

RECLAMATION PLAN

Reclamation Plan of Muck Dumping Sites in respect of C/o Motorable link road from Dabala Danga to Chamber Km 0/0 to 3/700.

Detail Reclamation Plan, whenever required. It should be realistic exhaustive and complete in all respects along with relevant maps in distinct colours. It should also include the details of back fillings, afforestation and execution of such works, whenever required.

Diversion of 2.358 hectare of forest land has been proposed for the construction of Motorable Link road from Daballa Danga to Chambar Km. 0/0 to 3/700 in Tehsil Bhattiyat District Chamba. The construction of this road will generate muck to the extent of 71396.90 Cubic Metre. By taking a swell factor of 40% on Pick+Jumper work and 25% on Blast work the total muck become 157141.37 cubic metre (Detail attached at Annexure-I) Out of this 94284.82 cubic metre of muck will be used locally in filling, construction of masonry walls in dumping place and in leveling of road. The remaining 62856.55 Cubic metre of muck will require safe disposal. The user agency has identified 2 No. dumping sites for the disposal of this muck. The dumping site has been identified along the proposed site and the capacity of the dumping site has been worked out to be 63856.00 cubic metre (Detail attached Annexure-I) which is sufficient to hold the muck to be generated.

Thus all the muck generated will be dumped in the designated dumping sites. 2 number dumping sites designated as DS-I to DS-II have been identified for dumping of muck / debris to be produced during the construction phase of the project. It is proposed that the dumping sites are treated in such a manner that these do not pose any problem to the environmental management consideration arising out of the necessity to stabilize the dumping sites at the earliest. Therefore, this reclamation plan has been formulated with the following objectives:-

1. To arrest the dumped muck in-situ so that it does not find its way to the nearby drainage channels, thus altering the drainage pattern of the area.

2. To rehabilitate the dumped area over a period of time so that it merges with the Adjoining natural landscape and does not stand out as a sore point.
3. To improve the aesthetics of the dumping grounds/ dumping site by planting suitable Plants and trees species thereby increasing the forest cover in the area.
4. To stabilize the dumping site by vegetative and engineering structures.

Implementation :

The proposal will be implemented by the user agency itself at its own cost as detailed in this plan. The implementation of the plan will be supervised by the forest department from time to time and the progress will be periodically monitored. In case of default the sanction of diverted land may be revoked with suitable penalty as decided by the Govt. of India.

Strategy :

The pronged approach will be followed for reclamation of dumping sites. In the first instance crate wall will be erected around the dumping site so that required capacity for dumping of muck is created at the sites. The detailed drawings of the crate work to be undertaken are enclosed. The primary objective of the crate works will be to arrest the dumped muck at the dumping sites itself and not allow its spillage to adjoining areas and eventually to nearby drainage lines. The capacity of the dumping sites has been calculated as detailed in the table and will be enough to hold the muck required to be dumped in each of the sites.

In the second phase, once the dumping is complete it will be ensured that the dumping site is planted with grasses, bushes, shrubs and tree so that it gives an aesthetic look. This vegetal cover will also help in binding the soil and will prevent its erosion. For vegetating the dumping sites, suitable local species will be preferred. However, it may be noted that bulk of the muck to be dumped will be excavated material which will be lacking in essential nutrients and organic matter. Hence it will be desirable to increase the nutrient status of the top soil to make it conducive to tree/ vegetal growth. For this purpose maturing of top soil shall be done. If required, imported soil shall be brought to replenish the top soil. Instantly grasses and bushes will be planted in the area to improve the soil condition. Once these grasses and bushes take hold of the site, tree species will be planted in next phase. The tree species to be planted will be namely Robinia, Lucinea, albizia, Drek Amla Bamboo, Khair and Shisham.

Grasses like Steria and Napier will also be propagated. Trees will be Planted as the closer spacing so that canopy is closed at the earliest. Hence the spacing will be kept at 1.5 mtr. x 1.5 mtr. The total area involved in dumping is 1500 Square metre. Also due to inert nature of soil, plants will need extra care for their establishment. For this purpose, imported soil/ organic manure will be added in each pit for easy establishment of plants. Watering of the plant in dry

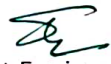
season will be provided to prevent mortality. Erection of crate walls around the dumping sites will be done prior to actual dumping starts the total cost of the Reclamation Plan is **Rs. 3019867/-**.

Post reclamation arrangement :

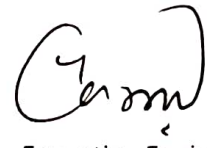
Since the area in question is required by the user agency only for the temporary use of dumping, hence the area will be reverted back to forest department after implementing the reclamation plan, if so stipulated by Govt. of India. However if at the time of so reverting back the areas to forest department if any activities as per this reclamation plan is found wanting then the forest department may realize the cost that activity from the user agency at the prevailing wages rates applicable in forest department and may get the same done departmentally at the project cost.

Place : Dalhousie

Dated :-



Assistant Engineer,
Banikhet Sub Division,
HP:PWD Banikhet



Executive Engineer.
Dalhousie Division,
HP:PWD Dalhousie

C/S



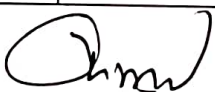
Divisional Forest Officer
Dalhousie Forest Division
Dalhousie

MUCK MANAGEMENT PLAN (ANNEXURE-I)


Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar Km. 0/0 to 3/700

	Total Quantity of muck being produced	71396.90
1	Deduction for useful stone as required under clauses of agreement to be executed by the Executive Engineer of Project Implementing unit Division in behalf of Govt. of H.P. for using in project	5263.41
	Net balance quantity of debries / Muck	66133.50
2	Add quantity available on site with swell factor @ 40% on P.W. & J.W.	77849.36
	Add quantity available on site with swell factor @ 25% on Blast work	13158.51
	GRAND TOTAL (A)	157141.37
3	Less of material required for the construction of dumping in dry masonry wall @ 5% of (A)	7857.07
4	Less of material / muck required for the levelling of proposed road @ 15% of (A)	23571.20
5	Less of material / muck required for the levelling of proposed road on the analogy of half cutting and half filling @ 40% of (A)	62856.55
	GRAND TOTAL (B)	94284.82
6	Material / muck left in the site which required carriage for the proper dumping at the recognized site as per the instruction of Forest and Environment Ministry reinforced by various judgment of the Apex Court Govt. of India i.e. (A-B)	62856.55
	Proposed for dumping DS-I to II	2 No.
	Total capacity of dumping places :	63856.00
		Cum.
	Area in Ha for dumping site	0.168 Hect.


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Dalhousie Forest Division,
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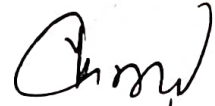
ABSTRACT OF QUANTITY (ANNEXURE-2)

Name of work :- Construction of Motorable Link road from Daballa
Danga to Chambar Km. 0/0 to 3/700

PAGE	TOTAL QUANTITY	PICK WORK	JUMPER WORK	BLASTING WORK
01	7135.50	2194.00	3237.51	1703.99
02	6585.75	188.73	1752.06	4644.96
03	6367.65	1388.60	2300.96	2678.09
04	5891.03	2142.17	2658.05	1090.81
05	6485.03	2639.61	2978.31	867.11
06	6982.43	810.06	2191.86	3980.51
07	7536.45	3355.85	3355.85	824.76
08	13637.63	6818.81	6818.81	0.00
09	10775.45	5387.73	5387.73	0.00
TOTAL	71396.90	24925.55	30681.14	15790.22

- i) In ordinary soil = $24925.55 + 30681.14 = 55606.69$ Cum.
ii) In Hard Rock = 15790.22 Cum.


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"ABSTRACT OF COST"

Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar Km. 0/0 to 3/700

(SH:- CONSTRUCTION OF WIRE CRATES FOR MUCK DUMPING SITES)

S.No	Item	Qty	Rate	Unit	Amount
1	Earthwork in excavation for structures as per drawing and technical specifications clauses 305.1 including setting out, construction of shoring and bracing, removal of stumps and other deleterious material and disposal upto a lead of 50 m, dressing of sides and bottom and backfilling in trenches with excavated suitable materials Ordinary soil Upto 3 m depth	349.38	128.15	Per cubic metre	44772.00
2	Providing and laying of boulder apron laid in wire crates with 4 mm dia GI wire conforming to IS:280 and IS:4826 in 100 mm x 100 mm mesh (woven diagonally) including 10 per cent extra for laps and joints laid with stone boulders weighing not less than 25 kg each as per drawing and technical specifications Clause 1301	2015.63	1458.40	Per cubic metre	2939588.00
Total					2984360.00


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MUCK DUMPING SITE DETAIL

Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar road KM 0/0 to 3/700

Name of Component	Location of Dumping	Slope of dumping place in degree	Qty. of muck generated (Cu. Mtr)	Qty. of muck with swell factor (Cu. M)	Qty. muck to used (Cu. Mtr)	Qty. of muck disposed (Cu. Mtr.)	Height of dumping expected in mtr.
Road	Dumping Site I & II	10°-15°	71396.90 Cum	157141.37 Cum	94284.82 Cum.	62856.55 Cum	Av. 15.00 to 15.50 mtr.

Sr. No	Description	Khasra no.	Area in Sqm	Height	Capacity of muck to be dumped (in Cum)
1.	Dumping Place –DS- I	226/3	838.50 Sqm.	10.00	31928.00
2.	Dumping Place –DS- II	435/2	838.50 Sqm.	10.00	31928.00


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MUCK DUMPING SITE DETAIL

Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar road KM 0/0 to 3/700

Name of Component	Location of Dumping	Slope of dumping place in degree	Qty. of muck generated (Cu. Mtr)	Qty. of muck with swell factor (Cu. M)	Qty. muck to used (Cu. Mtr)	Qty. of muck disposed (Cu. Mtr.)	Height of dumping expected in mtr.
Road	Dumping Site I & II	10°-15°	71396.90 Cum	157141.37 Cum	94284.82 Cum.	62856.55 Cum	Av. 15.00 to 15.50 mtr.

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2.	Dumping Place –DS- II	435/2	838.50 Sqm.	10.00	31928.00


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DETAIL OF FOREST LAND UNDER DUMPING

Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar Km. 0/0 to 3/700

S.No	Location of dumping	Khasra No.	Status of land
1	Dumping site -I	226/3	Charagha Darktan
2	Dumping site -II	435/2	Charagha Darktan


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MUCK MANAGEMENT (DUMPING SITES)
DETAIL OF SHOWING THE CAPACITY OF MUCK WILL BE ADJUSTED

Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar
Km. 0/0 to 3/700

S.No	Khasra No. of dumping site	Name of Dumping Place	Forest area under dumping (In Hactares)	X- section area	Length	Quantity
1	226/3	Dumping site -I	215.00x3.90=838.50 Sqm. or 0.0.084 ha	148.50	215.00	31928.00
2	435/2	Dumping site -II	215.00x3.90=838.50 Sqm. or 0.0.084 ha	148.50	215.00	31928.00
Total						63856.00


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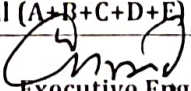

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ANNEXURE -3

**Name of work :- Construction of Motorable Link road from
Daballa Danga to Chambar Km. 0/0 to 3/700**

S.No	Descriptions	Unit	Qty.	Rate	Amount
A	Engineering Measures				
	Wire crate & Retaining walls	As per detail attached			2984360.00
B	Survey, Demaracation & Fencing				
1	Survey & Demarcation of plantation area	Ha.	0.168	235.66	40.00
2	Preparation/purchase of RCC Fence Post	Nos.	8	400	3200.00
3	Carriage of fence post upto 165 cm long over a distance of 2.00 km.uphill/downhill	Km/ Nos.	8	78.17	625.00
4	Preparation of digging holes of 20x30x50cm size	Nos.	8	21.14	170.00
5	Fixing of RCC Fence post i/c strutting	Nos.	8	16.71	134.00
6	Carriage of barbed wire over a distance of 2.00 km.uphill/downhill	Km/ Qtl	0.13	171.85	23.00
7	Stretching & fixing of Barbed wire in 4 Stands	Rmt.	100.8	11.20	1129.00
8	Interlacing of thorny brushes along the Fence	Rmt.	25.2	9.54	240.00
9	Cost of warbed wire	Qtl.	0.13	11000	1430.00
			Total (B)		6991.00
C	Planting:				
1	Brush cutting in strips (3mx3m)	Ha.	0.168	2783.16	468.00
2	Digging of pits 45x45x45cm.	Nos.	185	22.26	4118.00
3	Filling of pits 45x45x45cm.	Nos.	185	6.35	1175.00
4	Carriage of plant in P. Bags over a distance of 2.00 km.uphill/downhill	Km/ Nos.	185	4.43	820.00
5	Planting of plants Raised in P/ Bags	Nos.	185	5.09	942.00
6	Construction of Inspectyion Path	Rmt.	16.80	25.67	432.00
7	Cost of Sign Baords, Carriage & Fixing	Nos.	5.00	2500	12500.00
			Total (C)		20455.00
			Total (B+C)		27446.00
D	Add 5% contingencies Chagres (B+C)				1373.00
E	Maintenance of Ist year of 10th year				6688.00
			Total (A+B+C+D+E)		3019867.00


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FIRST YEAR MAINTENANCE (30% BEATING UP)

Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar Km. 0/0 to 3/700

S.No	Descriptions	Unit	Qty.	Rate	Amount
1	Re-digging of pits 45x45x45cm.	Nos	55	11.13	613.00
2	Filling of pits 45x45x45cm.	Nos	55	6.35	350.00
3	Planting of Plants raised in P/Bags	Nos	55	5.09	280.00
4	Carriage of plant in P. Bags over a distance of 2.00 km.uphill/downhill	KM/No.	55	4.43	244.00
5	Repair of fence post	Rmt.	10.08	4.19	230.00
				Total	1717.00



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SECOND YEAR MAINTENANCE (20% BEATING UP)

Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar Km. 0/0 to 3/700

S.No	Descriptions	Unit	Qty.	Rate	Amount
1	Re-digging of pits 45x45x45cm.	Nos	37	11.13	412.00
2	Filling of pits 45x45x45cm.	Nos	37	6.35	235.00
3	Planting of Plants raised in P/Bags	Nos	37	5.09	188.00
4	Carriage of plant in P. Bags over a distance of 2.00 km.uphill/downhill	KM/No.	37	4.43	164.00
5	Repair of fence post	Rmt.	10.08	4.19	43.00
				Total	1042.00


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THIRD TO TENTH YEAR MAINTENANCE (10% BEATING UP)

Name of work :- Construction of Motorable Link road from Daballa Danga to Chambar Km. 0/0 to 3/700

S.No	Descriptions	Unit	Qty.	Rate	Amount
1	Re-digging of pits 45x45x45cm.	Nos	144	11.13	1600.00
2	Filling of pits 45x45x45cm.	Nos	144	6.35	915.00
3	Planting of Plants raised in P/Bags	Nos	144	5.09	733.00
4	Carriage of plant in P. Bags over a distance of 2.00 km.uphill/downhill	KM/No.	144	4.43	638.00
5	Repair of fence post	Rmt.	10.08	4.19	43.00
				Total	3929.00


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