

## **SCHEME FOR COMPENSATORY AFFORESTATION**

**In lieu of Forest Land of Ac 3.005 or 1.216 Ha in favour of**

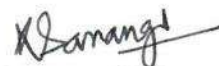
**MAYFAIR Hotels & Resorts Limited**

**in Mouza: Jaydev Vihar, Bhubaneswar**

**(State SL No. OR-064/2021 dtd. 03.08.2021)**

**(Non-Forest land selected for Compensatory Afforestation –1.216 ha)**

**Block Plantation: 1.216ha**



**Divisional Forest Officer  
Nayagarh Forest Division  
Divisional Forest Office,  
Nayagarh Division**

### Land Suitability Certificate

This is to certify that 1.216 Ha of Revenue land in village Mahulapada under Khandapada Range in Nayagarh Forest Division is identified for Compensatory Afforestation and found suitable for plantation and from management point of view. No plantation has been carried out in the aforesaid areas in any scheme previously.

  
Divisional Forest Officer  
Nayagarh Forest Division  
**Divisional Forest Officer**  
**Nayagarh Division**

## SCHEME FOR COMPENSATORY AFFORESTATION

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### 1. Introduction:

MAYFAIR Hotels & Resorts Limited, Bhubaneswar has applied for diversion of Forest Land of Ac 3.005 or 1.216 Ha in Mouza: Jayadev Vihar, Bhubaneswar for construction of Sports Complex of Hotel vide State SL No. OR-064/2021 dtd. 03.08.2021. In order to provide compensatory Afforestation land, the user agency has selected 1.216 Ha of Government Land against the Project.

### 2. Details of Government land allotted for Compensatory afforestation:

The land details of Government land selected and allotted for compensatory afforestation is as follows.

District: Nayagarh

Tahasil: Khandapada

Name of Forest Division: Nayagarh Forest Division.

Name of The Range: Khandapada Range

#### Land Schedule

| Sl No | Village    | Khata no. | Plot No.    | Kissam   | Area taken in Ac.    | Total Plot Area in Ac. | Remark   |
|-------|------------|-----------|-------------|----------|----------------------|------------------------|--|
| 1     | Mahulapada | 401       | 1504 (Part) | Parbat 3 | 1.060                | 8.06                   | Allotted vide letter No.2380 dated 15.09.2022 of Collector, Nayagarh |
|       |            | 401       | 1812 (Part) | Parbat 3 | 1.945                | 16.06                  |  |
|       |            | Total     |             |          | Ac 3.005 or 1.216 Ha | 24.12                  |  |

Area to be afforested: 1.216 Ha



### 3. Description of Area

The land selected and allotted by the Collector, Nayagarh comes within territorial jurisdiction of Khandapada Range under Divisional Forest Officer, Nayagarh Forest Division, Nayagarh.

- **Soil:** The Soil is hard Murrom Lateritic in nature with coarse texture. There is no remarkable erosion in the area selected.
- **Topography:** The land is mostly plain. The altitude is about 60m MSL
- **Climate:** The area experiences a tropical climate. The average rainfall is 1300mm. summer is from March to June. The South west monsoon brings usual rain and most of the rainfall receives within July to October. Depression in Bay of Bengal brings wide spread rainfall to this region. Cyclonic storm sometimes occurs and cause loss of life & property.
- **Vegetation:** The selected area now bears thorny bushes with average height below 1m. There are natural vegetation in the form of saplings of Sal (*Shorea robusta*), Mahula (*Madhuca indica*), Asan (*Terminalia tomentosa*), Chara (*Buchanania lanzan*), Kendu (*Diospyros embryopteris*), Rohini (*Mallotus phillipinensis*), Pia sal (*Pterocarpus marsupium*), Dhaura (*Anogeissus latifolia*) etc. in degraded condition. Climbers like Siali (*Bauhinia vahili*), Dantari (*Acacia sinuate*), Dhatki (*Woodfordia fruticosa*), Satabari (*Asparagus racemosa*) and shrubs like Khajur (*Phoenix dactylifera*), Kurum (*Adina cordifolia*), Kaintha (*Limonia acisidissima*) etc occurring scattered here and there in the above locations. The entire land is filled with unwanted weeds, bushes, climber etc.
- **Biotic interference.** There is heavy pressure on land as it is close to human settlement. Moderate grazing pressure is noticed. It is very sensitive to fire.

### 4. Plantation Model: -

It is proposed to take up plantation in one model i.e.

- Block Plantation @1600 plants per hectare Over 1.216 ha.
- Soil & Moisture Conservation: Staggered trenches @200nos per Ha (2mx0.5mx0.5m)
- Pit size - 45cmx45cmx45cm
- GI Chain Link Fencing over the length of 683 RMT around the CA land

## 5. Schedule of Plantation Program: -

As the area is in one patch and 1.216 ha it is proposed to take up the plantation work in one year and subsequent maintenance as per approved cost norm. The planting details summarized below.

| SI No | Parameters / description              | Plantation model               |
|-------|---------------------------------------|--------------------------------|
| 1     | Model                                 | Block Plantation (Normal Mode) |
| 2     | No of Plants per Hectare              | 1600                           |
| 3     | Total area to be planted in Hectare   | 1.216 Ha                       |
| 4     | Total number of Plants to be planted. | 1946                           |
| 5     | Spacing to be adopted                 | 2.5mx2.5m                      |
| 6     | Pit size                              | 45cm x 45cm x 45cm             |
| 7     | Fencing required in total             | 683 mt                         |
| 8     | Wage Rate                             | RS.333.00                      |

The Cost norm for Block plantation is at Annexure-I. Cost for GI chain link fencing is at Annexure-II.

### Special Objectives of Compensatory Afforestation are as follows:

- To restrict the degradation by reducing the biotic interference to barest minimum and reverse the trend towards the process of restoration of vegetation.
- To develop the forest by providing site-specific silvicultural treatment.
- To facilitate the boosting of natural regeneration and ensure their establishment.
- To take up appropriate soil moisture conservation (SMC) measures to improve the soil and moisture regime.
- To take up SMC measures to capture maximum rain water in the forest area, reduce surface run off, increase percolation of rain water and recharge the ground water.
- To improve the bio-diversity of the forest block.
- To meet the need of the local villagers with regard to firewood and small timber depending upon the productivity (from silvicultural operations like thinning, subsidiary silvicultural operation, climber cutting, cutting of high stumps, double shoot cutting etc.).



- To provide a green clothing to the area by means of artificial regeneration and plantation in order to reduce soil erosion and to save the catchment area of river Mahanadi.
- To improve the wildlife habitat by enrichment plantation consisting of fruit bearing and fodder species.

#### **Item of works to be taken up:**

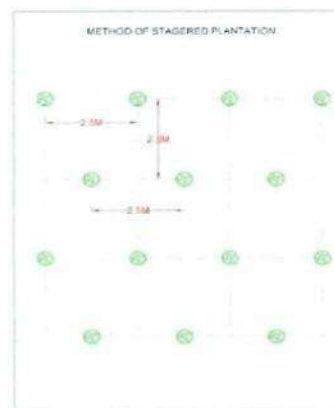
To achieve the above objectives, the following items of works are mainly prescribed to be taken up:

- Survey & Demarcation.
- Fencing.
- Site Clearance & Planting in gaps
- Site Specific Soil & Moisture Conservation Measures.
- Protection of Plantation
- EPA (Entry Point Activity)
- Monitoring & Evaluation Mechanism

#### **5. Technical details: -**

a) **General:** The plantation will be taken up in Block Plantation mode @1600 plants per hectare. There are useful plants like Bela (*Aegle marmelous*), Barkoli (*Ziziphus mauritiana*), Kendu (*Buchanania lanzan*) at present in bushy stage. These plants will be allowed to grow naturally under protection. The year wise activities to be implemented has been enumerated in the approved Cost norm at Annexure- I.

b) **Spacing:** The plant density proposed for planting is @1600 plants per ha in block planting area. The spacing is 2.5m X 2.5m which is generally adopted in this tract. It is suggested to have the line of planting along the contour and plant to plant in adjacent row is staggered. This will reduce the runoff and encourage percolation of water and enrichment of vegetation.



c) **Choice of Species:**

Considering the openness and degraded land condition of the site preference should be given on hardy indigenous, light demander, drought hardy and fodder species. Considering the topography, soil and moisture availability of the plantation area, the following species will be planted.

| Sl.no | Scientific Name of species | Common name | Sl.no | Scientific Name of species       | Common name  |
|-------|----------------------------|-------------|-------|----------------------------------|--------------|
| 1     | <i>Terminalia arjuna</i>   | Arjun       | 10    | <i>Dalbergia sissoo</i>          | Sissoo       |
| 2     | <i>Azadirachta indica</i>  | Neem        | 11    | <i>Gmelina arborea</i>           | Gambhari     |
| 3     | <i>Pongamia pinata</i>     | Karanja     | 12    | <i>Dendrocalamus strictus</i>    | Salia Bamboo |
| 4     | <i>Emblica officinalis</i> | Amla        | 13    | <i>Terminalia tomentosa</i>      | Asana        |
| 5     | <i>Terminalia belerica</i> | Bahada      | 14    | <i>Madhuca indica</i>            | Mahul        |
| 6     | <i>Albizia lebbek</i>      | Sirisa      | 15    | <i>Acacia catechu</i>            | Khaira       |
| 7     | <i>Zizyphus mauritania</i> | Barakoli    | 16    | <i>Mangifera indica</i>          | Mango        |
| 8     | <i>Syzygium cumini</i>     | Jamun       | 17    | <i>Ficus benghalensis</i>        | Bara         |
| 9     | <i>Ficus religiosa</i>     | Pipal       | 18    | <i>Artocarpus heterophyllous</i> | Panasa       |

d) **Plantation Method.**

➤ **Survey & Demarcation :**

The identified area has been surveyed by DGPS and also map has been prepared. The area will be demarcated with RCC pillars of size 1.0 m x 10 cm x 10 cm for clear identification of the area.

➤ **Fencing.**

To protect the plantation from grazing, encroachment and other biotic interferences, it is proposed to provide GI Chain link mesh fencing along about 683m perimeter of the site. The approved cost estimate for Angle iron chain link wire mesh fencing with 10 years maintenance has been provided as **Annexure II**. Assistance of V.S.S is necessary for better social fencing for protection of plantation.



### **Description of GI Chain Link Fencing**

It is suggested to put T shaped pillars at an interval of 2.5m. The length of such pillar is 1.95 m. (1.5m above the ground & 0.45m below the ground.) Size 15cmx10cm. The Lower bar of inverted "T" is of 45cm including the width of the pillar. There will be GI Chain Link mess wire of hot deep 70 gsm 3.15 mm G.I. wire mesh size 50mm x 50 mm.

#### **➤ Site Clearance & Planting :**

Plantation over 1.216 Ha shall be taken up with planting model of AR @ 1600 plants per hectares at a spacing of 2.5 m x 2.5 m. in permanent blacks and in staggered manner in gaps having natural vegetation Site clearance and cleaning to be done in the treatment area to create gap for plantation. Silvicultural cleaning by cutting of high stumps, removal of weeds, singling of multiple shoots, pruning of retained shoots, cutting of climbers and unwanted species in congested areas will be done, so that the plants get optimum condition for growth. All planting and post planting measures like casualty replacement, soil working, manuring, fire protection etc. will be undertaken as per the prescription and guideline issued by PCCF Odisha. Alignment will be made along the contour strictly. It is also suggested to have plants staggered within adjacent rows to reduce runoff. The materials so removed from the site clearance and SSO to be distributed among the villagers/VSS people. A register of distribution to be maintained at Range level.

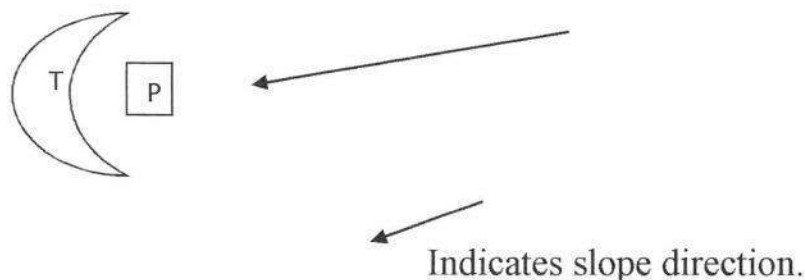
Plantation will be done after first regular shower of monsoon and to be completed within a week. Basal dose of NPK/DAP fertilizer @30gm per plant to be given. Utmost care is to be taken to apply insecticides @5gm per pit. Casualty replacement is to be taken up during 1st year of plantation just after one month of planting. 10% causality replacement is also suggested during 2nd Year.

#### **➤ Weeding, Soil working and Application of Fertilizer.**

Post planting operation is most vital in success of any planting programme. It is proposed to carry out two weeding during first year. Preferable Strip Weeding along the contour will be taken up. One weeding and soil working has to be done in second year and third year of plantation. Application of 30gms of NPK/DAP to be added to the soil per plant at the time of soil working during rains during 1st & 2nd year of plantation. During second weeding, provision of Half-Moon trench is



suggested. This will also be repeated during 2<sup>nd</sup> year also. The design is furnished below.



T : Half-moon trench

P: Plant position.

➤ **Application of insecticide:**

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

➤ **Fire line tracing and maintenance:**

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

➤ **Watch and ward:**

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

**e) Soil and Moisture Conservation Works:**

Rain water harvesting, run off management and enhancement of percolation are the cardinal activities to improve infiltration of water for re-charging of ground aquifer. It enhances the moisture availability to the vegetation in forest eco-system. Soil and moisture conservation activities have been taken up in forestry in various scales and levels as a subsidiary activity and dovetailed to plantation and other afforestation activities. In order to improve water availability in Forests, it is to be practiced as core forestry activity independent of other forestry interventions.



The strategy adopted for rain water harvesting in forest areas is enumerated below.

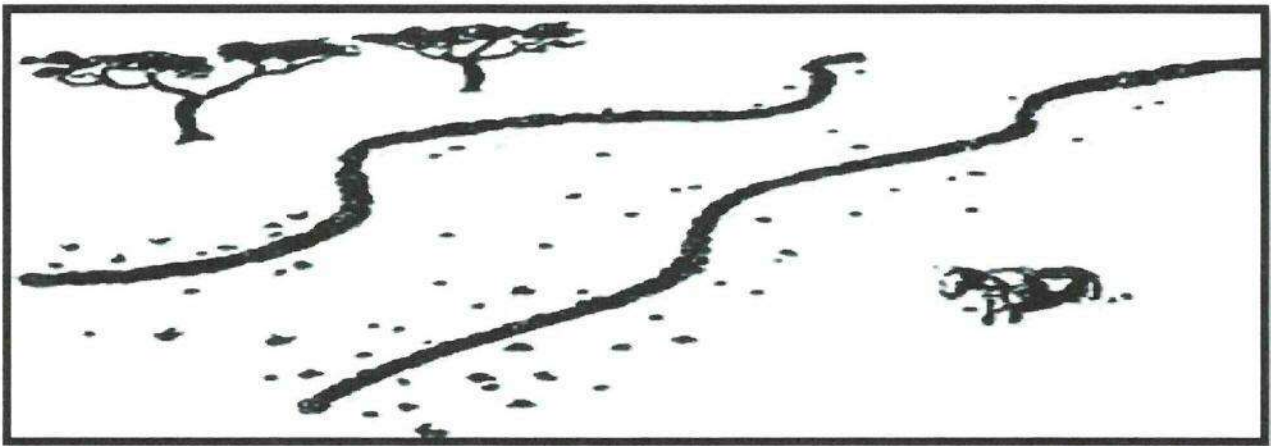
➤ **Forest Floor Treatment :**

The forest floor is the catchment where the precipitation touches the ground and subsequently is drained through the drainage line. It forms the focus area in the rain water harvesting. Permissible interventions will not only capture the rain water but also enhance the retention period ultimately leading to increased infiltration. The Staggered Trenches primarily aims to break the run off. In a Ha. of land up to 300 nos. of Staggered Trenches will be created. The dimension of the Staggered Trenches will be 2.5mt. X 0.5 mt X 0.5 mt. It will help in conserving rain waters of that region and facilitate its percolation. Adequate care should be taken during alignment of such trenches so that gullies are not formed by the water flowing downhill from the edges of the Trench. The identified nalas will be treated, from top to bottom (ridge to valley) approach as per the specific site condition, which will retard the velocity of run-off and be helpful in recharging as well as feeding ground water to the plants planted below it.



Staggered Trench





**f) Peoples Participation :**

In the recent times, no scheme shall be effective if the local villagers are not involved in the implementation of the scheme itself. The villagers who are having a right on the NTFP items in the adjoining forest area are to be associated with the implementation of the scheme at all different levels. For that, Van Samrakhyan Samiti (VSS) is proposed to be constituted in all the villages around the Compensatory Afforestation site. The villagers are to be motivated, inspired and above all, explained the benefits they will be getting, if plantation is protected by them.

**g) EPA (Entry Point Activity) :**

To build the confidence of the local public and smooth execution of the works, Entry-Point Activities in compliance to Govt Resolution of 1993 and 2011, are proposed to orient the community members towards thrift and credit activities. EPA will be taken up after discussion with the nearby villages surrounding the CA site at Nuagaon.

**h) Monitoring & Evaluation Mechanism :**

The scheme shall be effective for a period of 10 years. The cost will be deposited by the user agency and work will be executed by the Divisional Forest Officer, Nayagarh Division with his staff and all prescribed records are to be maintained. In addition to internal monitoring by Forest Officers of State Government, a Monitoring Committee under item no. 3.4 (iii) of consolidated guidelines under F.C Act 1980 issued by MoEF, shall be established with a nominee of the Central Government to oversee that the stipulations, including those pertaining to Compensatory Afforestation are carried out for Revenue forest land.

**One time Cost Norm for Compensatory Afforestation @ 1600 Seedlings  
/Ha. (18 months old seedling) 1.216 Ha. in Mahulapada village area of Khandapada Range  
Wage Rate Rs.333/-per Mandays**

| <b>BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION)<br/>@ 1600 PLANTS PER HECTARE (18 months old seedling)</b> |   |                                       |                      |                             |                               |                            |
|--|---|---------------------------------------|----------------------|-----------------------------|-------------------------------|----------------------------|
| <b>WAGE RATE Rs- 333/- PER MANDAY</b>  |   |                                       |                      |                             |                               |                            |
| <b>Sl. No</b>  | <b>Items of work</b>                            | <b>Preferable Period of Execution</b> | <b>No of Mandays</b> | <b>Labour Cost (In Rs.)</b> | <b>Material Cost (In Rs.)</b> | <b>Total cost (In Rs.)</b> |
| 1  | 2   | 3                                     | 4                    | 5                           | 6                             | 7                          |
| <b>0th Year (Advance work) Pre-Planting Operation</b>  |   |                                       |                      |                             |                               |                            |
| 1  | Survey, Demarcation and Pillar posting          | Nov/Dec                               | 2                    | 666                         | 0                             | 666                        |
| 2  | Preparation of Treatment Map (Digital Map)      | Nov/Dec                               | 1                    | 333                         | 100                           | 433                        |
| 3  | Site preparation (Cleaning & removal of debris) | Nov/Dec                               | 12                   | 3996                        | 0                             | 3996                       |
| 4  | Creation of 4.00 mt wide Inspection Path        | Feb/Mar                               | 1                    | 333                         | 0                             | 333                        |



|                        |   |         |    |       |       |       |
|------------------------|---|---------|----|-------|-------|-------|
| 5                      | Alignment and stacking  | Feb/Mar | 2  | 666   | 0     | 666   |
| 6                      | Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil   | Feb/Mar | 64 | 21312 | 0     | 21312 |
| 7                      | Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.   | Jan/Mar | 0  | 0     | 3500  | 3500  |
|                        | Total   |         | 82 | 27306 | 3600  | 30906 |
| 1st Year/Planting Year |   |         |    |       |       |       |
| 1                      | Refilling of pits by altering the dug-out soil of the pits, application of Organic compounds/ CDM/ FYM & mixing the same properly.  | Jun/Jul | 12 | 3996  | 8000  | 11996 |
| 2                      | Transportation of 18 months old polypot seedlings in hired truck /tractor from the permanent/Mega nursery to planting site including Loading & unloading. (Average lead of 10 Rkm) & stacking the seedling @ Rs.6/- per Seedling. (1760 nos.) | Jul/Aug | 0  | 0     | 10560 | 10560 |
| 3                      | Watering the polypot seedlings at planting site   | Jul/Aug | 3  | 999   | 0     | 999   |

|   |  |          |    |       |      |       |
|---|--|----------|----|-------|------|-------|
| 4 | Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil properly around the planted seedlings.   | Jul/Aug  | 36 | 11988 | 0    | 11988 |
| 5 | <u>Cost of Fertilizer &amp; Insecticide</u><br>(a)NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 80kg @ Rs.30/- per kg = Rs. 2400.00<br>(b) Urea/Vermicompost/Mo Khata/any other fertilizer in two subsequent doses @ Rs. 1,200.00<br>(c) Insecticide/ Bio-pescticide @ 5 gms/plant= 8 kg @ Rs.150/- per kg = Rs. 1200.00 | Jul/Aug  | 0  | 0     | 4800 | 4800  |
| 6 | Casualty Replacement @ 10% (160 nos.)  | Jul/Aug  | 4  | 1332  | 0    | 1332  |
| 7 | 1st weeding & Manuing  | Aug/Sept | 15 | 4995  |      | 4995  |
| 8 | 2nd Weeding, Soil working (1mt. diameter around the plants) and Manuring   | Oct/Nov  | 20 | 6660  | 0    | 6660  |



|                      |   |         |     |       |       |       |
|----------------------|---|---------|-----|-------|-------|-------|
| 9                    | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path  | Feb/Mar | 3   | 999   | 0     | 999   |
| 10                   | Watch & Ward including watering as per requirement  | Aug-Mar | 12  | 3996  | 0     | 3996  |
|                      | Total   |         | 105 | 34965 | 23360 | 58325 |
| 2nd Year Maintenance |   |         |     |       |       |       |
| 1                    | Transportation of 160 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedlings | Jul     | 0   | 0     | 960   | 960   |
| 2                    | Causality replacement- 10%  | Jul     | 4   | 1332  | 0     | 1332  |

|                      |   |          |    |       |      |       |
|----------------------|---|----------|----|-------|------|-------|
| 3                    | Cost of Fertilizer & Insecticide-   | Aug/Sept | 0  | 0     | 4606 | 4606  |
|                      | A) Cost of Insecticide/ Bio-pesticide @ 5 gms/plant = 0.8 Kg @ Rs.150/- per kg = Rs.120/-<br>B)Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @Rs. 4486/- |          |    |       |      |       |
| 4                    | Weeding (Complete weeding), Manuring & Soil working (1mt. diameter around the plants)   | Sep/Oct  | 20 | 6660  | 0    | 6660  |
| 5                    | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path  | Feb/Mar  | 3  | 999   | 0    | 999   |
| 6                    | Watch & Ward including watering as per requirement  | Apr-Mar  | 18 | 5994  | 0    | 5994  |
| 7                    | Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.  |          |    |       | 1000 | 1000  |
|                      | Total   |          | 45 | 14985 | 6566 | 21551 |
| 3rd Year Maintenance |   |          |    |       |      |       |
| 3                    | Cost of FertilizerUrea/NPK/Bio-fertilizer/Vermicompost /Mo Khata/any other fertilizer   | Sept/Oct | 0  | 0     | 4486 | 4486  |

|   |  |         |    |       |      |       |
|---|--|---------|----|-------|------|-------|
| 4 | Weeding, Manuring & Soil working, (1mt. diametre around the plants)                              | Sep/Oct | 20 | 6660  | 0    | 6660  |
| 5 | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path | Feb/Mar | 3  | 999   | 0    | 999   |
| 6 | Watch & Ward including watering as per requirement   | Apr/Mar | 18 | 5994  | 0    | 5994  |
| 7 | Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.                 | Apr/Mar |    |       | 1000 | 1000  |
|   | Total  |         | 41 | 13653 | 5486 | 19139 |

#### 4th Year Maintenance

|   |  |         |    |      |   |      |
|---|--|---------|----|------|---|------|
| 1 | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path | Feb/Mar | 3  | 999  | 0 | 999  |
| 2 | Watch & Ward   | Apr-Mar | 18 | 5994 | 0 | 5994 |
|   | Total  |         | 21 | 6993 | 0 | 6993 |

#### 5th Year Maintenance

|   |   |         |   |        |   |     |
|---|---|---------|---|--------|---|-----|
| 1 | Fire line tracing (2 m. wide fire line over 400 m length) | Feb/Mar | 3 | 999.00 | 0 | 999 |
|---|---|---------|---|--------|---|-----|



|                      |   |         |    |         |   |        |
|----------------------|---|---------|----|---------|---|--------|
| 2                    | Watch & Ward  | Apr/Mar | 18 | 5994.00 | 0 | 5994   |
|                      | Total   |         | 21 | 6993    | 0 | 6993   |
| 6th Year Maintenance |   |         |    |         |   |        |
| 1                    | Fire line tracing (2 m. wide fire line over 400 m length) | Feb/Mar | 3  | 999.00  | 0 | 999.0  |
| 2                    | Pruning of branches, Singling out of multiple shoots      | Jan/Mar | 5  | 1665.00 | 0 | 1665.0 |
| 3                    | Watch & Ward  | Apr/Mar | 18 | 5994.00 | 0 | 5994.0 |
|                      | Total   |         | 26 | 8658    | 0 | 8658.0 |
| 7th Year Maintenance |   |         |    |         |   |        |
| 1                    | Fire line tracing (2 m. wide fire line over 400 m length) | Feb/Mar | 3  | 999.00  | 0 | 999    |
| 2                    | Watch & Ward  | Apr/Mar | 18 | 5994.00 | 0 | 5994   |
|                      | Total   |         | 21 | 6993    | 0 | 6993   |
| 8th Year Maintenance |   |         |    |         |   |        |
| 1                    | Fire line tracing (2 m. wide fire line over 400 m length) | Feb/Mar | 3  | 999.00  | 0 | 999    |

|                       |   |         |    |         |   |      |
|-----------------------|---|---------|----|---------|---|------|
| 2                     | Watch & Ward  | Apr/Mar | 18 | 5994.00 | 0 | 5994 |
|                       | Total   |         | 21 | 6993    | 0 | 6993 |
| 9th Year Maintenance  |   |         |    |         |   |      |
| 1                     | Fire line tracing (2 m. wide fire line over 400 m length) | Feb/Mar | 3  | 999.00  | 0 | 999  |
| 2                     | Watch & Ward  | Apr/Mar | 18 | 5598.00 | 0 | 5598 |
|                       | Total   |         | 21 | 6597    | 0 | 6597 |
| 10th Year Maintenance |   |         |    |         |   |      |
| 1                     | Fire line tracing (2 m. wide fire line over 400 m length) | Feb/Mar | 3  | 933     | 0 | 933  |
| 3                     | Watch & Ward  | Apr/Mar | 18 | 5994.00 | 0 | 5994 |
|                       | Total   |         | 21 | 6927    | 0 | 6927 |

| Year wise Abstract of Cost Norm (showing seedling cost separately) |          |                 |                                     |               |   |   |                    |
|--|----------|-----------------|-------------------------------------|---------------|---|---|--------------------|
| Sl. No   | Year     | No. person days | Labour cost @ Rs. 333/-per day (Rs) | Material Cost | Monitoring, Learning, Other Contingency (5%) of (4+5) | Evaluation, Documentation and of Seedlings @Rs.53.048 per seedlings | TOTAL COST (in Rs) |
| 1  | 2        | 3               | 4                                   | 5             | 6   | 7   | 8                  |
| 1  | 0th year | 82              | 27306                               | 3600          | 1545  | 0   | 32451              |
| 2  | 1st year | 105             | 34965                               | 23360         | 2916  | 93364   | 154605             |
| 3  | 2nd year | 45              | 14985                               | 6566          | 1078  | 8488  | 31117              |
| 4  | 3rd year | 41              | 13653                               | 5486          | 957   | 0   | 20096              |
| 5  | 4th year | 21              | 6993                                | 0             | 350   | 0   | 7343               |
| 6  | 5th year | 21              | 6993                                | 0             | 350   | 0   | 7343               |
| 7  | 6th year | 26              | 8658                                | 0             | 433   | 0   | 9091               |
| 8  | 7th year | 21              | 6993                                | 0             | 350   | 0   | 7343               |
| 9  | 8th year | 21              | 6993                                | 0             | 350   | 0   | 7343               |
| 10   | 9th year | 21              | 6993                                | 0             | 350   | 0   | 7343               |
| 11   | 10th     | 21              | 6993                                | 0             | 350   | 0   | 7343               |



|                                  |      |        |     |        |       |      |        |        |                                |
|----------------------------------|------|--------|-----|--------|-------|------|--------|--------|--------------------------------|
|                                  | year | Total: | 425 | 141525 | 39012 | 9029 | 101852 | 291418 | 354364.288 or<br>say 354364.00 |
| Total requirement (for 1.216 ha) |      |        |     |        |       |      |        |        |                                |

**One time Cost Norm for Fencing using Angle Iron & Chain Link Wire Mesh in 683rmt in Mahulapada village area of  
Khandapada Range (for 250 Rmt)  
Wage Rate Rs.333/-per Mandays**

| <b>Fencing for Compensatory Plantation raised outside the Forest Areas using Angle Iron &amp; Chain Link wire mesh<br/>(for 250 Rmt)</b> |   |   |                 |              |                               |                                     |
|--|---|---|-----------------|--------------|-------------------------------|-------------------------------------|
| <b>WAGE RATE Rs- 333/- PER DAY</b>   |   |   |                 |              |                               |                                     |
| <b>Sl.<br/>No</b>  | <b>Items of work</b>  | <b>Preferable<br/>Period of<br/>Execution</b> | <b>Man days</b> | <b>Wages</b> | <b>Material<br/>cost (Rs)</b> | <b>Total Cost<br/>(Rs. per Ha.)</b> |
| <b>0th Year (PPO)</b>  |   |   |                 |              |                               |                                     |
| 1  | Earth work (Excavation of hole) in Hard soil at a distance 3 mt.<br>$0.40\text{m} \times 0.40\text{m} \times 0.40\text{m} = 0.064 \times 84 = 5.376 \text{ cum @ Rs. 140/ cum} = \text{Rs. 753.}$ |   | 2.42            | 805.86       | 0.0                           | 805.9                               |
| 2  | Cement concrete (1: 4: 8) using 40 mm BHG metal<br>$84 \times 0.40\text{m} \times 0.40\text{m} \times 0.10\text{m} = 1.344 \text{ @ } 3755.94/\text{cum}$   |   | 0               | 0            | 5,047.4                       | 5,047.4                             |
| 3  | Angle Iron pole of size 50 mm X 50 mm X 6 mm of height 2.40 mt.<br>$84 \times 2.40 = 201.60 \text{ Sqmt. @ } 4.50/\text{kg/ Sqmt.} = 907.20 \text{ kg @ } 69.50 \text{ per kg}$                   |   |                 |              | 63,050.0                      | 63,050.0                            |



|   |   |  |             |               |                   |                   |
|---|---|--|-------------|---------------|-------------------|-------------------|
| 4 | Cement concrete (1: 2: 4) for fixing the iron angel pole using 12mm BHG Chips<br>84 X 0.40m X 0.40m X 0.30m = 4.032 cum @ 5486.77/cum             |  |             |               | 22,123.0          | 22,123.0          |
| 5 | Cost of Chain link mess using 4 mm Dia GI wire having gap size 50 mm X 50 mm<br>250 Rmt X 2.10 mt. = 525 Sq.mt @ 331/Sqmt = Rs. 1,73,775          |  |             |               | 1,73,775.0        | 1,73,775.0        |
| 6 | Double cost painting of iron angel pole over a coat of primer using good quality enamale paint<br>84 x 2.10 x 0.20 = 35.28 sqmt. @ Rs.108.80/Sqmt |  |             |               | 3,838.0           | 3,838.0           |
| 7 | Painting of GI chain link mess<br>250 x 2.10 x 2 = 1050/10 = 105 Sqmt. @ Rs. 108.80 Sqmt.   |  |             |               | 11,424.0          | 11,424.0          |
| 8 | Transpotation of Chain link mess, Iron angle, Straighening & tieing of chain link mess etc. @ 2% of the total cost.                               |  |             |               | 5,600.0           | 5,600.0           |
|   | <b>TOTAL</b>  |  | <b>2.42</b> | <b>805.86</b> | <b>2,84,857.4</b> | <b>2,85,663.3</b> |

**Rate per running mt. 2,85,610/ 250= Rs. 1142/Rmt**

### **1st Year Maintenance**

|   |                             |           |   |   |   |   |
|---|-----------------------------|-----------|---|---|---|---|
| 1 | No Maintenance is required. | Sept./Oct | 0 | 0 | 0 | 0 |
|---|-----------------------------|-----------|---|---|---|---|

### **2nd Year Maintenance**

|   |   |           |   |   |       |              |
|---|---|-----------|---|---|-------|--------------|
| 1 | Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |
|---|---|-----------|---|---|-------|--------------|

|                             |   |           |   |   |       |              |
|-----------------------------|---|-----------|---|---|-------|--------------|
|                             | 1142x 1% = 11.42 say Rs. 11   |           |   |   |       |              |
| <b>3rd Year Maintenance</b> |   |           |   |   |       |              |
| 1                           | Maintenance of wire mess fence @ 1% per running<br>mt. cost of installation in 1st yr.<br>1142x 1% = 11.42 say Rs. 11 | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |
| <b>4th Year Maintenance</b> |   |           |   |   |       |              |
| 1                           | Maintenance of wire mess fence @ 1% per running<br>mt. cost of installation in 1st yr.<br>1142x 1% = 11.42 say Rs. 11 | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |
| <b>5th Year Maintenance</b> |   |           |   |   |       |              |
| 1                           | Maintenance of wire mess fence @ 1% per running<br>mt. cost of installation in 1st yr.<br>1142x 1% = 11.42 say Rs. 11 | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |
| <b>6th Year Maintenance</b> |   |           |   |   |       |              |
| 1                           | Maintenance of wire mess fence @ 1% per running<br>mt. cost of installation in 1st yr.<br>1142x 1% = 11.42 say Rs. 11 | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |
| <b>7th Year Maintenance</b> |   |           |   |   |       |              |
| 1                           | Maintenance of wire mess fence @ 1% per running<br>mt. cost of installation in 1st yr.<br>1142x 1% = 11.42 say Rs. 11 | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |
| <b>8th Year Maintenance</b> |   |           |   |   |       |              |
| 1                           | Maintenance of wire mess fence @ 1% per running<br>mt. cost of installation in 1st yr.<br>1142x 1% = 11.42 say Rs. 11 | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |
| <b>9th Year Maintenance</b> |   |           |   |   |       |              |



|                              |  |           |   |   |       |              |
|------------------------------|--|-----------|---|---|-------|--------------|
| 1                            | Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr.<br>1142x 1% = 11.42 say Rs. 11 | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |
| <b>10th Year Maintenance</b> |  |           |   |   |       |              |
| 1                            | Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr.<br>1142x 1% = 11.42 say Rs. 11 | Sept./Oct | 0 | 0 | 11000 | <b>11000</b> |

| <b>Abstract</b>                |             |                        |                                       |                      |                                     |
|--------------------------------|-------------|------------------------|---------------------------------------|----------------------|-------------------------------------|
| <b>Sl. No</b>                  | <b>Year</b> | <b>No. person days</b> | <b>Labour cost @ Rs. 333/-per day</b> | <b>Material Cost</b> | <b>Total cost (Rs.)</b>             |
| 1                              | 0th year    | 2.42                   | 805.9                                 | 284857.4             | 285663.3                            |
| 2                              | 1st year    | 0.0                    | 0.0                                   | 0.0                  | 0.0                                 |
| 3                              | 2nd year    | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| 4                              | 3rd year    | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| 5                              | 4th year    | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| 6                              | 5th year    | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| 7                              | 6th year    | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| 8                              | 7th year    | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| 9                              | 8th year    | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| 10                             | 9th year    | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| 11                             | 10th year   | 0.0                    | 0.0                                   | 11000.0              | 11000.0                             |
| <b>Total:</b>                  |             | <b>2.42</b>            | <b>805.86</b>                         | <b>383857.4</b>      | <b>3,84,663.3 or 3,84,663.00</b>    |
| <b>Requirement for 683 rmt</b> |             |                        |                                       |                      | <b>10,50,899.31 or 10,50,899.00</b> |

**One time Cost Norm for SMC in 1.216 Ha in Mahulapada village area of Khandapada Range**  
**Wage Rate Rs.333/-per Mandays**

| <b>SMC Works Model-C</b>   |  |                                       |                   |
|--|--|---------------------------------------|-------------------|
| <b>Cost Norms for creation of Compensatory Afforestation with Stabilization of Soil &amp; Conservation of Moisture</b> |  |                                       |                   |
| <b>WAGE RATE Rs- 333/- PER DAY</b>   |  |                                       |                   |
| <b>Sl.No</b>   | <b>Item of Works</b>   | <b>Preferable Period of Execution</b> | <b>Total Cost</b> |
| <b>0th Year (Pre-Planting Operation)</b>   |  |                                       |                   |
| 1  | Nil  |                                       | 0                 |
| <b>1st Year</b>  |  |                                       |                   |
| 2  | Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke & WHS as per the slope & site requirement on LS | Apr/Sept.                             | 21,645            |
| <b>2nd Year</b>  |  |                                       |                   |
| 3  | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/Jul                               | 3,246.75          |
| <b>3rd Year</b>  |  |                                       |                   |
| 4  | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/Jul                               | 3,246.75          |
| <b>4th Year</b>  |  |                                       |                   |
| 5  | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/Jul                               | 3,246.75          |
| <b>4th Year</b>  |  |                                       |                   |
| 5  | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/Jul                               | 3,246.75          |
| <b>Total</b>   |  |                                       | <b>34632.00</b>   |

| Abstract                    |          |                 |                                |                 |                                  |
|-----------------------------|----------|-----------------|--------------------------------|-----------------|----------------------------------|
| Sl. No                      | Year     | No. person days | Labour cost @ Rs. 333/-per day | Material Cost   | Total cost (Rs.)                 |
| 1                           | 0th year | 0.0             | 0.0                            | 0.0             | 0.0                              |
| 2                           | 1st year | 0.0             | 0.0                            | 21,190          | 21,645.00                        |
| 3                           | 2nd year | 0.0             | 0.0                            | 3,178           | 3246.75                          |
| 4                           | 3rd year | 0.0             | 0.0                            | 3,178           | 3,246.75                         |
| 5                           | 4th year | 0.0             | 0.0                            | 3,178           | 3,246.75                         |
| 6                           | 5th year | 0.0             | 0.0                            | 3,178           | 3,246.75                         |
| <b>Total</b>                |          | <b>0.00</b>     | <b>0.00</b>                    | <b>33,902.0</b> | <b>34,632.00</b>                 |
| <b>Total (for 1.216 Ha)</b> |          |                 |                                |                 | <b>42,112.5 or say 42,113.00</b> |

Different types of SMC structures will be taken up as per the scope & requirements of the plantation site out of the design & specification of different structures



**Total cost of the Scheme of CA over 1.216 ha in in Mahulapada village area of Khandapada Range**

| <b>Sl. No.</b> | <b>Components</b>  | <b>Amount (in Rs)</b> |
|----------------|--------------------|-----------------------|
| 1              | Cost of Plantation | <b>354364.00</b>      |
| 2              | Cost of fencing    | <b>1050899.00</b>     |
| 3              | Cost of EPA        | <b>53155.00</b>       |
| 4              | Cost of SMC        | <b>42113.00</b>       |
| <b>TOTAL</b>   |                    | <b>15,00,531.00</b>   |

**(Rupees Fifteen Lakhs five hundred and thirty one rupees only)**

**This amount will be paid by the user agency and the work will be executed by DFO , Nayagarh with his staffs for a period of 10 years.**

  
Divisional Forest Officer  
Nayagarh Division  
*Divisional Forest Office*  
*Nayagarh Division*

## ANNEXURE-IV

**Matrix for Fencing Model F-II (Iron angle with PVC Chainlink mesh)**

[illegible]

Matrix for Model-I B Conventional CA Plantation (AR) 1600 plants per Ha

| S. N. | Com<br>men<br>t Year | Base Norm | 1<br>2021-<br>22 | 2<br>2022-<br>23 | 3<br>2023-<br>24 | 4<br>2024-<br>25 | 5<br>2025-<br>26 | 6<br>2026-<br>27 | 7<br>2027-<br>28 | 8<br>2028<br>-29 | 9<br>2029<br>-30 | 0<br>1<br>2030<br>-31 |
|-------|----------------------|-----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------------|
| I     |                      | 30500     | 154729           | 32025            |                  |                  |                  |                  |                  |                  |                  |                       |
| II    |                      | 147361    | 29639            | 162465           | 33626            | 35307            |                  |                  |                  |                  |                  |                       |
| III   |                      | 19148     | 22166            | 34308            | 170588           | 179117           |                  |                  |                  |                  |                  |                       |
| IV    |                      | 6857      | 8335             | 23274            | 36023            | 37072            |                  |                  |                  |                  |                  |                       |
| V     |                      | 6857      | 8751             | 8752             | 9190             | 25660            | 188073           | 197477           | 40872            |                  |                  |                       |
| VI    |                      | 6857      | 9648             | 9648             | 9650             | 9643             | 26943            | 41701            | 207351           | 42916            |                  |                       |
| VII   |                      | 6857      | 10131            | 10130            | 10130            | 10133            | 10133            | 28290            | 43786            | 217719           | 45062            |                       |
| VIII  |                      | 6857      | 10637            | 10638            | 10637            | 13170            | 10637            | 10640            | 29705            | 45975            | 228605           | 47315                 |
| IX    |                      | 6857      | 11169            | 11169            | 11170            | 11169            | 13829            | 11169            | 11172            | 31190            | 48274            | 240035                |
| X     |                      | 6857      |                  | 11727            | 11727            | 11729            | 11727            | 14520            | 11727            | 11731            | 32750            | 50688                 |
| XI    |                      |           |                  |                  | 12313            | 12313            | 12315            | 12313            | 15246            | 12313            | 12318            | 34388                 |
| XII   |                      |           |                  |                  |                  |                  | 12929            | 12931            | 12929            | 16008            | 12929            | 12934                 |
| XIII  |                      |           |                  |                  |                  |                  |                  | 13575            | 13578            | 13575            | 16808            | 13575                 |
| XIV   |                      |           |                  |                  |                  |                  |                  |                  |                  |                  |                  |                       |
| XV    |                      |           |                  |                  |                  |                  |                  |                  |                  |                  |                  |                       |
| X     |                      |           |                  |                  |                  |                  |                  |                  |                  |                  |                  |                       |



Matrix for (SMC)

In Rupees

| Sl. NO. | Commencement Year | Base Norm |       |       |       |       |       |       |       |       |       | Total Cost |       |      |      |      |       |       |
|---------|-------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|-------|------|------|------|-------|-------|
|         |                   | I         | II    | III   | IV    | V     | VI    | VII   | VIII  | IX    | X     |            | XI    | XII  | XIII | XIV  | XV    | XVI   |
| 1       | 2021-22           | 0         | 21226 | 3342  | 3510  | 3685  | 3870  |       |       |       |       |            |       |      |      |      | 35633 |       |
| 2       | 2022-23           |           | 0     | 22287 | 3509  | 3686  | 3869  | 4064  |       |       |       |            |       |      |      |      | 37415 |       |
| 3       | 2023-24           |           |       | 0     | 23401 | 3684  | 3870  | 4062  | 4267  |       |       |            |       |      |      |      | 39284 |       |
| 4       | 2024-25           |           |       |       | 0     | 24571 | 3868  | 4064  | 4265  | 4480  |       |            |       |      |      |      | 41248 |       |
| 5       | 2025-26           |           |       |       |       | 0     | 25800 | 4061  | 4267  | 4478  | 4704  |            |       |      |      |      | 43310 |       |
| 6       | 2026-27           |           |       |       |       |       | 0     | 27090 | 4264  | 4480  | 4702  | 4939       |       |      |      |      | 45475 |       |
| 7       | 2027-28           |           |       |       |       |       |       | 0     | 28445 | 4477  | 4704  | 4937       | 5186  |      |      |      | 47749 |       |
| 8       | 2028-29           |           |       |       |       |       |       |       | 0     | 29867 | 4701  | 4939       | 5184  | 5445 |      |      | 50136 |       |
| 9       | 2029-30           |           |       |       |       |       |       |       |       |       | 31360 | 4936       | 5186  | 5443 | 5717 |      | 52642 |       |
| 10      | 2030-31           |           |       |       |       |       |       |       |       |       |       | 0          | 32928 | 5183 | 5445 | 5715 | 6003  | 55274 |

**DGPS CO-ORDINATE OF C.A LAND BOUNDARY (AREA 3.005 Ac.)**

| <b>Sl.no</b> | <b>Id</b> | <b>Easting</b> | <b>Northing</b> | <b>Longitude</b> | <b>Latitude</b>  |
|--------------|-----------|----------------|-----------------|------------------|------------------|
| 1            | PO.1      | 312990.574     | 2235294.493     | E85°12'36.42666" | N20°12'21.85420" |
| 2            | PO.2      | 313045.021     | 2235257.352     | E85°12'38.31580" | N20°12'20.66564" |
| 3            | PO.3      | 313002.529     | 2235234.472     | E85°12'36.86071" | N20°12'19.90679" |
| 4            | PO.4      | 313018.543     | 2235186.892     | E85°12'37.43000" | N20°12'18.36532" |
| 5            | PO.5      | 312993.032     | 2235176.600     | E85°12'36.55516" | N20°12'18.02173" |
| 6            | PO.6      | 312993.209     | 2235169.769     | E85°12'36.56379" | N20°12'17.79969" |
| 7            | PO.7      | 312979.950     | 2235177.041     | E85°12'36.10441" | N20°12'18.03146" |
| 8            | PO.8      | 312969.002     | 2235180.354     | E85°12'35.72607" | N20°12'18.13537" |
| 9            | PO.9      | 312946.583     | 2235191.178     | E85°12'34.94986" | N20°12'18.47943" |
| 10           | PO.10     | 312926.551     | 2235205.030     | E85°12'34.25475" | N20°12'18.92281" |
| 11           | PO.11     | 312883.587     | 2235169.615     | E85°12'32.78811" | N20°12'17.75618" |
| 12           | PO.12     | 312835.002     | 2235138.345     | E85°12'31.12633" | N20°12'16.72238" |
| 13           | PO.13     | 312830.088     | 2235136.426     | E85°12'30.95780" | N20°12'16.65825" |
| 14           | PO.14     | 312832.463     | 2235177.968     | E85°12'31.02414" | N20°12'18.00985" |
| 15           | PO.15     | 312817.826     | 2235180.028     | E85°12'30.51923" | N20°12'18.07167" |
| 16           | PO.16     | 312820.073     | 2235195.987     | E85°12'30.59069" | N20°12'18.59139" |
| 17           | PO.17     | 312817.703     | 2235202.095     | E85°12'30.50681" | N20°12'18.78916" |
| 18           | PO.18     | 312911.360     | 2235228.292     | E85°12'33.72288" | N20°12'19.67384" |
| 19           | PO.19     | 312951.680     | 2235232.678     | E85°12'35.11001" | N20°12'19.83063" |
| 20           | PO.20     | 312956.964     | 2235239.404     | E85°12'35.28950" | N20°12'20.05115" |
| 21           | PO.21     | 312978.307     | 2235276.227     | E85°12'36.01093" | N20°12'21.25598" |

