etc as the present rates are not available with the Agriculture Department, Govt. of Assam.

Approved by

(R.K. Doley)

Director
Soil Conservation, Department Assam,
Pannyagar Bhawan, Guwahati-05

Committee for Revision of Departmental Norms

Scutinized by

(J.C. Gogoi)

Chairman & Joint Director of
Soil Conservation,
(Head Quarter) S.C. Directorate,
Guwahati-05

(B.K. Bhattacharjya)

Member
&
Divisional Soil Conservation
Officer (Engineering), Uzan
Bazar, Guwahati-01

(P. Dutta)

Member
&
Divisional Soil Conservation
Officer, Hamren Soil
Conservation Division,
Hamren

(P. Saikia)

Member Secretary
&
I/C Joint Director of Soil
Conservation, Lower Assam
Circle, Guwahati

(D. Gogoi)

Member
&
Assistant Soil Conservation
Officer, S.C. Directorate,
Guwahati-05

(G. Kalita)

Member
&
Soil Conservation Overseer
O/O the Jt. DSC (RVP)
Guwahati-01

(D)

**Abstract of Norms of Coffee Plantation
(For the year : 2013-2014)**

1. Species : (i) Coffea robusta
(ii) Coffea arabica
2. Area : 1.0 hectare

Species with year of creation & maintenance	Cost Norms as per type of fencing		
	Barbed wire fencing with live wood fencing posts (Rs)	Barbed wire fencing with Bholuka bamboo fencing posts (Rs)	Live fencing (Rs)
1	2	3	4
1st Year Creation :			
1. (a) Coffea robusta	95,526.85	94,486.85	85,387.95
(b) Coffea arabica	103,182.30	102,142.30	93,043.40
2nd Year Maintenancec :			
2. (a) Coffea robusta	41,383.40	43,303.30	43,259.30
(b) Coffea arabica	43,958.60	45,878.80	45,474.50
3rd Year Maintenancec :			
3. (a) Coffea robusta	30,756.10	33,864.30	31,312.00
(b) Coffea arabica	34,862.60	37,970.80	35,418.50
4th Year Maintenancec :			
4. (a) Coffea robusta	35,784.28	38,892.48	36,340.18
(b) Coffea arabica	35,916.92	39,025.12	36,472.82
5th Year Maintenancec :			
5. (a) Coffea robusta	35,435.45	38,543.65	36,495.35
(b) Coffea arabica	35,060.92	38,169.12	36,120.82
6th Year Maintenancec :			
6. (a) Coffea robusta	31,395.45	34,503.65	32,455.35
(b) Coffea arabica	33,653.25	36,761.45	34,713.15
7th Year Maintenancec :			
7. (a) Coffea robusta	36,645.45	39,753.65	37,705.35
(b) Coffea arabica	38,903.25	42,011.45	39,963.15

- Remarks :**
1. These norms have been prepared in consultation with the existing norms of the department for 2009-10.
 2. Allotment of land for raising plantation may be obtained from the Revenue Authority, Govt. of Assam before going ahead with the work.
 3. The plantation may be registered with Coffee Board, Govt. of India keeping in view to obtain subsidy as epr their norms.
 4. The plantation may be insured with a nationalized insurance company in the 1st year of creation itself.
 5. Funding for creation & maintenance of the plantation may be done subject to fulfillment of the above conditions.
 6. Plantation for an area of 5.0 hectare or less, detailed estimate for barbed wire fencing (except live fencing) may be prepared separately as per Departmental Norms of fencing materials.

Cost of coffee plantation
Species – Coffea robusta
(Area- 1.0 Hectare, For the year -2013-2014)

1st Year Creation

1.	Cost of seedlings of Coffea robusta Total = 1685 Nos @ Rs. 8.00/No.....	Rs. 13,480.00
2.	Jungle clearance and land preparation including uprooting etc where necessary. Total = 100 Dls @ Rs. 152.00/Dl.....	Rs. 15,200.00
3.	Line marking and collection including making of stakes Total = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00
4.	Opening of pits of size 45cm x 45cm x 45cm Total = 85 Dls @ Rs. 152.00/Dl.....	Rs. 12,920.00
5.	Closing of pits, Total = 43 Dls @ Rs. 152.00/Dls.....	Rs. 6,536.00
6.	Providing supplying of seeds like Arahar, Crotalaria and Indigofera for temporary shade. Total = 5 Kg @ Rs. 170.00/Kg.....	Rs. 850.00
7.	Providing supplying of shade plants for permanent shade. Total = 100 Nos @ Rs. 10.00/No.....	Rs. 1000.00
8.	Cost of Rock Phosphate 20% @ 200gm/Pit for (1685+100) = 1785 Nos of pits – 357 Kg. @ Rs. 9.35/Kg.....	Rs. 3,337.95
9.	Construction of inspection path & drain Total = 10 Dls @ Rs. 152.00/Dl.....	Rs. 1,520.00
10.	Fencing :	
(a)	Providing supplying of barbed wire fencing of 12G x 2 ply x 4 points -7.5 cm apart in coils without bobbin in rolls of 201 Rm including carriage VAT 4% & ASIDC Commission 5%. Total = 1.4 Qtl @ Rs. 11683.00/Qtl.....	Rs. 16,356.20
(b)	Providing supplying of best quality U-staple of standard size (3,4&5 cm) including carriage up to work site, VAT 4% & ASIDC Commission 5%. Total = 7 Kg @ Rs. 118.10/Kg.....	Rs. 826.70
(c)	Providing supplying of live wood fencing posts mainly of Jia, Modar, Bot, Anhat, Jori, Simul etc of size-2.0m long, 20-25cm girth including carriage up to work site. Total = 130 Nos @ Rs. 38.00/No.....	Rs. 4,940.00
(d)	Providing supplying of Bholuka bamboo fencing posts of size 2.0m long, 10-15cm girth including carriage up to work site. Total = 130 Nos @ Rs. 30.00/No.....	Rs. 3,900.00
11.	Labour for pit digging, erection of fencing pots up to a depth of 45cm below ground level, fitting & fixing of barbed wire etc all complete as directed. Total = 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
12.	Raising of live fencing by planting cutting of Jatropha / Vitex etc of 100 to 120 cm long, placed at 15cm apart (centre to centre) in between live wood posts of size 180cm long, 10 to 15 cm dia driven at least 60cm below ground & 120cm above ground at 250cm apart tied with Jati bamboo kamies in three rows tied with GI wire. Total 400 Rm @ Rs. 33.00/Rm.....	Rs. 13,200.00

13.	Labour for planting of coffee seedlings including planting of shade plants. Total = 57 Dls @ Rs. 152.00/Dl.....	Rs. 8,664.00
14.	Sowing of seeds for temporary shade including soil working up to a depth of 20cm and with of 100cm. Total = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00
15.	Survey L.S. Cost.....	Rs. 120.00
16.	Insurance with a Nationalised Company L.S.....	Rs. 3,000.00
17.	Provision of signboard of size 3' x 5' with plain sheet, Iron frame & posts including fitting & fixing all complete at site. Total = 15 Sqft. @ Rs. 200.00/Sqft.....	Rs. 3,000.00

ABSTRACT

1.	Cost of creation with provision of barbed wire fencing along with live wood posts.	Rs. 95,526.85
2.	Cost of creation with provision of barbed wire fencing along with Bholuka bamboo fencing posts.	Rs. 94,486.85
3.	Cost of creation with provision with live fencing.....	Rs. 85,387.95

- Remarks :**
1. The norms excludes Item No. 17 of the cost of creation.
 2. Item No. 1 may be omitted if Departmental nursery existed.

Cost of coffee plantation
Species – Coffea robusta
(Area- 1.0 Hectare, For the year -2013-2014)

2nd Year Maintenance

1.	Cost of poly potted seedlings for casualty replacement (assuming 10% replacement of casualty). Total = 169 Nos @ Rs. 8.00/No.....	Rs. 1,352.00
2.(a)	1 st weeding, soil working and vacancy filling. Total 30 Dls @ Rs. 1520.00/Dl.....	Rs. 4,560.00
(b)	2 nd weeding & mulching Total 25 Dls @ Rs. 152.00/Dl.....	Rs. 3,800.00
(c)	3 rd weeding & mulching. Total = 25 Dls @ Rs. 152.00/Dl.....	Rs. 3,800.00
3.	Cover digging around plants Total = 60 Dls @ Rs. 152.00/Dl.....	Rs. 9,120.00
4.	Fertilizer application : (Coffee seedlings & shade plants)	
(a)	Material component : Fertilizer application in two split doses at prop 38:28:28 Urea @ 83gm, Rock phosphate 20% @ 140gm & MOP @ 63gm/ plant/year.	
(i)	Urea – 148 Kg @ Rs. 11.73/Kg	Rs. 1736.04
(ii)	RP 20%-250 Kg @ Rs. 9.35/Kg	Rs. 2337.50
(iii)	MOP-112 Kg @ Rs. 11.73/Kg	Rs. 1313.76
	Total	Rs. 5,387.30
(b)	Labour component Total = 52 Dls @ Rs. 152.00/Dl.....	Rs. 7,904.00
5.	Plant protection measures	
(a)	Cost of P.P. Chemicals L.S. Cost.....	Rs. 1,200.00
(b)	Labour for spraying, swabbing etc Total = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00
6.	Fire protection works i.e. opening of fire line and engagement of watcher Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
7.(a)	Repairing of barbed wire fencing including replacement of damaged fencing post by live wood posts (assuming 10% damage).. Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00
	U-staple L.S.- 1.0 Kg @ Rs. 118.1/Kg.	Rs. 118.10
	Labour 1 Dls @ Rs. 152.00/Dl	Rs. 152.00
	Total	Rs. 764.10
		Rs. 764.10
7.(b)	Repairing of barbed wire fencing including replacement of damaged post by Bholuka Bamboo fencing posts (assuming 50% replacement) . Bholuka bamboo posts Total = 65 Nos @ Rs. 30.00/No	Rs. 1,950.00
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30
	Labour 2.5 Dls @ Rs. 152.00/Dl	Rs. 380.00
	Total	Rs. 2,684.30

- 7(c) Repairing of live fencing including replacement of dead cutting of vitex/jatropha etc including damaged live wood posts with pruning of the live hedges (assuming 20% damage)
Total = 80 Rm @ Rs. 33.00/Rm..... Rs. 2,640.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 41,383.40
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 43,303.30
3.	For live fencing	Rs. 43,259.30

Remarks : 1. Item No. 1 may be omitted if there is Departmental nursery.

Cost of coffee plantation Species – Coffea robusta (Area- 1.0 Hectare, For the year -2013-2014)

3rd Year Maintenance

1. Cost of poly pot seedlings for casualty replacement (assuming 5% replacement of casualty).
Total = 84 Nos @ Rs. 8.00/No..... Rs. 672.00
2. Weeding, refilling, soil working, mulching, plant training etc.
 - (a) 1st weeding, and refilling.
Total 30 Dls @ Rs. 152.00/Dl..... Rs. 4,560.00
 - (b) 2nd weeding, soil working, desuckering, centering etc
Total 40 Dls @ Rs. 152.00/Dl..... Rs. 6,080.00
 - (c) 3rd weeding, desuckering & mulching.
Total = 40 Dls @ Rs. 152.00/Dl..... Rs. 6,080.00
3. Fertilizer application : (Coffee seedlings & seedling for shade)
 - (a) Material component : Fertilizer application in two split doses at prop 38:28:38 Urea @ 83gm, Rock phosphate 20% @ 140gm & MOP @ 63gm/ plant/year.
 - (i) Urea – 148 Kg @ Rs. 11.73/Kg Rs. 1736.04
 - (ii) RP 20%-250 Kg @ Rs. 9.35/Kg Rs. 2337.50
 - (iii) MOP-112 Kg @ Rs. 11.73/Kg Rs. 1313.76

Total Rs. 5387.30
 - (b) Labour component Total = 52 Dls @ Rs. 152.00/Dl... Rs. 7,904.00
4. Plant protection measures
 - (a) Cost of P.P. Chemicals L.S. Cost..... Rs. 1,200.00

(b)	Labour for spraying, swabbing etc Total = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00
5.	Fire protection works i.e. opening of fire line and engagement of watcher Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
6.(a)	Repairing of barbed wire fencing including replacemnet of damaged fencing post by live wood posts (assuming 10% damage).. Live wood posts = 13 Nos @ Rs. 38.00/No Rs. 494.00 U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg. Rs. 118.10 Labour 1 Dls @ Rs. 152.00/Dl Rs. 152.00 <hr style="width: 100px; margin-left: auto; margin-right: 0;"/> Total Rs. 764.10	Rs. 764.10
6.(b)	Repairing of barbed wire fencing including replacemnet of damaged post by Bholuka Bamboo fencing posts (assuming 75% replacement) . Bholuka bamboo posts Total = 97 Nos @ Rs. 30.00/No Rs. 2910.00 U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg. Rs. 354.30 Labour 4 Dls @ Rs. 152.00/Dl Rs. 608.00 <hr style="width: 100px; margin-left: auto; margin-right: 0;"/> Total Rs. 3,872.30	Rs. 3,872.30
6(c)	Repairing of live fencing including replacement of dead cutting /posts etc all complete including pruning etc where necessary (assuming 10% repair) Total = 40 rm @ Rs. 33.00/rm.....	Rs. 1,320.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 30,756.10
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 33,864.30
3.	For live fencing	Rs. 31,312.00

**Cost of coffee plantation
Species – Coffea robusta
(Area- 1.0 Hectare, For the year -2013-2014)**

4th Year Maintenance

1.	Weeding, vacancy filling, mulching, plant training etc.	
(a)	1 st weeding, soil working and vacancy filling Total 30 Dls @ Rs. 152.00/Dl.....	Rs. 4,560.00
(b)	2 nd weeding, soil working, desuckering, centering etc Total 40 Dls @ Rs. 152.00/Dl.....	Rs. 6,080.00

(c)	3 rd weeding , desuckering & mulching.		
	Total = 40 Dls @ Rs. 152.00/Dl.....		Rs. 6,080.00
2.(a)	Fertilizer application: Fertilizer application in two split doses at prop 38:28:38 Urea @ 83gm, Rock phosphate 20% @ 140gm & MOP @ 63gm/ plant/year.		
(i)	Urea – 140 Kg @ Rs. 11.73/Kg	Rs. 1642.20	
(ii)	RP 20%-236 Kg @ Rs. 9.35/Kg	Rs. 2206.60	
(iii)	MOP-106 Kg @ Rs. 11.73/Kg	Rs. 1243.38	
	Total	Rs. 5092.18	
			Rs. 5,092.18
2.(b)	Labour component Total = 50 Dls @ Rs. 152.00/Dl.....		Rs. 7,600.00
3.	Plant protection measures		
(a)	Cost of P.P. Chemicals L.S. Cost.....		Rs. 1,440.00
(b)	Labour for spraying, swabbing etc		
	Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
4.	Fire protection works i.e. opening of fire line and engagement of watcher		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
5.	Cost of poly pot seedlings for casualty replacement assuming 5% replacement.		
	Total = 84 Nos @ Rs. 8.00/No.....		Rs. 672.00
6.	Repairing of fencing :		
(a)	Barbed wire fencing with live wood posts (assuming 10% replacement of damage posts)		
	Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 1 Dls @ Rs. 152.00/Dl	Rs. 152.00	
	Total	Rs. 764.10	
			Rs. 764.10
6.(b)	Repairing of barbed wire fencing including replacement of damaged post by Bholuka Bamboo fencing posts (assuming 75% replacement) .		
	Bholuka bamboo posts		
	Total = 97 Nos @ Rs. 30.00/No	Rs. 2910.00	
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30	
	Labour 4 Dls @ Rs. 152.00/Dl	Rs. 608.00	
	Total	Rs. 3872.30	
			Rs. 3,872.30
6(c)	Repairing of live fencing including replacement of dead cutting /posts etc all complete including pruning etc where necessary (assuming 10% repair)		
	Total = 40 rm @ Rs. 33.00/rm.....		Rs. 1,320.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 35,784.28
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 38,892.48
3.	For live fencing	Rs. 36,340.18

Cost of coffee plantation
Species – Coffea robusta
(Area- 1.0 Hectare, For the year -2013-2014)

5th Year Maintenance

1.	Weeding, mulching, plant training etc.		
(a)	1 st weeding, soil working and desuckering		
	Total 30 Dls @ Rs. 152.00/Dl.....		Rs. 4,560.00
(b)	2 nd weeding, soil working, desuckering, centering etc		
	Total 40 Dls @ Rs. 152.00/Dl.....		Rs. 6,080.00
(c)	3 rd weeding, desuckering & mulching.		
	Total = 40 Dls @ Rs. 152.00/Dl.....		Rs. 6,080.00
2.(a)	Fertilizer application: Fertilizer application in two split doses at prop 40:30:40 Urea @ 87gm, Rock phosphate 20% @ 150gm & MOP @ 67gm/ plant/year.		
(i)	Urea – 147 Kg @ Rs. 11.73/Kg	Rs. 1724.31	
(ii)	RP 20%-253 Kg @ Rs. 9.35/Kg	Rs. 2365.55	
(iii)	MOP-113 Kg @ Rs. 11.73/Kg	Rs. 1325.49	
	Total	Rs. 5415.35	
	Say	Rs. 5415.35	Rs. 5,415.35
2.(b)	Labour component Total = 50 Dls @ Rs. 152.00/Dl...		Rs. 7,600.00
3.	Plant protection measures		
(a)	Cost of P.P. Chemicals L.S. Cost.....		Rs. 1,440.00
(b)	Labour for spraying, swabbing etc		
	Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
4.	Fire protection works i.e. opening of fire line and engagement of watcher		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
5.	Repairing of fencing :		
(a)	Barbed wire fencing with live wood fencing posts including replacement of damaged fencing posts where necessary (assuming 10% replacement)		
	Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 1 Dls @ Rs. 152.00/Dl	Rs. 152.00	
	Total	Rs. 764.10	
			Rs. 764.10
5.(b)	Repairing of barbed wire fencing including replacement of damaged post by Bholuka Bamboo fencing posts (assuming 75% replacement) .		
	Bholuka bamboo posts		
	Total = 97 Nos @ Rs. 30.00/No	Rs. 2910.00	
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30	
	Labour 4 Dls @ Rs. 152.00/Dl	Rs. 608.00	
	Total	Rs. 3872.30	
			Rs. 3,872.30
5(c)	Repairing of live fencing including pruning of live hedges binding etc if necessary.		
	Total = 12 Dls @ Rs. 152.00/Dl.....		Rs. 1,824.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 35,435.45
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 38,543.65
3.	For live fencing	Rs. 36,495.35

Cost of coffee plantation
Species – Coffea robusta
(Area- 1.0 Hectare, For the year -2013-2014)

6th Year Maintenance

1.	Weeding, desuckering, plant training etc.		
(a)	1 st weeding etc.		
	Total 25 Dls @ Rs. 152.00/Dl.....		Rs. 3,800.00
(b)	2 nd weeding etc		
	Total 30 Dls @ Rs. 152.00/Dl.....		Rs. 4,560.00
(c)	3 rd weeding etc.		
	Total = 30 Dls @ Rs. 152.00/Dl.....		Rs. 4,560.00
2.(a)	Fertilizer application: Fertilizer application in two split doses at prop 40:30:40 Urea @ 87gm, Rock phosphate 20% @ 150gm & MOP @ 67gm/ plant/year.		
(i)	Urea – 147 Kg @ Rs. 11.73/Kg	Rs. 1724.31	
(ii)	RP 20%-253 Kg @ Rs. 9.35/Kg	Rs. 2365.55	
(iii)	MOP-113 Kg @ Rs. 11.73/Kg	Rs. 1325.49	
	Total	Rs. 5415.35	
			Rs. 5,415.00
2.(b)	Labour component Total = 50 Dls @ Rs. 152.00/Dl...		Rs. 7,600.00
3.	Plant protection measures		
(a)	Cost of P.P. Chemicals L.S. Cost.....		Rs. 1,200.00
(b)	Labour for spraying, swabbing etc		
	Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
4.	Fire protection works i.e. opening of fire line and engagement of watcher		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
5.	Repairing of fencing :		
(a)	Barbed wire fencing with live wood fencing posts including replacement of damaged fencing posts where necessary (assuming 10% replacement of damage posts)		
	Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 1 Dls @ Rs. 152.00/Dl	Rs. 152.00	
	Total	Rs. 764.10	
			Rs. 764.10
5.(b)	Repairing of barbed wire fencing including replacemnet of damaged post by Bholuka Bamboo fencing posts		

(assuming 75% replacement).

Bholuka bamboo posts

Total = 97 Nos @ Rs. 30.00/No Rs. 2910.00

U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg. Rs. 354.30

Labour 4 Dls @ Rs. 152.00/Dl Rs. 608.00

Total Rs. 3872.30

Rs. 3,872.30

5(c) Repairing of live fencing including pruning etc
all complete as necessary.

Total = 12 Dls @ Rs. 152.00/Dl..... Rs. 1,824.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 31,394.45
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 34,503.65
3.	For live fencing	Rs. 32,455.35

Cost of coffee plantation Species – Coffea robusta (Area- 1.0 Hectare, For the year -2013-2014)

7th Year Onwards Maintenance

1. Same as 6th Year Maintenance (From Item No. 1 to 5 of 6th Year)

2. Harvesting & Processing

Total = 30 Dls @ Rs. 175.00/Dl..... Rs. 5,250.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 36,645.45
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 39,753.65
3.	For live fencing with Bholuka bamboo posts.	Rs. 37,705.35

Cost of coffee plantation Species – Coffea arabica

(Area- 1.0 Hectare, For the year -2013-2014)

1st Year Creation

1.	Cost of seedlings of Coffea arabica Total = 1922 Nos @ Rs. 8.00/No.....	Rs. 15,376.00
2.	Jungle clearance and land preparation including uprooting of stumps etc where necessary. Total = 100 Dls @ Rs. 152.00/Dl.....	Rs. 15,200.00
3.	Line marking and collection of stakes Total = 20 Dls @ Rs. 152.00/Dl.....	Rs. 3,040.00
4.	Opening of pits of size 45cm x 45cm x 45cm Total = 100 Dls @ Rs. 152.00/Dl.....	Rs. 15,200.00
5.	Closing of pits, including mixing of rock phosphate Total = 50 Dls @ Rs. 152.00/Dl.....	Rs. 7,600.00
6.	Providing supplying of seeds like Arahar, Crotalaria and Indigofera for temporary shade. Total = 5 Kg @ Rs. 170.00/Kg.....	Rs. 850.00
7.	Providing supplying of shade plants for permanent shade. Total = 100 Nos @ Rs. 10.00/No.....	Rs. 1,000.00
8.	Cost of Rock Phosphate 20% @ 200gm/Pit for (including shade plants) Total - 404 Kg. @ Rs. 9.35/Kg.....	Rs. 3,777.40
9.	Construction of inspection path & drain Total = 10 Dls @ Rs. 152.00/Dl.....	Rs. 1,520.00
10.	Fencing :	
(a)	Providing supplying of barbed wire fencing of 12G x 2 ply x 4 points -7.5 cm apart in coils without bobbin in rolls of 201 Rm including carriage, VAT 4% & ASIDC Commission 5%. Total = 1.4 Qtl @ Rs. 11,683.00/Qtl.....	Rs. 16,356.20
(b)	Providing supplying of best quality U-staple of standard size (3,4&5 cm) including carriage up to work site, VAT 4% & ASIDC Commission 5%. Total = 7 Kg @ Rs. 118.10/Kg.....	Rs. 826.70
(c)	Providing supplying of live wood fencing posts mainly of Jia, Modar, Bot, Anhat, Jori, Simul etc of size-2.0m long, 20-25cm girth including carriage up to work site. Total = 130 Nos @ Rs. 38.00/No.....	Rs. 4,940.00
(d)	Providing supplying of Bholuka bamboo fencing posts of size 2.0m long, 10-15cm girth including carriage up to work site. Total = 130 Nos @ Rs. 21.00/No.....	Rs. 3,900.00
11.	Labour for pit digging, erection of fencing pots up to a depth of 45cm below ground level, fitting & fixing of barbed wire etc all complete as directed. Total = 8 Dls @ Rs. 152.00/Dl.....	Rs. 1216.00
12.	Raising of live fencing by planting cutting of Jatropha / Vitex etc of 100 to 120 cm long, placed at 15cm apart (centre to centre) in between live wood posts of size 180cm long, 10 to 15 cm dia driven at least 60cm below ground & 120cm above ground at 250cm apart tied with Jati bamboo kamies in three rows tied with GI wire. Total 400 Rm @ Rs. 33.00/Rm.....	Rs. 13,200.00
13.	Labour for planting of coffee seedlings including planting of shade plants.	

	Total = 65 Dls @ Rs. 152.00/Dl.....	Rs. 9,880.00
14.	Sowing of seeds for temporary shade including soil working up to a depth of 20cm and width of 100cm. Total = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00
15.	Survey L.S. Cost.....	Rs. 120.00
16.	Insurance with a Nationalised Company L.S.....	Rs. 1,000.00
17.	Provision of signboard of size 3' x 5' with plain sheet, Iron frame & posts including fitting & fixing all complete at site. Total = 15 Sqft. @ Rs. 200.00/Sqft.....	Rs. 3,000.00

ABSTRACT

1.	Cost of creation with provision of barbed wire fencing along with live wood posts.	Rs. 103,182.30
2.	Cost of creation with provision of barbed wire fencing along with Bholuka bamboo fencing posts.	Rs. 102,142.30
3.	Cost of creation with live fencing	Rs. 93,043.40

- Remarks :**
1. The abstract of norms excludes Item No. 17 which may be added after compiling the total cost for a particular area to be created.
 2. Item No. 1 may be omitted if there is Departmental nursery.

Cost of coffee plantation Species - Coffea arabica (Area- 1.0 Hectare, For the year -2013-2014)

2nd Year Maintenance

1.	Cost of poly pot seedlings for vacancy filling (assuming 10% replacement of casualty). Total = 192 Nos @ Rs. 8.00/No.....	Rs. 1,536.00
2.(a)	1 st weeding, soil working including refilling Total 30 Dls @ Rs. 152.00/Dl.....	Rs. 4,560.00
(b)	2 nd weeding & mulching Total 25 Dls @ Rs. 152.00/Dl.....	Rs. 3,800.00
(c)	3 rd weeding & mulching. Total = 25 Dls @ Rs. 152.00/Dl.....	Rs. 3,800.00
3.	Cover digging around plants Total = 80 Dls @ Rs. 152.00/Dl.....	Rs. 12,160.00
4.	Fertilizer application :	
(a)	Material component : Fertilizer application in two split doses of NPK in proportion of 20:10:20 Urea @ 43gm, Rock phosphate 20% @ 50gm & MOP @ 33gm/ plant/year.	

(i)	Urea – 87 Kg @ Rs. 11.73/Kg	Rs. 1020.51	
(ii)	RP 20%-101 Kg @ Rs. 9.35/Kg	Rs. 944.35	
(iii)	MOP-68 Kg @ Rs. 11.73/Kg	Rs. 797.64	
	Total	Rs. 2762.50	Rs. 2,762.50
(b)	Labour component Total = 60 Dls @ Rs. 152.00/Dl...		Rs. 9,120.00
5.	Plant protection measures		
(a)	Cost of P.P. Chemicals L.S. Cost.....		Rs. 1,200.00
(b)	Labour for spraying, swabbing etc		
	Total = 20 Dls @ Rs. 152.00/Dl.....		Rs. 3,040.00
6.	Fire protection works i.e. opening of fire line and engagement of watcher		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
7.(a)	Repairing of barbed wire fencing including replacemnet of damaged fencing post by live wood posts (assuming 10% damage)..		
	Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 1 Dl @ Rs. 152.00/Dl	Rs. 152.00	
	Total	Rs. 764.10	
			Rs. 764.10
7.(b)	Repairing of barbed wire fencing including replacemnet of damaged post by Bholuka Bamboo fencing posts (assuming 50% replacement) .		
	Bholuka bamboo posts		
	Total = 65 Nos @ Rs. 30.00/No	Rs. 1950.00	
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30	
	Labour 2.5 Dls @ Rs. 152.00/Dl	Rs. 380.00	
	Total	Rs. 2684.30	
			Rs. 2,684.30
7(c)	Repairing of live fencing including replacementof dead cutting of vitex/jatropha etc including damaged live wood posts with pruning of the live hedges		
	Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 43,958.60
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 45,878.80
3.	For live fencing	Rs. 45,474.50

Cost of coffee plantation Species – Coffea arabica (Area- 1.0 Hectare, For the year -2013-2014)

3rd Year Maintenance

1.	Cost of poly pot seedlings for casualty replacement (assuming 5% replacement of casualty). Total = 100 Nos @ Rs. 8.00/No.....	Rs. 800.00
2.(a)	1 st weeding, soil working including refilling Total 30 Dls @ Rs. 152.00/Dl.....	Rs. 4,560.00
(b)	2 nd weeding, soil working, desuckring & mulching Total 40 Dls @ Rs. 152.00/Dl.....	Rs. 6,080.00
(c)	3 rd weeding, desuckering & mulching. Total = 40 Dls @ Rs. 152.00/Dl.....	Rs. 6,080.00
3.	Fertilizer application :	
(a)	Material component : Fertilizer application in two split doses at ratio 20:10:20 Urea @ 43gm, Rock phosphate 20% @ 50gm & MOP @ 33gm / plant/year.	
(i)	Urea – 87 Kg @ Rs. 11.73/Kg	Rs. 1020.51
(ii)	RP 20%-101 Kg @ Rs. 9.35/Kg	Rs. 944.35
(iii)	MOP-68 Kg @ Rs. 11.73/Kg	Rs. 797.64
	Total	Rs. 2,762.50
(b)	Labour component Total = 60 Dls @ Rs. 152.00/Dl...	Rs. 9,120.00
4.	Plant protection measures	
(a)	Cost of P.P. Chemicals L.S. Cost.....	Rs. 1,200.00
(b)	Labour for spraying, swabbing etc Total = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00
5.	Fire protection works i.e. opening of fire line and engagement of watcher Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
6.(a)	Repairing of barbed wire fencing including replacement of damaged fencing post by live wood posts (assuming 10% damage)..	
	Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10
	Labour 1 Dls @ Rs. 152.00/Dl	Rs. 152.00
	Total	Rs. 764.10
		Rs. 764.10
6.(b)	Repairing of barbed wire fencing including replacement of damaged post by Bholuka Bamboo fencing posts (assuming 75% replacement) . Bholuka bamboo posts Total = 97 Nos @ Rs. 30.00/No	Rs. 2910.00
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30
	Labour 4 Dls @ Rs. 152.00/Dl	Rs. 608.00
	Total	Rs. 3872.30
		Rs. 3,872.30
6.(c)	Repairing of live fencing including replacement of dead hedges & posts including pruning etc where necessary (assuming 10% repair) Total = 40 rm @ Rs. 33.00/rm.....	Rs. 1,320.00

ABSTRACT



1.	For barbed wire fencing with live wood posts.	Rs. 34,862.60
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 37,970.80
3.	For live fencing	Rs. 35,418.50

Cost of coffee plantation
Species – Coffea arabica
(Area- 1.0 Hectare, For the year -2013-2014)

4th Year Maintenance

1.	weeding, plant training, vacancy filling & mulching etc.	
(a)	1 st weeding, soil working & vacancy filling. Total 30 Dls @ Rs. 152.00/Dl.....	Rs. 4,560.00
(b)	2 nd weeding, soil working, desuckering & centering Total 40 Dls @ Rs. 152.00/Dl.....	Rs. 6,080.00
(c)	3 rd weeding, desuckering & mulching. Total = 40 Dls @ Rs. 152.00/Dl.....	Rs. 6,080.00
2.	Fertilizer application :	
(a)	Material component : Fertilizer application in two split doses at ratio 25:15:25 Urea @ 54gm, Rock phosphate 20% @ 75gm & MOP @ 42gm/ plant/year.	
(i)	Urea – 109 Kg @ Rs. 11.73/Kg	Rs. 1278.57
(ii)	RP 20%-152 Kg @ Rs. 9.35/Kg	Rs. 1421.20
(iii)	MOP-85 Kg @ Rs. 11.73/Kg	Rs. 997.05
	Total	Rs. 3696.82
	Say	Rs. 3,696.82
(b)	Labour component Total = 60 Dls @ Rs. 152.00/Dl...	Rs. 9,120.00
3.	Plant protection measures	
(a)	Cost of P.P. Chemicals L.S. Cost.....	Rs. 1,200.00
(b)	Labour for spraying, swabbing etc Total = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,400.00
4.	Fire protection works i.e. opening of fire line and engagement of watcher Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,216.00
5.	Cost of seedlings for vacancy filling (assuming 5% casuality replacement) Total = 100 Nos @ Rs. 8.00/No.....	Rs. 800.00
6.(a)	Repairing of barbed wire fencing including replacemnet of damaged fencing post by live wood posts (assuming 10% damage).. Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10
	Labour 1 Dl @ Rs. 152.00/Dl	Rs. 152.00
	Total	Rs. 764.10
		Rs. 764.10
6.(b)	Repairing of barbed wire fencing including replacemnet of damaged post by Bholuka Bamboo fencing posts	

(assuming 75% replacement) .

Bholuka bamboo posts

Total = 97 Nos @ Rs. 30.00/No Rs. 2910.10

U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg. Rs. 354.30

Labour 4 Dls @ Rs. 152.00/Dl Rs. 608.00

Total Rs. 3872.30

Rs. 3,872.30

- 6.(c) Repairing of live fencing including replacement of dead Hedges & posts including pruning etc where necessary (assuming 10% repair)

Total = 40 rm @ Rs. 33.00/rm.....

Rs. 1,320.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 35,916.92
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 39,025.12
3.	For live fencing	Rs. 36,472.82

Cost of coffee plantation Species - Coffea arabica (Area- 1.0 Hectare, For the year -2013-2014)

5th Year Maintenance

1. Weeding, plant training, vacancy filling & mulching etc.
(a) 1st weeding, soil working, desuckering & centering.

Total 30 Dls @ Rs. 152.00/Dl.....

Rs. 4,560.00

(b)	2 nd weeding, soil working, desuckering & centering Total 40 Dls @ Rs. 152.00/Dl.....	Rs. 6,080.00
(c)	3 rd weeding, desuckering, centering & mulching. Total = 40 Dls @ Rs. 152.00/Dl.....	Rs. 6,080.00
2.	Fertilizer application :	
(a)	Material component : Fertilizer application in two split doses at ratio 25:15:25 Urea @ 54gm, Rock phosphate 20% @ 75gm & MOP @ 42gm/ plant/year.	
(i)	Urea – 109 Kg @ Rs. 11.73/Kg	Rs. 1278.57
(ii)	RP 20%-152 Kg @ Rs. 9.35/Kg	Rs. 1421.20
(iii)	MOP-85 Kg @ Rs. 11.73/Kg	Rs. 997.05
	Total	Rs. 3696.82
		Rs. 3,696.82
(b)	Labour component Total = 60 Dls @ Rs. 152.00/Dl.....	Rs. 9,120.00
3.	Plant protection measures	
(a)	Cost of P.P. Chemicals L.S.	Rs. 1,200.00
(b)	Labour for spraying, swabbing etc Total = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00
4.	Fire protection works i.e. opening of fire line and engagement of watcher Total 8 Dls @ Rs. 152.00/Dl.....	Rs. 1,280.00
5.(a)	Repairing of barbed wire fencing including replacemnet of damaged fencing post by live wood posts (assuming 10% damage).. Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10
	Labour 1 Dl @ Rs. 152.00/Dl	Rs. 152.00
	Total	Rs. 764.10
		Rs. 764.10
5.(b)	Repairing of barbed wire fencing including replacemnet of damaged post by Bholuka Bamboo fencing posts (assuming 75% replacement) . Bholuka bamboo posts Total = 97 Nos @ Rs. 30.00/No	Rs. 2910.00
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30
	Labour 4 Dls @ Rs. 152.00/Dl	Rs. 608.00
	Total	Rs. 3872.30
		Rs. 3,872.30
5.(c)	Repairing of live fencing including replacementof dead cutting of vitex/jatropha etc including damaged live wood posts with pruning of the live hedges Total = 12 Dls @ Rs. 152.00/Dl.....	Rs. 1,824.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 35,060.92
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 38,169.12
3.	For live fencing	Rs. 36,120.82

**Cost of coffee plantation
Species – Coffea arabica
(Area- 1.0 Hectare, For the year -2013-2014)**

6th Year Maintenance

1.	Weeding, desuckering, centering etc.		
(a)	1 st weeding etc.		
	Total 25 Dls @ Rs. 152.00/Dl.....		Rs. 3,800.00
(b)	2 nd weeding etc.		
	Total 30 Dls @ Rs. 152.00/Dl.....		Rs. 4,560.00
(c)	3 rd weeding etc.		
	Total = 30 Dls @ Rs. 152.00/Dl.....		Rs. 4,560.00
2.	Fertilizer application :		
(a)	Material component : Fertilizer application in two split doses at ratio 40:30:40 Urea @ 87gm, Rock phosphate 20% @ 150gm & MOP @ 67gm/ plant/year.		
(i)	Urea – 167 Kg @ Rs. 11.73/Kg	Rs. 1958.91	
(ii)	RP 20%-288 Kg @ Rs. 9.35/Kg	Rs. 2692.80	
(iii)	MOP-128 Kg @ Rs. 11.73/Kg	Rs. 1501.44	
	Total	Rs. 6153.15	
			Rs. 6,153.15
(b)	Labour component Total = 60 Dls @ Rs. 152.00/Dl...		Rs. 9,120.00
3.	Plant protection measures		
(a)	Cost of P.P. Chemicals L.S.		Rs. 1,200.00
(b)	Labour for spraying, swabbing etc		
	Total = 15 Dls @ Rs. 152.00/Dl.....		Rs. 2,280.00
4.	Fire protection works i.e. opening of fire line and engagement of watcher		
	Total 8 Dls @ Rs. 152.00/Dl.....		Rs. 1,216.00
5.(a)	Repairing of barbed wire fencing including replacemnet of damaged fencing posts by live wood posts (assuming 10% damage)..		
	Live wood posts = 13 Nos @ Rs. 38.00/No	Rs. 494.00	
	U-staple L.S.- 1.0 Kg @ Rs. 118.10/Kg.	Rs. 118.10	
	Labour 1 Dl @ Rs. 152.00/Dl	Rs. 152.00	
	Total	Rs. 764.10	
			Rs. 545.00
5.(b)	Repairing of barbed wire fencing including replacemnet of damaged post by Bholuka Bamboo fencing posts (assuming 75% replacement) .		
	Bholuka bamboo posts		
	Total = 97 Nos @ Rs. 30.00/No	Rs. 2910.00	
	U-staple L.S.- 3.0 Kg @ Rs. 118.10/Kg.	Rs. 354.30	

Labour 4 Dls @ Rs. 152.00/Dl

Rs. 608.00
Total Rs. 3872.30

Rs. 3,872.30

- 5.(c) Repairing of live fencing including replacement of dead cutting of vitex/jatropha etc including damaged live wood posts with pruning of the live hedges

Total = 12 Dls @ Rs. 152.00/Dl.....

Rs. 1,824.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 33,653.25
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 36,761.45
3.	For live fencing	Rs. 34,713.15

Cost of coffee plantation Species – Coffea arabica (Area- 1.0 Hectare, For the year -2013-2014)

7th Year Onwards Maintenance

1. Same as 6th Year Maintenance (From Item No. 1 to 5 of 6th Year)
- (a) For barbed wire fencing with live wood posts. Rs. 33,653.25
- (b) For barbed wire fencing with Bholuka bamboo posts. .. Rs. 36,761.45
- (c) For live fencing
2. Harvesting & Processing
- Total = 30 Dls @ Rs. 175.00/Dl..... Rs. 5,250.00

ABSTRACT

1.	For barbed wire fencing with live wood posts.	Rs. 38,903.25
2.	For barbed wire fencing with Bholuka bamboo posts. ..	Rs. 42,011.45
3.	For live fencing	Rs. 39,963.15

Approved by

(R.K. Doley)

Director

Soil Conservation, Department Assam,
Pannyagar Bhawan, Guwahati-05

Committee for Revision of Departmental Norms

Scutinized by

(J.C. Gogoi)

Chairman & Joint Director of
Soil Conservation,
(Head Quarter) S.C. Directorate,
Guwahati-05

(B.K. Bhattacharjya)

Member

&

Divisional Soil Conservation
Officer (Engineering), Uzan
Bazar, Guwahati-01

(P. Dutta)

Member

&

Divisional Soil Conservation
Officer, Hamren Soil
Conservation Division,
Hamren

(P. Saikia)

Member Secretary

&

I/C Joint Director of Soil
Conservation, Lower Assam
Circle, Guwahati

(D. Gogoi)

Member

&

Assistant Soil Conservation
Officer, S.C. Directorate,
Guwahati-05

(G. Kalita)

Member

&

Soil Conservation Overseer
O/O the Jt. DSC (RVP)
Guwahati-01

(E)

Cost of Cultivation of Citronella / Ha of Cultivated Area for the year (2013-14)

1st year Creation, Maintenance of Harvesting :

<u>Item No.</u>	<u>Description of work/Rate</u>	<u>Amount</u>
Item No. 1.	Preliminary works/Land preparation, site cleaning, soil working, tilling, discing etc. Total = 25 Dls @ Rs. 152.00/Dl.....	Rs. 3,800.00
Item No. 2.	Live fencing covering the area, 4 x 100 Rm = 400 Rm. (Jetropha, Vitex, Ipomea etc)	

	@ Rs. 33.00/Rm.....	Rs. 13,200.00
Item No. 3.	Planting materials at a spacing of 0.90m x 0.90m, requirement = 13200 Nos + 5% mortality and gap filling etc. Total = 13860 Nos @ Rs. 1.00/slip.....	Rs. 13,860.00
Item No. 4.	Manures-5 trolley (FYM) @ Rs. 600.00/Trolley.....	Rs. 3,000.00
Item No. 5.	Chemical fertilizer, (N, P205, K20) @ 200:80:75 Kg/Ha/Yr. @ Rs. 11.75/Kg (MOP)	Rs. 3,973.75
Item No. 6.	Weeding and Irrigation (considering availability of Irrigation source and 2 times of weeding) 2 x 10 Dls + 10 Dls = 30 Dls @ Rs. 152.00/Dl.....	Rs. 4,560.00
Item No. 7.	Harvesting of Citronella leaves (3 harvest after 3 month of planting in the 1 st year) 3 x 5 Dls = 15 Dls @ Rs. 152.00/Dl.....	Rs. 2,280.00
		/
		Total Rs. 44,673.75
		Say Rs. 44,700.00

(Rupees Forty Four Thousand Seven Hundred) only.

2nd, 3rd & 4th year Maintenance & Harvesting :

Item No. 1.	Manures-5 trolley (FYM) @ Rs. 600.00/trolley.....	Rs. 3,000.00
Item No. 2.	Chemical fertilizer, (N, P205, K20) @ 200:80:75 Kg/Ha/Yr. @ Rs. 11.73/ Kg (urea), Rs. 9.35/ Kg (RP) @ Rs. 11.73/Kg (MOP)	Rs. 3,973.75
Item No. 3.	Weeding and Irrigation (considering availability of Irrigation sources and two lines of weeding) 2 x 10 Dls + 10 Dls = 40 Dls @ Rs. 152.00/Dl.....	Rs. 6,080.00
Item No. 4.	Harvesting of citronella leaves (4 harvesting at 3 months intervals) 4 x 5 Dls = 20 Dls @ Rs. 152.00/Dl.....	Rs. 3,040.00
		Total Rs. 16,093.75
		Say Rs. 16,100.00

(Rupees Sixteen Thousand One Hundred) only.

ABSTRACT

1.	1 st year creation, maintenance & harvesting	= Rs. 44,700.00
2.	2 nd year creation, maintenance & harvesting	= Rs. 16,100.00
3.	3 rd year creation, maintenance & harvesting	= Rs. 16,100.00
4.	4 th year creation, maintenance & harvesting	= Rs. 16,100.00
		<u>Rs. 93,000.00</u>

This norms excludes the cost of distillation of the leaves.

Approved by

(R.K. Doley)

Director

Soil Conservation, Department Assam,
Pannyagar Bhawan, Guwahati-05

Committee for Revision of Departmental Norms

Scutinized by

(J.C. Gogoi)

Chairman & Joint Director of
Soil Conservation,
(Head Quarter) S.C. Directorate,
Guwahati-05

(B.K. Bhattacharjya)

Member

&

Divisional Soil Conservation
Officer (Engineering), Uzan
Bazar, Guwahati-01

(P. Dutta)

Member

&

Divisional Soil Conservation
Officer, Hamren Soil
Conservation Division,
Hamren

(P. Saikia)

Member Secretary
&

I/C Joint Director of Soil
Conservation, Lower Assam
Circle, Guwahati

(D. Gogoi)

Member

&

Assistant Soil Conservation
Officer, S.C. Directorate,
Guwahati-05

(G. Kalita)

Member

&

Soil Conservation Overseer
O/O the Jt. DSC (RVP)
Guwahati-01

MODEL ESTIMATE

Name of work : **Construction of Camphut**
Rate : **Schedule of Rate followed Assam PWD (Bld) 2013-14**

Item No. 1. Site clearance including uprooting if necessary and construction of approach road 3 mandays @ Rs. 152.00/unit..... Rs. 456.00

Item No. 2. Construction of temporary shed with 300mm high plinth and floor, bhaluka bamboo post driving at least 750mm under ground, height above plinth 2400mm wattle wall and mud plastered and white wash 2 (two) coats, 100mm thick thatch roof, double mat doors and windows etc complete as directed.

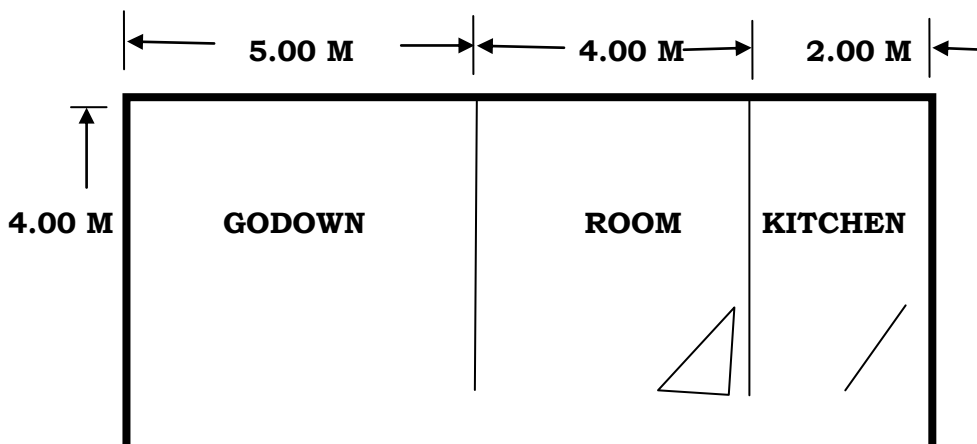
With Jati bamboo Kami frame:
 Main camphut 9.00m x 4.00m = 36.00 m²
 Kitchen 2 .00 x 4.00m = 8.00 m²
 Front Veranda 11.00m x 1.50m = 16.50 m²
 Total = 60.50 m²

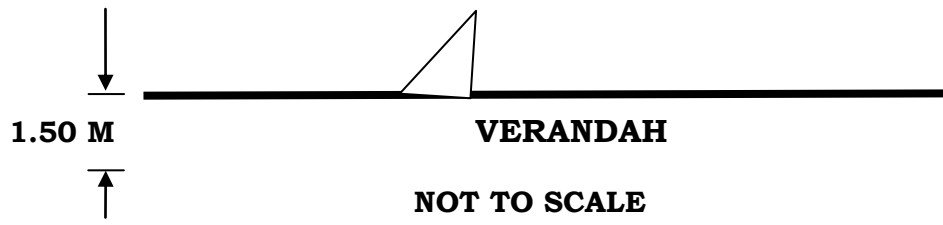
@ Rs. 585.91/ Rs. 35,448.00
 = Rs. 527.46/m² Total Rs. 35,904.00
 Say Rs. 35,900.00

(Rupees thirty five thousand nine hundred) only.

- Remarks :**
1. The dimension of the camp hut may be increased or decreased subject to its necessity.
 2. Subject to its necessity, the provision of camp hut may be made available in the proposed scheme itself.
 3. Camp hut should be constructed at the site which has already ben allotted to the department by the concerning Revenue Authority.

CUMP HUT





**STANDARD NORMS FOR VARIOUS ENGINEERING WORKS OF SOIL
CONSERVATION DEPARTMENT, ASSAM, DURING 2013-14**

(G) 1. CONTOUR BUNDING

Unit : Per Hectare of Land
 Land Slope : 0 to 5%
 (As per APWD (R,B & C) Schedule of rates for 2013-14)

Item No. 1. Cost of survey & leveling including carriage of instruments etc. Total = 7 Dls @ Rs. 152.00/Dl... Rs. 1064.00

Item No. 2. Earth work in excavation in soil by manual means 3/3.1/(301)(b) in roadway soil for core trenching.
 Volume = 0.25m x 0.20m x 100m = 5.00 m³
 @ Rs. 67.00/m³..... Rs. 335.00

Item No. 3. Earth work in core of embankment by head load etc. 17/41(a)
 Volume of earth work
 = 0.25m x 0.25m x 100m = 6.25 m³
 = $\frac{(0.85m + 0.25m) \times 0.45m \times 100m}{2}$ = 24.75 m³
 Total = 31.00 m³
 @ Rs. 135.00/m³..... Rs. 4185.00

Item No. 4. Earth work by head load in filling embankment 17/40 (II) in layers not exceeding 20cm thick etc. in ordinary/basti land etc.
 Volume = $\frac{(0.50m + 2.00m)}{2} \times 0.80m \times 100m$ = 24.75 m³
 = 75.25 m³
 @ Rs. 84.00/m³..... Rs. 6,095.00

Item No. 5. Turfing the side slope with perennial grass sod 3/3.22(307) of the bund etc for slope area on both sides, area = 1.13m x 100m x 2 = 226 m²
 @ Rs. 25.00/m²..... Rs. 5,650.00

Item No. 6. Site clearance etc 3 Dls @ Rs. 152.00/Dl..... Rs. 456.00

Item No. 7. Signboard, other publicities etc L.S..... Rs. 1,800.00
 Total Rs. 19,585.00
 Contingency (1% approx.)..... Rs. 196.00
 Grand Total Rs. 19,781.00
 Say Rs. 19,700.00

Cost of contour bunding excluding the cost of arrangement for disposal of surplus water is Rs. 19,700.00 (Rupees twelve thousand) only.

- Notes :
- (i) Surplus arrangement for disposal of excess runoff if needed will be estimated separately.
 - (ii) Critical length of bund is 100m/ha
 - (iii) Cost of sign board / documentation etc should be estimated separately for the entire project work.

(G) 2. BENCH TERRACING

LEVEL BENCH TERRACE FOR HILL AREAS

Specification :

1. Level Bench Terracing
2. Land slope considering average of 12% to 15% (S)
3. Better Riser (1:1)
4. Average soil depth = 0.60m
5. Depth of cut, d = $0.7 \times 0.60 = 0.42\text{m}$
6. Width of Terrace, $W = \frac{200 d}{S} = \frac{200 \times 0.42\text{m}}{15} = 5.60\text{m}$
7. Vertical Interval, $VI = \frac{W \times S}{100-S} = \frac{5.60 \times 15}{100-15} = 0.98\text{m}$
8. Horizontal interval, $HI = W + VI = 5.60\text{m} + 0.98\text{m} = 6.58\text{m}$

9. Shoulder Bund (Usual Practice), d = 0.30m
t/w = 0.15m
s/slope = 1:1
b/w = 0.75m
10. Length of terrace per hectare, $L = \frac{10,000}{HI} \text{ m}^2$
 $= \frac{10,000}{6.58} = 1520.00\text{m}$
11. Volume of earth work/ha = $\frac{100 \times W \times S}{8} = \frac{100 \times 6.58 \times 15}{8} \text{ m}^3$
 $= 1233.75 \text{ m}^3$
- 12 (a) Riser better area for grass seed sowing (1:1)
 $= L \times VI \times \sqrt{1^2 + 1^2} = 1520 \times 0.98 \times \sqrt{2} = 2107 \text{ m}^2$
- (b) Top and side of shoulder bund
 $= L \times (0.42 + 0.15 + 0.42) \text{ m}^2$
 $= 1520 \times 0.99 \text{ m}^2 = 1505 \text{ m}^2$
Total area = $(2107 + 1505) \text{ m}^2 = 3612 \text{ m}^2$

DETAIL ESTIMATES

Unit : 1.0 Hectare
(As per APWD Schedule of Rates for R, B & C 2007-08)

(A) For Barren Jhum Land :

- Item No. 1.** Earth work in excavation in benches (half cut and half fill) including spreading, removing of earth dressing etc completed.

Volume of earth work / hectare = 1233.75 m³
 @ Rs. 46.00/m³..... Rs. 56,752.00

Item No. 2. Earth work in filling shoulder bund for the terraces.

17/40(II) Volume of earth work = $\frac{(0.15 + 0.75)}{2} \times 0.30 \times 1520 \text{ m}^3$
 = 205.20 m³
 @ Rs. 81.00/m³..... Rs. 16,621.00

Item No. 3. Providing grass cover by sowing grass seeds (mimosa pudica etc) in river slope of benches and shoulder bund.

Area = 3612 m² (As per specification Item No. 12)
 @ Rs. 1.00 m² (L.S.)..... Rs. 3,612.00
 Total Rs. 1,02,894.00

(i) Adding 3% as enhancement for terrace outlet wherever required, surveying, leveling and other unseen expenditure etc. Rs. 3,087.00
 Grand Total Rs. 1,05,981.00
 Say Rs. 1,05,900.00

(B) For Areas (Lands) with jungle & bamboo clumps Item No. 1 to 3 of (A) for Barren land = Rs. 1,05,900.00

Item No. 4. Cleaning grass and removal of rubbish up to a distance of 50m out side the periphery of the area,
 @ Rs. 8978.00/ha..... Rs. 8,978.00
 Total Rs. 1,14,878.00
 Say Rs. 1,14,800.00

Abstract of Norms for Bench Terracing :

Unit : 1.0 Hectare
 Land slope : 15% (average)
 Average terrace width : 6.58m
 Better riser : 1:1
 Length of terrace/ha : 1520.00m
 Shoulder bund (Usual practice), depth = 0.30m
 Top width = 0.15m
 S/slope = 1:1
 Bottom width = 0.75m

(i) **Bench Terracing for Barren Lands :**
 Earth work by half cut half fill in bench for 1.0 ha of land with shoulder bundh, including grass seed sowing in better riser and in shoulder bund and other contingency for terrace outlet, surveying, leveling etc. ... Rs. 1,05,900.00

(ii) Bench Terracing for lands with grass jungle rubbish etc up to a distance of 50m outside the periphery of the area (other specifications are same)..... Rs. 1,14,800.00

(G) 3. LAND RECLAMATION / DEVELOPMENT BY WAY OF CONSTRUCTION OF DRAINAGE CHANNEL .

Considering a standard channel dimensions with 1.00 m² c/s area to drain out 0.75m depth of water in clay soil having drainage co-efficient of 5 cm (average) for a length of 100 Rm/ hectare (As per APWD (R & B) Schedule of Rates 2013-14)

Item No. 1. Construction of unlined surface drain of everage cross sectional area 0.4 sqm. in soil to specified lines, grades, levels and dimensions to the requirement. Excavated materials to be used as marginal embankment equally on both sides.

3.24/309

Volume of earth work / hectare/100rm = 1.0 m² x 100m = 100 m³
By manual means for a cross section area of

0.4 Sqm./rm length = Rs. 36.00

Rate for 1.0 m³ = Rs. $\frac{36.00}{0.4}$ = Rs. 90.00

Therefore, @ Rs. 90.00/ m³ for 100 m³..... Rs. 9,000.00

Item No. 2. Furnishing and laying of the live sods of perennial turf forming grass on embankment slope, verges or other locations shown on the drawing or as directed by the engineer including preparation of ground, fetching of rods and watering etc.

3.22/307

For shoulder bunds :
Volume of earth /100 rm of shoulder bund = $\frac{100}{2}$ m³
= 50 m³

Considering ht of the s/bund = 0.40m
and top width = 0.85m
at 1:1 slope, slope length = 0.56m
Turving slope area of the shoulder bund,
Total area = 0.56m x 100m x 4 sides
= 224 m²

@ Rs. 25.00/m²..... Rs. 5,600.00

Item No. 3. Site clearances etc 3 Dls @ Rs. 152.00/Dl..... Rs. 456.00

Item No. 4. Surveying, Levelling etc including carriage of survey equipment 7 Dls.

	@ Rs. 152.00/Dl.....	Rs. 1064.00
Item No. 5.	Signboard, other publicities etc L.S.....	Rs. 1,800.00
	Total	Rs. 17,920.00
	Contingency (1% approx.).....	Rs. 179.00
	Grand Total	Rs. 18,099.00
	Say	Rs.18,000.00

Cost per hectare of land development by way of chennelisation / W.D. project is Rs. 18,000.00 (Rupees twelve thousand) only.

(G) 4. LAND DEVELOPMENT WORK BY CONSTRUCTION OF EARTHEN EMBANKMENT WITH CORE WALLING (CONCRETE) / WITHOUT CORE WALLING

Top width = 1.70m
 Height (with free board) = 1.00m
 Side slope = 1:1
 Bottom width = 3.70m
 Cross section area = 2.70 m²
 Critical length = 100m
 (As per APWD Schedule of Rates for 2013-14)

Item No. 1. Earth work for excavation of core trenching 3/3.1(301)(b) as per APWD specification.

$$= \frac{(0.075\text{m} + 0.10\text{m})}{2} \times 0.20\text{m} \times 100\text{m} = 1.75 \text{ m}^3$$

@ Rs. 67.00/m³..... Rs. 117.00

Item No. 2. PCC 1:3:6 nominal mix in foundation with crushed 12/12.4(2100) stone aggregate of 40mm and as per APWD specification, for core trenching and walling.

$$\text{Volume} = 1.75 \text{ m}^3 + \frac{(0.075 + 0.10)}{2} \times 0.80 \times 100 \text{ m}^3$$

$$= 8.75 \text{ m}^3$$

@ Rs. 4,977.00/m³..... Rs. 43,549.00

Item No. 3. Earth work by head load in filling embankment 17.47 in layers not exceeding 20cm thick etc as per APWD specification in ordinary / bastiland etc.

(i) volume of earth work (with core wall)
 = 2.70 x 100 m³ - 7.00 m³ = 263.00 m³
 @ Rs. 81.00/m³..... Rs. 21,303.00

(ii) volume of earth work (without core wall)
 = 2.70 x 100 m³ = 270.00 m³
 @ Rs. 81.00/m³..... Rs. 21,870.00

Item No. 4. Turfing the side slope with perennial grass sod 3.22 (307) of the bund etc for the slope area both the sides.

$$\text{Area} = 2 \times 1.41\text{m} \times 100\text{m} = 282.00 \text{ m}^2$$

@ Rs. 25.00/m²..... Rs. 7,050.00

Item No. 5.	Cost of survey, leveling, including carriage of instruments etc. Total = 7 Dls @ Rs. 152.00/Dl.....	Rs. 1,064.00
Item No. 6.	Site clearance etc 3 Dls @ Rs. 152.00/Dl.....	Rs. 456.00
Item No. 7.	Signboard, Publicity etc L.S.....	Rs. 1,800.00

ABSTRACT

(I)	Cost with trenching & walling / 100 rm	= Rs. 75,339.00
	Adding Contingency (1% approx)	= Rs. 753.00
	<hr/>	
	Total	= Rs. 76,092.00
	Say	= Rs. 76,000.00

Therefore, cost / rm = Rs. 760.00

(II)	Cost without trenching & walling	= Rs. 75,906.00
	Adding Contingency (1% approx)	= Rs. 759.00
	<hr/>	
	Total	= Rs. 75,906.00
	Say	= Rs. 75,900.00

Therefore, cost / rm = Rs. 759.00

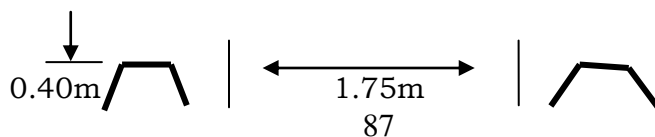
- N.B. : (i) As the calculated volume as per section measurement is 270.00 m³ (without core walling) is the required compact volume to compensate shrinkage allowance against earth work in filling in bund some additional volume of earth work to be done while execution to the tune of 14.3% of compact volume, so that a shrinkage allowance of 12.5% as specified in the schedule item may be deducted from the measured volume of earth work in filling to arrive for a compact volume at specified / designed dimension.
- (ii) Cost of signboard/documentation etc should be estimated separately for the entire project work.
- (iii) This norms is only for preparation of schemes/ budget etc.For individual project necessary plan and estimates should be prepared as per APWD (R, B & C) Schedule of rates.

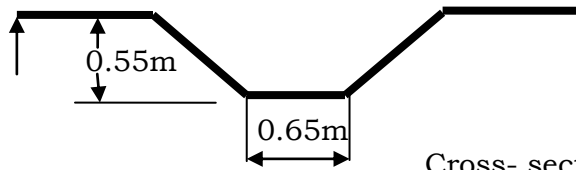
Example :

- (i) Compact volume as per estimate is 270.00 m³
- (ii) Volume of work to be executed (while execution)
270 m³ + 270 m³ x 14.3% = 308.61 m³
- (iii) Deduction in volume chart/MB to be done being shrinkage allowance
308.61 m³ x 12.5% = 38.58 m³
- (iv) Total compact volume to be paid = (308.61 m³ - 38.58 m³)
= 270.03 m³ Say = 270.00 m³

(G) 5. Water Distribution Channel :

Estimates : (As per APWD (R & B) Schedule of rates 2013-14) Considering critical length = 125m /ha





Cross- section of the Channel

Cross section area of the design channel = 0.66 m²

NOT TO SCALE

Item No. 1.	Site clearance etc 3 Dls @ Rs. 152.00/Dl.....	Rs. 456.00
Item No. 2. 3.24/309	<p>Construction of unlined surface drain of average cross-sectional area 0.40 Sqm. in soil to specified lines, grades, levels and dimensions to the requirement. Exvacated materials to be used as marginal embankment equally on both sides.</p> <p>Volume of earth work/hectare/100rm = 0.66 x 125m³ = 82.50 m³</p> <p>By manual means for a C/S area of 0.40 Sqm /rm length = Rs. 36.00</p> <p>Rate for 1.0 m³ = $\frac{\text{Rs. } 36.00}{0.40}$ = Rs. 90.00</p> <p>Therefore, @ Rs. 90.00/m³ for 82.50 m³.....</p>	Rs. 7,425.00
Item No. 3. 3.22/307	<p>Furnishing and laying of the live sods of perennial turf forming grass on embankment slope, verges or other locations shown on the drawing including preparation of ground, fetching, watering etc.</p> <p>For Shoulder Bund :</p> <p>Volume of earth/100m of shoulder bund = $\frac{82.50}{2}$ m³ = 41.25 m³</p> <p>Considering height of the shoulder bund = 0.40m and top width = 0.50m</p> <p>at 1:1 slope, slope length = $\sqrt{(0.40)^2 + (0.40)^2}$ = 0.57</p> <p>Turfing the slope area of the shoulder bund</p> <p>Total area = 0.57 x 125m x 4 sides = 285.00 m²</p> <p>@ Rs. 25.00/m².....</p>	Rs. 7,125.00
Item No. 4.	<p>Surveying, leveling including carriage of instrument etc for 7 Dls</p> <p>@ Rs. 152.00/Dl.....</p>	Rs. 1,064.00
Item No. 5.	<p>Signboard, publicity etc L.S.....</p>	Rs. 1,800.00
	Total	Rs. 17,870.00
	Adding contingency 1% approx.....	Rs. 179.00
	Total	Rs. 18,049.00

Say Rs. 18,000.00

Therefore, cost per hectare water distribution for critical length of channel 125 m is Rs. 18,000.00.

(Rupees Eighteen thousand) only.

(G) 6. GULLY CONTROL WORKS :

Construction of RCC Drop Spillway, Guide Bundh of 100 RM on both side of the structure, Boulder Pitching U/S and D/S of structure including a temporary shed for storage of materials and temporary approach road for carriage of materials to works site etc.

Per Sqm. of Head Wall works (m²) Rs. 35,500.00

and per Hect of benefited area Rs. 12,000.00

(G) 7. River Training Works :

(Unit : Per RM of bank to be protected)

(A) Construction of boulder spur including earth work in excavation, collection & carriage of mansize boulder, supplying, fitting & fixing of hexagonal wire including dumping of boulder etc.

(considering stream width = 30.00m and stream height= 3.00m)

Rate per RM of bank to be protected Rs. 2,900.00

(B) Construction of boulder pitching with revetment including earth work in bank easing, collection, carriage, fitting, fixing etc of H/wire net & boulder

(considering bank height = 3.00m and base length of pitching = 3.00m)

Rate per RM of bank to be protected Rs. 6,250.00

(C) Protection of River Bank : Erection of live vegetative post 180cm long, 10cm dia driven 60cm below ground & 120cm above ground at 200cm apart, planting of Jatropha Vitex/Ipomea cutting of 60cm to 90cm long in between the live post at 15cm apart tied with Jati bamboo kamies in two rows with wire /cane/tangal etc.

Cost per RM..... Rs. 33.00

N.B. : This norms is only for preparation of schemes/budget. For individual project necessary detail estimate should be prepared as per APWD (R,B & C) schedule of rates).

H. (1) : NORMS FOR RECONNAISSANCE SOIL SURVEY

- | | | |
|---------------------|--|--------------|
| 1. | <p>Soil Profile : Vertical cut from the surface down to the hard rock in a successive characteristic layers as three dimensional unit for complete appraisal of soil.
 One profile per 1000 hect. of land pit size
 1.80m x 1.80m x 1.50m = 4.86 CuM
 (As per previous norms)
 @ Rs. 54.00/CuM S/R for 2013-14RB & C) rate.....</p> | Rs. 262.44 |
| 2. | <p>Augar Boring : Augar Boring for studying the effective layers of soil randomwise to enable study of variations in the surface soil texture and soil depth to be noted and demarcated depending up on the physiographic characteristics
 10 mandays/1000 hect. @ Rs. 152.00/unit.....</p> | Rs. 1520.00 |
| 3. | <p>Polythene bags : For keeping/pressing the soil samples Collected during studying soil profiles and Augar boring @ 12 Nos/profile and five nos/Augar boring to the 500 nos approx.
 @ Rs. 0.75/bag.....</p> | Rs. 375.00 |
| 4. | <p>Cloth bags : For carrying the soil samples to the laboratory @ 1 cloth bag of size 12 x 10 for three soil sample approx. 167 Nos
 @ Rs. 17.00/bag.....</p> | Rs. 2839.00 |
| 5. | <p>Profile sheet : Preparation for recording soil characteristics & external features along with soil site description etc for every soil sample collected. L.S.....</p> | Rs. 700.00 |
| 6. | <p>Equipments Chemicals etc. : For purchase of excavating tools, measuring tape, thread etc and chemicals dilute acids, water, universal indicator, litmus paper etc for testing carbonates and soil reactions in the field. L.S.....</p> | Rs. 300.00 |
| 7. | <p>Socio-Economic Data collection L.S.....</p> | Rs. 250.00 |
| 8. | <p>Cariage of soil sample from field to the laboratory L.S..</p> | Rs. 300.00 |
| Total for 100 hect. | | Rs. 6,546.00 |

Therefore, rate per Hect. = $\frac{\text{Rs. } 6546.44}{1000}$ = Rs. 6.55

(Say), Rs. 7.00

(H) 2. : NORMS FOR DETAILED SOIL SURVEY PER HECTARE OF LAND

1. **Soil Profile :** Vertical cut from the surface down to the hard rock (parent materials) in a successive characteristic layers as three dimensional unit for complete appraisal of @ one profile per 100 hect. pit size 1.80m x 1.80m x 1.50m = 4.86 CuM (As per previous norms)
@ Rs. 54.00/Cum (APWD S/R for 2013-14 RB & C.....) Rs. 262.44

2. **Augar Boring :** Augar Boring for studying the effective layers of soil randomwise to enable variations in the surface texture and soil depth to be noted and demarcated at every 250-500m apart i.e. 20 Nos of augar boring per 100 hect of land.
=2 DLS/100 hect. @ Rs. 152.00/unit..... Rs. 304.00

3. **Polythene bags :** For keeping/pressing the soil samples Collected during studying soil profiles and Augar boring @ 12 Nos/profile and five nos/Augar boring.
Say 100 bags @ Rs. 0.75/bag.....Rs. 75.00

4. **Profile sheet :** Preparation of profile sheet for recording soil characteristics & external features along with soil site description etc for every soil sample collected. L.S..... Rs. 150.00

5. **Cloth bags :** For carrying the poly bagged soil samples to the laboratory @ 1 cloth bag for 3 soil sample 12' x 10' size
35 numbers @ Rs. 17.00/bag..... Rs. 595.00

6. **Equipments Chemicals etc. :** For buying, digging / excavating tools like pickaxe, shovel, spade, knife, measuring tape, needle, thread etc and chemical such as dilute acids, water, universal indicator, litmus paper etc for testing carbonates, soil reactions in the field. L.S..... Rs. 300.00

7. Collection of Socio-Economic Data L.S..... Rs. 250.00

8. Carriage of collection soil samples from field to the

laboratory L.S..... Rs. 300.00
Total for 1000 Hect. = Rs. 2236.44

Therefore, rate per Hect. = $\frac{2236.44}{100}$

=Rs. 22.36

(Say), Rs.

#####

WORKING SHEET

1. LAND RECLAMATION / DEVELOPMENT BY WAY OF CONSTRUCTION OF DRAINAGE CHANNEL

Drainage channels are required to safe disposal of excess runoff water from the water logged area in agricultural field. This process of disposal of excess water develops the agricultural land and increase the land productivity also.

Let us consider for a standard case, where average /optimum depth of water to be drain out by a channel is 0.75m from an area of 100 ha in clay soil having draiage co-efficient of 5 cm (average)

Also considering a channel gradient of 0.4%. The total quantity of water to be drain in 24 hrs. i.e. discharge through the channel,

$$\begin{aligned} Q &= \frac{100 \times 10000 \times 5}{100 \times 60 \times 60 \times 24} \text{ m}^3/\text{s} \\ &= 0.58 \text{ m}^3/\text{s} \end{aligned}$$

Considering S/slope = 1:1 (Clay soil)

$$b = 2d \tan \frac{\phi}{2} = 2 \times 0.75 \times \tan 45^\circ/2 = 0.62\text{m}$$

$$\begin{aligned} \text{Top width} &= b + 2d \\ &= 0.62 + 2 \times 0.75 \\ &= 2.12\text{m} \end{aligned}$$

$$\begin{aligned} \text{Cross sectional area, } a &= \frac{(0.62 + 2.12) \times 0.72}{2} \text{ m}^2 \\ &= 1.02 \text{ m}^2 \\ \text{Say} &= 1.00 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \text{Length of side, } s &= \sqrt{(0.75)^2 + (0.75)^2} \\ &= 1.06 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Wetted perimeter, } p &= 2 \times s + b \\ &= 2 \times 1.06 + 0.62 \\ &= 2.74\text{m} \end{aligned}$$

$$\text{Hydraulic RADIUS, } R = \frac{a}{P} = \frac{1}{2.74} = 0.36\text{m}$$

Velocity through the channel by mennings formula

$$\begin{aligned} V &= \frac{1}{n} R^{2/3} S^{1/2} \quad (\text{manning } n=0.04) \\ &= \frac{1}{0.04} \times (0.36)^{2/3} \times (0.004)^{1/2} \\ &= 0.81 \text{ m/s} \end{aligned}$$

Permissible velocity in clay soil is 1.2 m/s. Therefore, the calculated velocity of 0.81 m/s is safe against scouring.

Now, discharge through the design ditch,

$$Q = 1.00 \text{ m}^2 \times 0.81 \text{ m/s} \\ = 0.81 \text{ m}^3/\text{s} \text{ which is greater than required discharge of } 0.58 \text{ m}^3/\text{s}.$$

2. Land Development work by Construction of Earthen Embankment with Core Walling (concrete) /without Core Walling.

Generally land development works in the department is taken up to prevent entry of flood water to the agricultural field and silt along with to prevent erosion of agricultural land adjustance to the river bank or to guide surface runoff to a safe disposal point. Uniform distribution of water in cultivable land is also another purpose of it. To meet up the above purposes and for the point of conservation of soil and water and the stability of the embankment, core wall should be introduced, which is a centrally provided fairly impervious wall in the embankment, aspecially in the meandering portion of the river. It checks the flow of water in the section of the dam. Generally the core wall extends from the ground level up to High Flood Level (HFL). The core wall may be constructed of various materials, such as puddle clay, masonry or concrete.

Now, for a general condition considering height of water up to HFL = 0.85m

$$\text{Freeboard} = \frac{15}{100} \times 0.85\text{m} = 0.13\text{m}$$

Total height = 0.98m Say = 1.00m
(Considering approx. 5% consolidation)

$$\text{Top width} = \frac{H}{5} + 1.5 = \frac{1.00}{5} + 1.5 = 1.70\text{m}$$

Considering side slope of 1:1

Bottom width = 3.70m

$$\text{Therefore, cross section area} = \frac{(1.70 + 3.70)\text{m} \times 1.00\text{m}}{2} = 2.70 \text{ m}^2$$

Considering core trench of bottom width = 0.075m

Top width = 0.10m

Depth = 0.20m

Thus, top width of core wall = 0.075m

With height up to HFL i.e. = 1.00m

3. Contour Bunding (with core embankment of hard soil) :

The determination of cross-section of the bund base on selection of the vertical or horizontal interval is the prime criteria of designing of a contour bund. In the absence of better information, the spacing of bunds may be based on standard recommendations as per the suitability of local condition.

The height of bund should provide sufficient storage above the bund to handle the exected runoff. The proper capacity of bund for an area can be obtained by estimating the maximum amount of runoff to be handled by the bund.

In our condition for a general field slope of 0 to 5%, it is usual practice to provide 30cm design depth of impounding, 30cm depth of flow over the outlet and 20cm as free board, which makes the overall height of 80cm with top width of 0.50 and bottom width of 2.1m, side slope work out to 1:1. The cross section works out to be 1.00 Sqm. approximately.

Now, for a critical length of 100m per ha of area, the volume of earth work works to be 100 m³/ha

4. Boulder Spur :

Let as considered a standard with of stream optimum width as per as the Soil Conseravation works concern) = 30.00m
 Depth of the stream = 3.00m
 Therefore, length of the Spur = $\frac{1}{3}$ of the stream width = $\frac{1}{3} \times 30.00m$ = 10.00m
 Height of the Spur = 70% of depth of the Spur = $\frac{70}{100} \times 3.0m$ = 2.10m
 Considering base height of the Spur = 0.90m
 (Below ground level)
 Total height of the Spur = 2.10m + 0.90m = 3.00m
 Top width of the Spur = 70% of the height of Spur = $\frac{70}{100} \times 2.10m = 1.47m$ Say = 1.50m
 Therefore, bottom width (at 0.5 :1 slope) = (1.05 + 1.50+1.05)m = 3.60m
 Therefore base width = 4.60m (0.50m in each side)

Model Detail Estimate for Boulder Spur (As per APWD Schedule 2007-08)

Length of Spur	= 10.00m	
Height of Spur (above bed level)	= 2.10m	
Depth of foundation	= 0.90m	
Item No. 1.	Site clearance L.S.....	Rs. 500.00
Item No. 2.	Earth work in foundation bed portion Bed portion = 4.60m x 0.90m x 10.0m = 41.40 m ³ @ Rs. 47.00/m ³	Rs. 1,946.00
Item No. 3.	Cost of boulder (As per schedule rate) Providing & laying of boulder etc.	
1.	For base = 0.90m x 4.60m x 8.0m	= 33.12 m ³
2.	For Spur, with nose	
(i)	2.10m x $\frac{(1.50+3.60)}{2}$ x 8.00m	= 42.84 m ³
(ii)	$\frac{(3.60 + 1.80)}{2}m \times (2.10+1.00)m \times 2.0m$	= 8.37 m ³

$$3. \quad \text{Nose cushion} = \frac{2.00\text{m} \times 2.00\text{m} \times 4.60\text{m}}{2} = \frac{18.40 \text{ m}^3}{2} = 9.20 \text{ m}^3$$

@ Rs. 1,029.00/m³..... Rs. 1,05,709.00

Item No.4. Supplying, fitting, fixing with H/wire net

Quantity :

1. For base

(i) $0.90\text{m} \times 8.00\text{m} \times 2 \text{ sides} = 14.40 \text{ m}^2$

(ii) $4.60\text{m} \times 8.00\text{m} \times 2 \text{ sides} = 73.60 \text{ m}^2$

(iii) $0.90\text{m} \times 4.60\text{m} \times 2 \text{ sides} = 8.28 \text{ m}^2$

2. Spur

(i) $2.96\text{m} \times 8.00\text{m} \times 2 \text{ sides} = 47.36 \text{ m}^2$

(ii) $1.50\text{m} \times 8.00\text{m} \times 1 \text{ side} = 12.00 \text{ m}^2$

(iii) $\frac{(1.50 + 3.60) \times 2.10\text{m} \times 2 \text{ sides}}{2} = 10.71 \text{ m}^2$

3. Nose

(i) $\frac{(3.60 + 1.80) \times 2.0\text{m} \times 1 \text{ No}}{2} = 5.40 \text{ m}^2$

(ii) $1.80\text{m} \times 1.00\text{m} \times 1 \text{ No} = 1.80 \text{ m}^2$

(iii) $3.60\text{m} \times 2.10\text{m} \times 1 \text{ No} = 7.56 \text{ m}^2$

(iv) $\frac{(2.53 + 1.41) \times 2.0\text{m} \times 2 \text{ sides}}{2} = 7.88 \text{ m}^2$

(v) $2.28\text{m} \times 3.60\text{m} \times 1 \text{ No} = 8.20 \text{ m}^2$

4. Nose Cushion :

(i) $2.0\text{m} \times 4.60\text{m} \times 2 \text{ sides} = 18.40 \text{ m}^2$

(ii) $4.60\text{m} \times 2.00\text{m} \times 2 \text{ sides} = 18.40 \text{ m}^2$

(iii) $2.0\text{m} \times 2.0\text{m} \times 2 \text{ sides} = 8.00 \text{ m}^2$

Total = 241.99 m²

Adding 10% extra for lapping = (241.99 + 24.199) m²

= 266.189 m²

Rate Analysis of Hexagonal wire :

Rate for 1 (one) roll of 15.24 rm x 3.66 rm size of Hexagonal wire netting made of 8 SWG triply twisted 152mm mesh is Rs. 6350/- (average rate of ASIDC for all district w.e.f. 03.07.2008).

Adding 8% VAT, Total = Rs. 6350.00 + Rs. 508.00 = 6858.00

Therefore, rate per Sqm. = $\frac{\text{Rs. } 6858.00}{15.24 \text{ rm} \times 3.66\text{rm}} = \text{Rs. } 122.95/\text{m}^2$

Carring cost @ Rs. 500/- roll to work site = $\frac{\text{Rs. } 500.00}{15.24 \times 3.66 \text{ m}^2} = \text{Rs. } \frac{8.96}{\text{m}^2}$
= Rs. 131.91 m²

@ Rs. 131.91/m²..... Rs. 35,112.00

Item No. 5. Fitting, Fixing of H/wire net for the spur, nose,cushion and base.

L.S. = 3 Dls @ Rs. 97.00/Dl..... Rs. 291.00

1 Dl as black smith Rs. 150.00

Item No. 6. Planting of soil conservation species in
 between spurs, area = 60m x 3.00m = 180.00 m²
 @ Rs. 5.00/m²..... Rs. 900.00
Total Rs. 1,44,608.00

Now considering straight reach where spacing between
 the spurs varies 4 to 6 times the projected length
 of the spur, the average length of spur that can project
 stream bank is = $\frac{(4+6)}{2} \times 10\text{m} = 50.00\text{m}$

Therefore, cost of spur per unit stream length is = Rs. $\frac{1,44,608.00}{50}$
 = Rs. 2892.16
 Say = Rs. 2,900.00/m length

5. Boulder Pitching with Rivetment :

Depth of the stream = 3.00m
 Therefore bank slope length = (at 45° optimum slope of pitching)
 Therefore pitching length = $\sqrt{3^2 + 3^2}$
 = $\sqrt{18} = 4.24$ Say = 4.25m

Pitching thickness = 45 cm
 Considering the Rivetment dimension = 1.00m x 1.00m

Model Estimate for Boulder Pitching with Rivetment :
 (As per APWD Schedule (2007-08)
 (Unit per RM of River Bank)

Item No. 1. Earth work in bank easing, volume
 = $\frac{1}{2} \times 3.00 \times 3.00 \times 1.00 \text{ m}^3 = 4.50 \text{ m}^3$
 @ Rs. 47.00/m³..... Rs. 212.00

Item No. 2. Providing & laying of boulder etc
 (i) For pitching = 4.25m x 0.45m x 1.00m = 1.912 m³
 (ii) For Rivetment = 1.00m x 1.00m x 1.00m = 1.00 m³
= 2.912 m³
 @ Rs. 1029.00/m³..... Rs. 2,996.00

Item No. 3. Supplying, fitting, fixing with H/wire net
 Quantity for pitching,
 = 4.25m x 1.00m x 2 sides = 8.50 m²
 = 4.25m x 0.45m x 2 sides = 3.82 m²
 = 0.45m x 1.00m x 2 sides = 0.90 m²
 For Rivetment,
 = 1.00m x 1.00m x 2 sides = 2.00 m²
 = 1.00m x 1.00m x 2 sides = 2.00 m²
 = 1.00m x 1.00m x 2 sides = 2.00 m²

Total = 19.22 m²
 Adding 10% for lapping = 19.22 m² x 1.1 = 21.142 m²
 @ Rs. 132.91/m² (Analysis as in boulder spur)... Rs. 2,810.00

Item No.4. Fitting, fixing of H/wire net for the revetment and pitching.
 Total = 1 D1 @ Rs. 97.00/D1..... Rs. 97.00
 1 D1 as black smith @ Rs. 150.00Rs. 150.00
Rs. 247.00 Rs. 247.00
Total Rs. 6,265.00
Say Rs. 6,250.00

6. Model Design and Estimate for a Water Distribution Channel (For a critical length of 125m per hectare of area)

Design :

Considering Principal crop as paddy water requirement = 120 cm
 Consider this irrigation required is 45 days. i.e. irrigation required in 24 hrs.
 $\frac{120}{45} = 2.66\text{cm/day}$

Discharge required for command area of 1.0 hectare,

$$Q = \frac{1 \times 10,000 \times 2.66}{100 \times 60 \times 60 \times 24} = 0.003 \text{ m}^3/\text{S}$$

Considering depth of the channel = 0.60m and side slope = 1:1 (Sandy clay soil) and field gradient of 1.0m in 2500m (0-3% slope area)

$$\begin{aligned} b &= 2d \tan \frac{\phi}{2} = 2 \times 0.60 \times \tan \frac{45}{2} = 0.50\text{m} \\ \text{Top width} &= b + 2d \\ &= 0.50 + 2 \times 0.60 \\ &= 1.70\text{m} \end{aligned}$$

$$\begin{aligned} \text{Cross section area, } a &= \frac{(0.50 + 1.70) \times 0.60}{2} \text{ m}^2 \\ &= 0.66 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} \text{Length of side, } s &= \sqrt{(0.60)^2 + (0.60)^2} \\ &= 0.84\text{m} \end{aligned}$$

$$\begin{aligned} \text{Wetted perimeter, } p &= 2 \times s + b \\ &= 2 \times 0.84 + 0.50 \\ &= 2.18\text{m} \end{aligned}$$

$$\text{Hydraulic Radius, } R = \frac{a}{P} = \frac{0.66}{2.18} = 0.30$$

Velocity through the channel,

$$\begin{aligned} V &= \frac{1}{2} R^{2/3} S^{1/2} \\ &= \frac{1}{2} \times (0.30)^{2/3} \times (1)^{1/2} \end{aligned}$$

$$0.04 \quad 2500 \\ = 0.22 \text{ m/s}$$

i.e. within permissible velocity in clay soil against scouring.
Now, discharge through the design channel.

$$Q = 0.66 \text{ m}^2 \times 0.22 \text{ m/s} \\ = 0.145 \text{ m}^3/\text{s} \quad > \text{than required discharge}$$

7. GULLY CONTROL / DROP SPILLWAY

Re-presentative Field Data :

1. Drainage area of Micro Watershed = 70 ha
2. Drop / Average depth of the Gully/Juri = 2.00m
3. Agricultural land with average land slope = 0-3%
4. Maximum length of travel L = 1100m and difference of elevation at outlet from origin = 7.00m

Using Rational Formula,
Peak Discharge, $Q = \frac{CIA}{360}$(A)

Intensity of Rainfall,
 $I = \frac{KT^a}{(t+b)^n}$ cm/hr.....(B)

Where, T = Recurrance interval
t = time of concentration in hrs; k,a,b,n are parameters, may be considered from Intensity-return period relationship table for 30 years of recurrence interval.

$$k = 7.60 \\ a = 0.1557 \\ b = 0.55 \\ n = 0.9401$$

Time of concentration
 $t = 0.01947 \times (K)^{0.77}$ minutes, where

$$k = \frac{\sqrt{L^3}}{H} = \frac{\sqrt{(1100)^3}}{7} = 13789$$

$$\text{Therefore, } t = 0.01947 \times (13789)^{0.77} \\ = 30.0 \text{ minutes} \\ = \frac{30}{60} \text{ Hr} = \frac{1}{2} \text{ hr.}$$

$$\text{Thus, } I = \frac{7.60 \times (30)^{0.1557}}{(\frac{1}{2} + 0.55)^{0.9401}} \\ = 12.40 \text{ cm /hr} = 124 \text{ mm/hr.}$$

$$\text{Therefore, } Q = \frac{CIA}{360}, \quad C = 0.50 \text{ (runoff co-efficient)} \\ = \frac{0.50 \times 124 \times 70}{360} \text{ m}^3/\text{s} \\ = 12.05 \text{ m}^3/\text{s}$$

Adding 20% for peak discharge,

$$\begin{aligned}
 Q \text{ max} &= 12.05 \text{ m}^3/\text{s} + 12.05 \times \frac{20}{100} \text{ m}^3/\text{s} \\
 &= 14.46 \text{ m}^3/\text{s}
 \end{aligned}$$

**Model Design of Water Harvesting Structure cum Water Distribution Network
(Uttar Amloga Area, Balipara Development Block, Sonitpur District)**

(A) Re-representative Field Data :

1. Drainage area of watershed = 70 ha
2. Average width of the juri = 7.0m
3. Average depth of the juri = 2.0m
4. Agricultural land with average land slope = 0-3%
5. Surface velocity of the gully /juri water = 1.1 m/s

(B) Hydrological Design :

Cross section area of the gully /juri, $A = 7.0 \times 2.0 \text{ m}^2$
 $= 14.00 \text{ m}^2$

Mean velocity = $1.0 \times 0.86 \text{ m/s}$ (Average velocity = 0.86 m/s)
 $= 0.86 \text{ m/s}$

Therefore, discharge, $Q = A \times V \text{ m}^3/\text{s}$
 $= 14 \times 0.86 \text{ m}^3/\text{s}$
 $= 12.04 \text{ m}^3/\text{s}$

Increasing 20% for peak flood season, $Q \text{ max} = 12.04 \text{ m}^3/\text{s} + 12.04 \times \frac{20}{100} \text{ m}^3/\text{s}$
 $= 14.40 \text{ m}^3/\text{s}$

(C) Hydranlic Design :

Let us considered,

$F =$ Net drop (drop from crest to top of transverse sill)
 $= 2.0\text{m}$

$h =$ Depth of wire (including freeboard)
 $= 1.20\text{m}$

Therefore, $h/F = \frac{1.20}{2} = 0.60$

i.e. within 0.50 to 0.75

Now, $L =$ Crest length = $Q \frac{(1.10 + 0.01 F)}{1.71 \times h^{3/2}}$
 $= 14.45 \frac{(1.10 + 0.01 \times 2.0)}{1.71 \times (1.20)^{3/2}}$
 $= 7.20\text{m}$, i.e. $L = 7.20\text{m}$

(D) Structural Design :

The dimensions of the components of the structure are determined as below.

- (i) Minimum head wall extension,
 $E = (3h + 0.60)$ or $1.50 F$, whichever is greater
 $= (3 \times 1.20 + 0.60)\text{m}$ or $1.50 \times 2.0\text{m}$
 $= 4.20\text{m}$ or 3.00m
 Adopt, $E = 4.00\text{m}$

- (ii) Length of apron or basin, $L_B = F (2.28 \frac{h}{F} + 0.54)m$
 $= 2 (2.28 \times \frac{1.20}{2} + 0.54)m$
 $= 3.816m$
Adopt $L_B = 4.00m$
- (iii) Height of Transverse sill, $T_s = \frac{h}{3} = \frac{1.20}{3} m = 0.40m$
- (iv) Height of Longitudinal sill, $L_s = \frac{h}{4} = \frac{1.20}{4} m = 0.30m$
- (v) Height of wing wall and side wall at junction, $J = 2h$ or $(F+h+T_s-(L_B + 0.10)/2)$
Whichever is greater
 $= 2 \times 1.20$ or $(2+1.20+0.40- (4.00+0.10)/2)$
 $= 2.40m$ or $1.55m$ Adopt, $J = 2.40m$
- (vi) Slopping portion length of side wall, $M = 2 (F + 1.33h-J)$
 $= 2 (2.0 + 1.33 \times 1.20-2.40)$
 $= 2.392m$, Adopt, $M = 2.50m$
- (vii) Straight portion length of side wall, $K = L_B - M$
 $= (4.00-2.50)m = 1.50m$
- (viii) Length of wing wall, $W = 2.83 (J-T_s-0.30)$
 $= 2.83 (2-0.40-0.30)m$
 $= 3.679m$, Adopt, $E = 4.00m$
- (ix) Free end height of wing wall, $W_F = (T_s + 0.30)m$
 $= (0.40 + 0.30)m$
 $= 0.70m$
- (x) Depth of Toe wall & cut off wall, $d = 1.50 \times NSD$
 $= 1.50 \times 0.473 \times (Q/5)^{1/3}$
 $Q = \text{discharge}$
 $f = \text{silt factor}$
 $= 1.50 \times 0.473 \times \frac{(14.45)^{1/3}}{1.20}$
 $= 1.612m$ Adopt, $d = 1.65m$

(E) Structural Details :

- (i) All walls, i.e. head wall, H.W. Extension, side wall, wing wall, cutoff & toe wall, transverse & longitudinal sill, buttress etc are taken 30cm thick.
- (ii) Apron & heal slab thickness is taken as 35cm.
- (iii) Re-reinforcement in all walls and apron are taken as 12mm \varnothing rods placed at 25cm C/C and 16mm \varnothing bar at buttress.
- (iv) Total reinforcement approximately considered as 60 Kg per cubic meter of RCC work.

$L = 7.20m$	$M = 2.50m$
$E = 4.00m$	$K = 1.50m$
$L_B = 4.00m$	$W = 4.00m$
$T_s = 0.40m$	$W_F = 0.70m$
$L_s = 0.30m$	$d = 1.65m$
$J = 2.40m$	

Details estimate for RCC Water Harvesting Structure / Drop Spillway

(As per APWD (R & B) Schedule of rates 2007-08)

Item No. 1. Site preparation including debris, clearance, uprooting etc if any L.S..... Rs. 2,500.00

Item No. 2. Earth work in excavation in ordinary soil for foundation of structures as per drawing and technical specification including de-watering of water etc.

3.13/304

(i) Above GBL = $\frac{(17.5+15.5)m}{2} \times 10.00m \times 2.15m$
= 354.75 m³

Deducting gully section volume, = (-) 10.0m x 7.0m x 2.15m
= (-) 150.50 m³
Total = 204.25 m³

(A) Manual means (depth up to 3.0m) (without dewatering) @ Rs. 99.00/m³..... Rs. 20,220.00

(ii) Below GBL

(i) H/W & H/W extension, W/W & Toe wall
= $2 \times \frac{(17.5+15.5)m}{2} \times 1.50m \times 2.25m^3$
= 111.38 m³

(ii) Apron, = 7.80 x 0.95 x 4.00 m³ = 29.64 m³
= 141.02 m³

(A) Manual means (depth up to 3.0m) (with dewatering) @ Rs. 108.00/m³..... Rs. 15,230.00

Item No. 3. Collection cost of stone chips machine broken materials for silling in H/W, H/W extension, W/W, T/W etc and apron before RCC work.

(i) H/W & H/W extension, W/W & Toe wall,
 $2 \times 15.20 \times 0.75 \times 0.20 = 4.56 \text{ m}^3$

(ii) Apron = $7.80 \times 4.00 \times 0.20 = \underline{6.24 \text{ m}^3}$
= 10.80 m³

For 40mm chips, @ Rs. 451.00/m³..... Rs. 4,871.00

Item No. 4. RCC work in sub structure complete as per drawing and technical specification and steel shuttering form work.

13.5 (A)
1500,1700
&2200

Volume of RCC works :

(a) Head wall & cut-off wall $7.20m \times 4.05m \times 0.30m = 8.75 \text{ m}^3$

(b) H/W extension = $2 \times 4.00m \times 5.25m \times 0.30m = 12.60 \text{ m}^3$

(c) Side wall = $2 \times 3.95m \times 1.50m \times 0.30m$
+ $2 \times \frac{(3.95 + 2.75)m}{2} \times 2.50m \times 0.30m = 8.58 \text{ m}^3$

(d) Apron = $7.20m \times 4.00m \times 0.35m = 10.08 \text{ m}^3$

(e) T. wall & Transverse sill = $2.05m \times 7.20m \times 0.30m = 4.43 \text{ m}^3$

(f) Wing wall = $2 \times \frac{(4.05 + 2.35)m}{2} \times 4.0m \times 0.30m = 7.68 \text{ m}^3$

(g) Butress = 1 x $\frac{(0.30 + 1.50)m}{2}$ x 2.40m x 0.30m	= 0.65 m ³
(h) Sill beam = 1 x 0.30m x 0.30m x 2.50m	= 0.23 m ³
(i) Heal slab = 7.20m x 0.35m x 0.30m	= 0.76 m ³
(j) W/wall footings	
2 x $\frac{(0.30 + 0.50+0.20)m}{3}$ x 4.0m x 0.30m	= 0.80 m ³
(k) H/W exten. footing = 2 Nox3.70mx0.35mx0.30m	= 0.78 m ³
(back side) Total	= 55.34 m ³

(F) RCC grade M- 20,

@ Rs. 4,591.00/m³..... Rs. 2,54,066.00

Item No. 5. 13.6 Supplying, fitting and fixing of reinforcement in position including cost of cutting & bending reinforcement as per drawing and technical specification.

Total volume of RCC = 54.56 m³

M/s Rod required = 0.60 Qt/m³

(As per analysis enclosed)

i.e. 0.60 x 55.34 Qtls = 33.20 Qtls. = 3.32 MT

@ Rs. 46,779.00/MT..... Rs. 1,55,306.00

Item No. 6. Supply of river gravel 6.00m to 20mm size including laying in position for type A filter of the spillway.

$$\frac{(0.50 + 1.50)m}{2} \times 1.00m \times 7.20m = 7.20 \text{ m}^3$$

@ Rs. 571.00/m³..... Rs. 4,111.00

Item No. 7. Plastering with cement mortar (including cleaning surface etc) thickness of plaster = 12mm

Area :

(i) H/Wall = 2 x 7.20m x 2.40m	= 34.56 m ²
7.20m x 0.30m	= 2.16 m ²

(ii) H/W = 2 x 2 x 4.0m x 1.50m	= 24.00 m ²
2 x 4.0m x 0.30m	= 2.40 m ²

(iii) S/wall= 2 x 3.60m x 1.50m	= 10.80 m ²
2 x $\frac{(3.60+2.40)m}{2}$ x 2.50m	= 15.00 m ²

2 x 1.20m x 1.50m	= 3.60 m ²
2 x $\frac{(1.0+0.50)m}{2}$ x 2.50m	= 3.75 m ²

2 x 4.0m x 0.30m	= 2.40 m ²
(iv) W/wall = 2 x 2 x $\frac{(2.4+0.7)m}{2}$ x 4.0m	= 24.80 m ²

2 x 4.0m x 0.30m	= 2.40 m ²
------------------	-----------------------

(v) Transverse sill = 2 x 0.40m x 7.20m	= 5.76 m ²
1 x 7.20m x 0.30m	= 2.16 m ²

(vi) Butress = 2 x 2.40mx $\frac{(0.30+1.50)m}{2}$	= 4.32 m ²
--	-----------------------

$$(vii) \text{ Sill beam} = 3 \times 2.50\text{m} \times 0.30\text{m} \frac{2}{2} = \frac{2.25 \text{ m}^2}{\text{Total} = 140.36 \text{ m}^2}$$

@ Rs. 72.00/m²..... Rs. 10,106.00

Item No. 8. Earth work in local clay soil including necessary dressing watering etc.
17/28

1. U/S of structure = $7.20\text{m} \times \frac{(3.0\text{m}+9.0\text{m})}{2} \times 1.70\text{m}$
= 73.44 m³

2. Around H/W extension = 2 Nos x $\frac{(3.0\text{m}+9.0\text{m})}{2} \times 4.0\text{m} \times 2.0\text{m}$
= 96.00 m³

3. Guide bund (1:1 slope)
= 2 Nos x 100 x $\frac{(1.5\text{m} \times 4.50\text{m})}{2} \times 1.50\text{m}$
= 900.00 m³
Total = 1069.44 m³

@ Rs. 69.00/m³..... Rs. 73,791.00

Item No. 9. Furnishing and laying of the live sods of perennial turf for guide bund sides

2 Nos x 2 sides x 100m x 2.12m = 848.00 m²

@ Rs. 19.00/m²..... Rs. 16,112.00

Item No. 10. Collection, supplying and placing in position of man size boulder including payment of forest royalty.
15.4

1. U/S side of structure
(a) 7.20m x 2.0m x 0.30m = 4.32 m³
(b) 2 sides x 4.50m x 2.0m x 0.30m = 5.40 m³

2. D/S side of structure
 $\frac{(7.20 + 12.84)\text{m} \times 2.82\text{m} \times 0.60\text{m}}{2} = 16.95 \text{ m}^3$
Total = 26.67 m³

@ Rs. 1,029.00/m³..... Rs. 27,443.00

Item No. 11. Construction of a temporary shed with kitchen size 8.50m x 3.50m = 29.75 m²

@ Rs. 534/m²..... Rs. 15,887.00

Item No. 12. Errection of a tube well L.S..... Rs. 4,000.00

Item No. 13. Fitting, fixing of a signboard of permanent Nature. L.S.....	Rs. 3,500.00
	Total Rs. 6,07,143.00
Adding 1% contingency	Rs. 6,071.00
	Grand Total Rs. 6,13,214.00
	Say Rs. 6,13,000.00

Therefore, Cost/Sqm. of Head wall works

= Rs. 6,13,000.00

7.20m x 2.40m

= Rs. 35,474.53

Say = Rs. 35,500.00

(Rupees thirty five thousand five hundred) only.

Approved by

(R.K. Doley)

Director

Soil Conservation, Department Assam,
Pannyagar Bhawan, Guwahati-05

Committee for Revision of Departmental Norms

Scutinized by

(J.C. Gogoi)

Chairman & Joint Director of
Soil Conservation,
(Head Quarter) S.C. Directorate,
Guwahati-05

(B.K. Bhattacharjya)

Member

&

Divisional Soil Conservation
Officer (Engineering), Uzan
Bazar, Guwahati-01

(P. Dutta)

Member

&

Divisional Soil Conservation
Officer, Hamren Soil
Conservation Division,
Hamren

(P. Saikia)

Member Secretary

&

I/C Joint Director of Soil
Conservation, Lower Assam
Circle, Guwahati

(D. Gogoi)

Member

&

Assistant Soil Conservation
Officer, S.C. Directorate,
Guwahati-05

(G. Kalita)

Member

&

Soil Conservation Overseer
O/O the Jt. DSC (RVP)
Guwahati-01
