

**Name of Project : Diversion of 0.4908 ha of Forest Land for Construction of RCR from Sakyong PWD Road to Tinek Chisopani Dokey Gaon ,in East Sikkim .**

**Proposal No. FP/SK/ROAD/38739/2019/173**

**MUCK DISPOSAL PLAN**

**INTRODUCTION**

A large quantity of muck is expected to be generated as a result of construction of roads. Muck generated from excavation of any project component is required to be disposed in a planned manner so that it takes a least possible space and is not hazardous to the environment. The excavation shall result in large quantity of excavated material i.e. muck which have to be evacuated, disposed off and roller compacted or laid on mild slopes pari-passu with the excavation work to such designated areas where the muck piles do not substantially interfere with either environment / ecology or the river flow regime and do not cause turbidity impairing the quality of water. The disposal of muck has to be scientifically planned keeping in view the economic aspects necessitating nearness to the muck generating component of work, which understandably reduce the travel time of dumpers, less interference to surface flow and ground water aquifer and disposition of habitation.

Based on the quantities of surface excavation it has been formulated to manage the disposal of muck and restore such areas from further degradation of the environment. During construction of the project, huge quantities of excavation will be carried out from the surface components and shall be dumped in designated areas to provide stable slopes. The quantity of muck to be disposed has been worked out on the basis of 70% Hill cutting and 30% of Hill cutting shall be used for road surfacing.

**QUANTITY OF MUCK GENERATED AND ITS CONSUMPTIVE USE**

During construction of the various components of the project, muck is generated from hill cutting. Total quantity of muck / debris, generated due to the project, shall be 25,241.27 cum. Out of the total muck generated, 7,572.51 cum shall be utilized on project work leaving cum to be dumped at designated sites. The muck shall be properly dumped on slopes and treated to mix and match with the surrounding environment with least change in landscape.

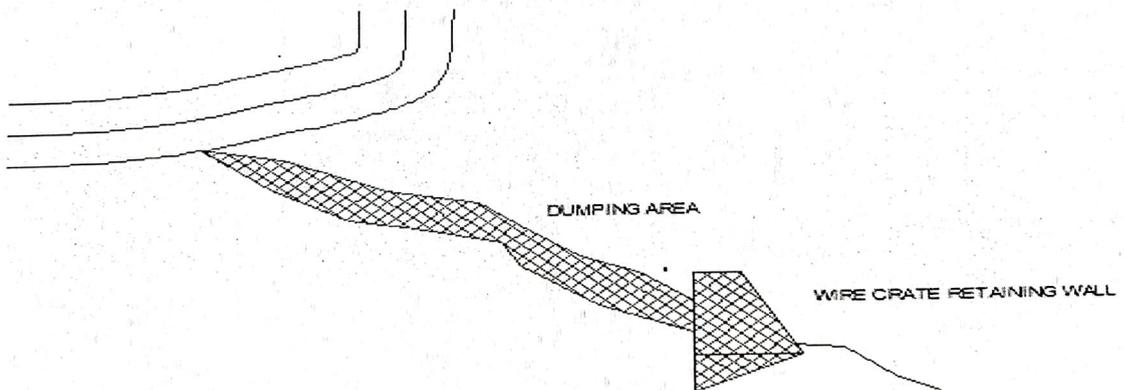
**Abstract of Muck Generated and its Disposal**

SI No.	Project Component	Total Quantity of Muck (cum)	Estimated Quantity of Muck proposed to be utilized (cum)	Estimated Quantity of Muck proposed to be dumped (cum)	Name of Dumping Site
1.	Hill Cutting	25,241.27	7,572.51	17,668.76	Tinek

## SELECTION OF MUCK DISPOSAL SITE

The selection of muck disposal sites was carried out considering the quantity of the muck, landscape, cost effectiveness, nearness to source of generation, absence of ground and surface water, relief and scope for afforestation works. All the dumping locations shall be well supported at base and at higher elevation by suitable retaining structures. Subsequently all the spoil tips (muck disposal sites) will be developed by taking up plantation to generate a thick forest canopy over them.

Sl No.	Name of Dumping Site	Location of Dumping Site	Area of Dumping Site (in Ha)	Volume of muck to be dumped (in cum)
1	Tinek	Lat. 27.1430° Long. 88.3002°	0.3960	17668.76



CROSECTION OF DUMPING AREA AND RETAINING WALL

## IMPLEMENTATION OF ENGINEERING MEASURES AT MUCK DISPOSAL SITE

It has been observed that after disposal of muck, it creates problem as it is susceptible to scattering unless the muck disposal yards are supported with engineering measures such as gabions. All the dumping sites need proper handling to avoid spilling of muck into the river water while dumping and in the post dumping stages. All the muck disposal sites have to be developed from the ground level either by providing stone masonry, hand packed wall or by gabion structure. The costing of engineering measures has been worked out based on gabion structure/hand packed . In all the muck dump sites, the

muck brought in dumpers shall be dumped and manually spread behind the crates and roller compacted in such a manner that rock mass is properly stacked behind the crates with minimum of voids.

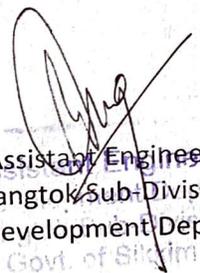
### ENGINEERING MEASURES

Retaining Wall-For stacking of dumped material retaining wall is proposed has been built before dumping of material to the sites. In addition, leveling also been done after dumping the material on every cycle and simultaneously improving the drainage of the disposal site. The methodology consists in developing the formation width is half cutting and half filling, so that the materials obtained from cutting are utilized in filling. The excavation on hill side has been done to get a stable slope for the materials encountered.

Enclosed: land Parcha ,( dumping site).  
No Objection Certificate of land owner.

  
Junior Engineer  
Gangtok sub-Division  
Rural Development Department  
Gangtok Sub-Division

  
Divisional Engineer (E2)  
Rural Development Department  
Gangtok Sub-Division  
Government of Sikkim  
Rural Development Department

  
Assistant Engineer  
Gangtok Sub-Division  
Rural Development Department  
Govt. of Sikkim

N O C

Date:

I Prem Kumar Gurung (resident of Upper  
tinet Sakyong Son of Karfi pd Gurung.  
I give the place for dumping soil for  
work of PMGSY Road.

Name of Contractor - Prahlad Gurung.

Plot no : 454/696.

  
Prem Kumar Gurung



Nabin Rai  
President  
43 Chiopani GP  
East Sikkim

Land Revenue and Disaster Management Department  
Government of Sikkim

धरया खतियान

SAKHYONG ब्लोकको खतियान      SANG इलाका      GANGTOK महकुमा      जिल्ला      सिक्किम राज्य

खतियान को नम्बर	बख्तियालाको नाम उनको बाबुको नाम जात अति बन्दे ठाऊ	बारी को नाम	खशराको नम्बर	जमीनको परीमाण			बाजो	जम्मा	बाग	इलाईची	खजाना नतिर्नु पर्ने जमिनको परिमाण	जमिनको एक साल को खजाना	कैफियत
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Checked  
10/05/12

ATTESTED

नयाँरको

गंगा-साङ्खु-सिक्किम  
REVENUE AND DISASTER  
DISTRICT COLLECTOR'S OFFICE  
Gangtok

निरक्षणको

Head Surveyor  
District Collector's Office  
Gangtok

Joint Director  
Disaster Management  
Gangtok-Sikkim

प्रमाणकर्ता

Regional Director  
District Collector's Office  
Eas. Gangtok