

Full Title of the Projects:- Diversion of 0.01 ha of forest land permission for approach road to construction of Office of Smt Kiran Singla & Sh Ashish Singla on Northern Bypass Patiala Km 4-5 L/S Tehsil & Distt : Patiala under forest division Patiala, Punjab.

Estimate for Planting of Tall Plants					Rate:305
Sr. No.	Name of Work	Unit	Unit Cost (in Rs.)	Qty.	Total Amt.
	Nursery				
	Cost of raising plants	1 No.	200	550	110000.00
	Soil Works				
1	Site/Jungle Clearance	Ha.	4988.71	0.50	2494.36
2	Alignment & Dag Bailing	Ha.	792.70	1.00	792.70
3	Earth Workg-Digging of Pits 500x0.6mx0.6mx0.5m	1 m3	93.61	90.00	8424.90
4	Kana Stubbing 25%	Ha.	24952.60	0.25	6238.15
	Plantation				
1	a) Refilling of Pits	100 No.	126.83	450	570.74
2	Loading & Unloading of Plants(500+10% Wastage=1100)	100 No.	37.75	550	207.63
3	Carriage of Plants(500+10% Wastage=1100 avg. distance upto 10 km.))	100 No.	182.70	550	1004.85
4	i) Carriage from site to site	100 No.	10.57	550	58.14
	ii) Planting of plants (500 No. including 10% replacement)	100 No.	600.00	550	3300.00
5	Spot Irrigation (500 Plants)	100 No.	274.80	500	1374.00
6	Application of Insecticides (2 times)	100 No.	37.75	1000	377.50
7	Application of Fertilizers (2 times)	100 No.	37.75	1000	377.50
8	Weeding & Hoeing 3 times	100 No.	330.67	1500.00	4960.05
9	Hand water 8 months x 2 times=16 times	100 No.	274.80	8000.00	21984.00
10	Replanting of plants 10%	100 No.	836.49	50.00	418.25
11	Re-Jungle Clearance (2 times)	Per Ha.	2210.50	1.00	2210.50
12	Covering (25% plants) of plants	100 No.	274.80	125	343.50
13	Uncovering of plants	100 No.	30.20	125	37.75
14	Re-stubbing of Kana(1 time)	-	9485.20	0.25	2371.30
15	Laying out & fixing of Barbed Wire	L/s	-	-	4200.00
16	Watch & Ward for every 10 Ha.(7 months)	Man Year	5550.40	1 Man 7 month	5550.40
17	Material				
	i) Insecticides/Fertilizers	L/s	-	-	5000.00
	ii) POL	L/s	-	-	15099.01
	iii) Barbed Wire & Fencing	L/s	-	-	60396.04
				Sub Total	257791.25
Maintenance I Year					
1	Cost of raising plants for 30% replacement	1 No.	200	150	30000.00
2	Re-opening of Pits 150x0.60x0.60x0.40	1m3	33.22	21.60	717.55

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Patiala Forest Division,
PATIALA
27 JUL 2016

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3	Re-filling of pits with earth in other soils 150x0.60x0.60x0.40	1m3	16.61	21.60	358.78
4	Loading & Unloading of Plants	1 No.	0.38	150.00	57.00
5	Carriage of Plants (150+10%Wastage=330 avg. distance upto 10 km.)	100 No.	182.7	165.00	301.46
6	Spreading of plants pit to pit	100 No.	10.57	165.00	17.44
7	Re-planting Tall plants	100 No.	600	165.00	990.00
8	Spot Irrigation	100 No.	274.8	165.00	453.42
9	Weeding & Hoeing (thrice)	100 No.	330.67	1500.00	4960.05
10	Application of Fertilizer(two times)	100 No.	37.75	1000.00	377.50
11	Application of Insecticide(two times)	100 No.	37.75	1000.00	377.50
12	Hand watering 8 months x 2 times =16 times	100 No.	274.8	8000.00	21984.00
13	Rejungle Clearance (2 times)	Per Ha.	2210.5	1.00	2210.50
14	Restubbing of Kana	Per Ha.	9485.2	0.25	2371.30
15	Watch & Ward for every 10 Ha.(10 Months)	Man Year	79300	1/10 Man Yr.	7930.00
16	Repair of Barbed wire	LS	-	-	5000.00
17	POL & repair of machinary	LS	-	-	15099.11
18	Material & supply	LS	-	-	10569.31
				Sub Total	103774.91

Maintenance II Year

1	Cost of raising plants for 25% replacement	No.	200	75	15000.00
2	Re-opening of Pits 75x0.60x0.60x0.40	1m3	33.22	10.80	358.78
3	Re-filling of pits with earth in other soils 75x0.60x0.60x0.40	1m3	16.61	10.80	179.39
4	Loading & Unloading of Plants	1 No.	0.38	75.00	28.50
5	Carriage of Plants (75 avg. distance upto 10 km.)	100 No.	182.7	75.00	137.03
6	Spreading of plants pit to pit	100 No.	10.57	75.00	7.93
7	Re-planting Tall plants	100 No.	600	75.00	450.00
8	Spot Irrigation	100 No.	274.8	75.00	206.10
9	Weeding & Hoeing (twice)	100 No.	330.67	1500.00	4960.05
10	Hand watering 10 times	100 No.	274.8	5000.00	13740.00
11	Rejungle Clearance (2 times)	Per Ha.	2210.5	1.00	2210.50
12	Restubbing of Kana	Per Ha.	9485.2	0.10	948.52
13	Pruning of Plants	100 No.	277.82	100.00	277.82
14	Watch & Ward for every 10 Ha.	Man Year	87565.2	1/10 Man Yr.	8756.52
15	Repair of Barbed wire	LS	-	-	5000.00
16	POL & repair of machinary	LS	-	-	10000.00
17	Material & supply	LS	-	-	10000.00
				Sub Total	72261.13

Maintenance III Year

1	Cost of raising plants for 20% replacement	No.	200	50	10000.00
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2	Re-opening of Pits 50x0.60x0.60x0.40	1m3	33.22	7.20	239.18
3	Re-filling of pits with earth in other soils 50x0.60x0.60x0.40	1m3	18.12	7.20	130.46
4	Loading & Unloading of Plants	1 No.	0.38	50.00	19.00
5	Carriage of Plants (50 avg. distance upto 10 km.)	100 No.	182.7	50.00	91.35
6	Spreading of plants pit to pit	100 No.	10.57	50.00	5.29
7	Re-planting Tall plants	100 No.	330.67	50.00	165.34
8	Spot Irrigation	100 No.	274.8	50.00	137.40
9	Weeding & Hoeing (thrice)	100 No.	330.67	1500.00	4960.05
10	Hand watering 8 times	100 No.	274.8	4000.00	10992.00
11	Rejungle Clearance (2 times)	Per Ha.	2210.5	1.00	2210.50
12	Stubbing of Kana	Per Ha.	9485.2	0.10	948.52
13	Pruning of Plants 20%	100 No.	277.82	100.00	277.82
14	Watch & Ward for every 10 Ha.	Man Year	79300	1/10 Man Yr.	7930.00
15	Repair of Barbed wire	LS	-	-	5000.00
16	POL & repair of machinery	LS	-	-	10000.00
17	Material & supply	LS	-	-	10000.00
				Sub Total	63106.91

Maintenance IV Year

1	Cost of raising plants for 15% replacement	No.	200	25	5000.00
2	Re-opening of Pits 25x0.60x0.60x0.40	1m3	33.22	3.60	119.59
3	Re-filling of pits with earth in other soils 25x0.60x0.60x0.40	1m3	18.12	3.60	65.23
4	Loading & Unloading of Plants	1 No.	0.38	25.00	9.50
5	Carriage of Plants (25 avg. distance upto 10 km.)	100 No.	182.7	25.00	45.68
6	Spreading of plants pit to pit	100 No.	10.57	25.00	2.64
7	Re-planting Tall plants	100 No.	600	25.00	150.00
8	Spot Irrigation	100 No.	274.8	25.00	68.70
9	Weeding & Hoeing (thrice)	100 No.	330.67	1500.00	4960.05
10	Rejungle Clearance (2 times)	Per Ha.	2210.5	1.00	2210.50
11	Stubbing of Kana	Per Ha.	9485.2	0.10	948.52
12	Pruning of Plants 30%	100 No.	277.82	300.00	833.46
13	Watch & Ward for every 10 Ha.	Man Year	79300	1/10 Man Yr.	7930.00
14	Repair of Barbed wire	LS	-	-	5000.00
15	POL & repair of machinery	LS	-	-	10000.00
16	Material & supply	LS	-	-	10000.00
				Sub Total	47343.87

Maintenance V Year

1	Watch & Ward for every 10 Ha.	Man Year	87565.2	1/10 Man Yr.	8756.52
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Patiala Forest Division.
PATIALA 2 JUL 2016

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				Sub Total	8756.52
Maintenance VI Year					
1	Watch & Ward for every 10 Ha.	Man Year	87565.2	1/10 Man Yr.	8756.52
				Sub Total	8756.52
Maintenance VII Year					
1	Watch & Ward for every 10 Ha.	Man Year	87565.2	1/10 Man Yr.	8756.52
				Sub Total	8756.52
Maintenance VIII Year					
1	Watch & Ward for every 10 Ha.	Man Year	87565.2	1/10 Man Yr.	8756.52
				Sub Total	8756.52
Maintenance IX Year					
1	Watch & Ward for every 10 Ha.	Man Year	87565.2	1/10 Man Yr.	8756.52
				Sub Total	8756.52
				TOTAL	588060.66
	Over Head expenses 5%				29403.03
	Enhancement due to wage escalation @10%				58806.07
				G.Total	676269.76
				Or Say	676000.00
Note	The Watch and ward in subsequent years will carry out the necessary operations of Pruning				
	Total Cost per Plants (In Rs.)	676			
	Cost of Trees Gurads as per site is extra (in Rs. Per Tree Guard)	1800			
	Compensatry Afforestation of Plants	1 x 2 = 2 x 676 =			1352/-

626
Divisional Forest Officer,
Patiala Forest Division,
Patiala.

21 JUL 2016

Wage
Rate : Rs. 328

Plantation Model For Standard Plantation under Compensatory Afforestation
Plants Per Hectare : 1000 Nos.

No.	Name of Work	Unit	Qty.	Unit Cost (in Rs.)	Amount
	Nursery				
	Nursery cost of raising plants	1100	1100	20.00	22000.00
A	Soil Work				
1	Site / Jungle Clearance (25%)	Ha.	0.5	5367.22	2683.61
2	Alignment & Dagbaling	Ha.	1	984.00	984.00
3	Earth works in Digging of Pits 1000 x 0.5 m x 0.5 m x 0.4 m	1 M3	100	101.38	10138.00
5	Kana Stubbing 25%	Ha.	0.25	26836.00	6709.00
B	Plantation Work				
1	Refilling of Pits 1000x0.5mx0.5mx0.3	100 cum	75	2747.00	2060.25
2	Loading & Unloading of Plants (1000+10% Wastage=1100)	100 No.	1100	550.00	6050.00
3	Carriage of Plants (1000+10% wastage =1100 avg. distance upto 10 km.)	100 No.	1100	196.80	2164.80
4	i) Carriage from site to site	100 No.	1000	131.20	1312.00
	ii) Planting of Plants (1000 No. including 10% replacement)	100 No.	1000	984.00	9840.00
5	Spot Irrigation (1000 Plants)	100 No.	1000	205.00	2050.00
6	Application of Insecticide (2 Times)	100 No.	1000	41.00	410.00
7	Application of Fertilizers (2 Times)	100 No.	1000	41.00	410.00
8	Weeding & Hoeing 3 Times	100 No.	3000	357.52	10725.60
9	Hand Watering (12 Times)	100 No.	12000	205.00	24600.00
10	Replanting of Plants 10%	100 No.	100	579.11	579.11
11	Rejungle Clearance (2 Times)	Per Ha.	1	2378.00	2378.00
12	Covering (25% plants) of plants	100 No.	250	295.20	738.00
13	Uncovering of plants	100 No.	250	32.80	82.00
14	Restubbing of Kana (1 Time)		0.25	26836.30	6709.08
15	Laying out & fixing of Barbed Wire	L/s			7872.00
16	Watch & Ward for every 10 Ha. (7 Months)	Man Year	1 Man 7 Month	8528.00	5969.60
17	Material				
	i) Insecticides / Fertilizers	L/s			5000.00
	ii) POL	L/s			5000.00
	iii) Barbed Wire	L/s			50000.00
	Sub Total				186465.05
	Maintenance 1 Year				
1	Cost of raising plants for 30% replacement	1 No.	300	20.00	6000.00
2	Reopening of Pits 300 x 0.50 x 0.50 x 0.30	1 m3	21.6	59.63	1341.68

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3	Refilling of pits with earth in other soils 300 x 0.50 x 0.50 x 0.30	1 m3	21.6	27.47	618.08
4	Loading & Unloading of Plants	1 No.	300	2.46	738.00
5	Carriage of Plants (300+10% Wastage = 330 avg. distance upto 10 Km.)	100 No.	1	196.20	196.20
6	Spreading of plants pit to pit	100 No.	165	131.20	216.48
7	Re-Planting to plants	100 No.	165	329.08	542.98
8	Spot Irrigation	100 No.	165	205.00	338.25
9	Weeding & Hoeing (Three)	100 No.	3000	357.52	10725.60
10	Application of Insecticide (2 Times)	100 No.	1000	41.00	410.00
11	Application of Fertilizers (2 Times)	100 No.	1000	41.00	410.00
12	Hand Watering (6 Times)	100 No.	6000	357.52	21451.20
13	Rejungle Clearance (2 Times)	Per Ha.	1	2378.00	2378.00
14	Restubbing of Kana	Per Ha.	0.25	26836.00	6709.00
15	Watch & Ward for every 10 Ha. (10 Months)	Man Year	1/10 Man Yr.	8528.00	5969.60
16	Repair of Barbed Wire	L/s			5000.00
17	POL & Machinery	L/s			5000.00
18	Material and Supply	L/s			5000.00
	Sub Total				73045.06
	2nd Year Maintenance				
1	Cost of raising plants for 15% replacement	1 No.	150	20.00	3000.00
2	Reopening of Pits 150 x 0.60 x 0.60 x 0.40	1 m3	21.6	59.63	644.00
3	Refilling of pits with earth in other soils 150x 0.60 x 0.60 x 0.40	1 m3	21.6	27.47	296.68
4	Loading & Unloading of Plants	1 No.	75	2.46	184.50
5	Carriage of Plants Wastage = 75 avg. distance upto 10 Km.)	500 No.	1	196.20	196.20
6	Spreading of plants pit to pit	100 No.	75	131.20	98.40
7	Re-Planting to plants	100 No.	75	229.09	171.82
8	Spot Irrigation	100 No.	75	205.00	153.75
9	Weeding & Hoeing (Twice)	100 No.	2000	357.52	7150.40
10	Hand Watering (5 Times)	100 No.	5000	205.00	10250.00
11	Rejungle Clearance (2 Times)	Per Ha.	1	2378.00	2378.00
12	Pruning to Plants	100 No.	100	387.61	387.61
13	Watch & Ward for every 10 Ha.	Man Year	1/10 Man Yr.	8528.00	5969.60
14	Repair of Barbed Wire	L/s			5000.00
15	POL & Machinery	L/s			5000.00
18	Material and Supply	L/s			5000.00
	Sub Total				45880.96
	3rd Year Maintenance				
1	Cost of raising plants for 10% replacement	1 No.	100	20.00	2000.00
2	Reopening of Pits 100 x 0.50 x 0.50 x 0.40	1 m3	10	5963.00	429.34
3	Refilling of pits with earth in other soils 100 x 0.50 x 0.50 x 0.30	1 m3	7.5	27.47	197.78

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4	Loading & Unloading of Plants	1 No.	100	2.46	246.00
5	Carriage of Plants 50 avg. distance upto 10 Km.)	100 No.	100	1.00	100.00
6	Spreading of plants pit to pit	100 No.	100	131.20	131.20
7	Re-Planting to plants	100 No.	100	229.09	229.09
8	Spot Irrigation	100 No.	100	205.00	205.00
9	Weeding & Hoeing (thrice)	100 No.	2000	357.52	7150.40
10	Hand Watering (8 Times)	100 No.	5000	205.00	10250.00
11	Pruning to Plants 20%	100 No.	200	387.61	775.22
12	Watch & Ward for every 10 Ha.	Man Year	1/10 Man Yr.	8528.00	5969.60
13	Repair of Barbed Wire	L/s			5000.00
14	POL & Machinery	L/s			5000.00
15	Material and Supply	L/s			5000.00
Sub Total					42683.63
4th Year Maintenance					
1	Cost of raising plants for 5% replacement	1 No.	50	20.00	1000.00
2	Reopening of Pits 50 x 0.50 x 0.50 x 0.40	1 m3	5	5963.00	429.34
3	Refilling of pits with earth in other soils 100 x 0.50 x 0.50 x 0.30	1 m3	3.75	27.47	197.78
4	Loading & Unloading of Plants	1 No.	50	2.46	123.00
5	Carriage of Plants 50 avg. distance upto 10 Km.)	100 No.	50	1.00	50.00
6	Spreading of plants pit to pit	100 No.	50	131.20	65.60
7	Re-Planting to plants	100 No.	50	229.09	114.54
8	Spot Irrigation	100 No.	50	205.00	102.50
9	Weeding & Hoeing (thrice)	100 No.	2000	357.52	7150.40
10	Hand Watering (8 Times)	100 No.	4000	205.00	8200.00
11	Pruning to Plants 30%	100 No.	300	387.61	1162.83
12	Watch & Ward for every 10 Ha.	Man Year	1/10 Man Yr.	8528.00	5969.60
13	Repair of Barbed Wire	L/s			5000.00
14	POL & Machinery	L/s			5000.00
15	Material and Supply	L/s			5000.00
Sub Total					39565.59
5th Year Maintenance					
1	Watch & Ward for every 10 Ha. (10 Motnts)	Man Year	1/10 Man Yr.	8528.00	5969.60
Sub Total					5969.60
6th Year Maintenance					
1	Watch & Ward for every 10 Ha. (10 Motnts)	Man Year	1/10 Man Yr.	8528.00	5969.60
Sub Total					5969.60
7th Year Maintenance					

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1	Watch & Ward for every 10 Ha. (10 Motnts)	Man Year	1/10 Man Yr.	8528.00	5969.60
	Sub Total				5969.60
	8th Year Maintenance				
1	Watch & Ward for every 10 Ha. (10 Motnts)	Man Year	1/10 Man Yr.	8528.00	5969.60
	Sub Total				5969.60
	9th Year Maintenance				
1	Watch & Ward for every 10 Ha. (10 Motnts)	Man Year	1/10 Man Yr.	8528.00	5969.60
	Sub Total				5969.60
	10th Year Maintenance				
1	Watch & Ward for every 10 Ha. (10 Motnts)	Man Year	1/10 Man Yr.	8528.00	5969.60
	Sub Total				5969.60
	Total				423457.89
	Over Head expenses 5%				21172.89
	Wage Enhancement @ 10%				42345.79
	G. Total				486976.58
	Or Say				486977

Cost of Compensatory Afforestation per Ha. For 7-10 Year
Rs. 486977 per Ha. = $7 \text{ Tree} \times 10 = 70 \times \frac{486977}{1000}$

= 34088/-

Net Present Value per Ha. @ Rs. 887000 X 0.01

= 8870/-

OB
Ajit Kulkarni, IFS
Divisional Forest Officer,
Patiala Forest Division,
Patiala.