

NATURAL RESOURCES DEVELOPMENT CORPORATION LTD.
FIELD RECORDS & VOLUME CALCULATION OF 1.3KM KHOTOKHA FOREST ROAD 2024

Location : Khotokha, Khotokha FMU, Sha Region
 Name of Road : 1.3 km Forest Road
 Survey method : Zero line
 Road Length : 1300m

1 Mr. Bishal Subba, Civil Engineer, FRD, HO, NRDCL
 2 Mr. Leki Wangchuk, Khotokha Production In-Charge
 3 Mr. Tsewang, Field Assistant
 4 Mr. Jigyel, Field Assistant

St. No.	Grad. (%)	Dist. (m)	Side slope (%)	Rock comp (%)	Vol. per meter (m ³)		Total vol. (m ³)		Additional vol. (m ³)		Culvert ø (cm)	Remarks
					Soil	Rock	Soil	Rock	Soil	Rock		
1	3	4	5	6	7	8	9	10	11	12	13	14
1~2	8	10	60	0	6.13	-	61.30	0.00	-	-	-	
2~3	8	10	60	0	6.13	-	61.30	0.00	-	-	-	
3~4	8	10	60	0	6.13	-	61.30	0.00	-	-	-	
4~5	8	20	50	0	3.38	-	67.60	0.00	-	-	-	
5~6	8	10	60	0	6.13	-	61.30	0.00	-	-	-	
6~7	8	10	50	0	3.38	-	33.80	0.00	-	-	-	
7~8	8	10	50	0	3.38	-	33.80	0.00	-	-	-	
8~9	8	10	50	0	3.38	-	33.80	0.00	-	-	-	
9~10	8	10	50	0	3.38	-	33.80	0.00	-	-	-	
10~11	8	10	50	0	3.38	-	33.80	0.00	-	-	-	
11~12	8	10	60	0	6.13	-	61.30	0.00	-	-	-	
12~13	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
13~14	8	10	60	0	6.13	-	61.30	0.00	-	-	-	
14~15	8	10	60	0	6.13	-	61.30	0.00	-	-	-	
15~16	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
16~17	8	20	40	0	2.46	-	49.20	0.00	12.30	-	-	Passing Place 1
17~18	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
18~19	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
19~20	8	10	50	0	3.38	-	33.80	0.00	-	-	-	
20~21	8	10	30	0	1.70	-	17.00	0.00	-	-	-	
21~22	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
22~23	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
23~24	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
24~25	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
25~26	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
26~27	8	20	50	0	3.38	-	67.60	0.00	-	-	-	
27~28	8	10	40	0	2.46	-	24.60	0.00	-	-	-	
28~29	8	10	30	0	1.70	-	17.00	0.00	4.25	-	-	Passing Place 2

St. No.	Grad. (%)	Dist. (m)	Side slope (%)	Rock comp (%)	Vol. per meter (m ³)		Total vol. (m ³)		Additional vol. (m ³)		Culvert ø (cm)	Remarks
					Soil	Rock	Soil	Rock	Soil	Rock		
1	3	4	5	6	7	8	9	10	11	12	13	14
29~30	8	10	30	0	1.70	-	17.00	0.00	-	-	-	
30~31	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
31~32	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
32~33	8	10	50	0	3.38	-	33.80	0.00	-	-	-	
33~34	8	10	50	0	3.38	-	33.80	0.00	-	-	-	
34~35	8	10	30	0	1.70	-	17.00	0.00	-	-	-	
35~36	8	20	30	0	1.70	-	34.00	0.00	-	-	-	
36~37	8	20	20	0	1.04	-	20.80	0.00	-	-	-	
37~38	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
38~39	8	30	60	0	6.13	-	183.90	0.00	-	-	-	
39~40	8	15	60	0	6.13	-	91.95	0.00	-	-	-	Passing Place 3
40~41	8	25	70	0	10.50	-	262.50	0.00	65.63	-	-	
41~42	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
42~43	8	20	50	0	3.38	-	67.60	0.00	-	-	-	
43~44	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
44~45	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
45~46	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
46~47	8	20	40	0	2.46	-	49.20	0.00	-	-	-	
47~48	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
48~49	8	12	60	0	6.13	-	73.56	0.00	-	-	-	
49~50	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
50~51	8	10	70	0	10.50	-	105.00	0.00	-	-	-	Passing Place 4
51~52	8	20	90	0	20.45	-	409.00	0.00	102.25	-	-	
52~53	8	10	90	0	20.45	-	204.50	0.00	-	-	-	
53~54	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
54~55	8	10	70	0	10.50	-	105.00	0.00	-	-	-	
55~56	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
56~57	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
57~58	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
58~59	8	10	60	0	6.13	-	61.30	0.00	-	-	-	
59~60	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
60~61	8	15	60	0	6.13	-	91.95	0.00	-	-	-	
61~62	8	30	60	0	6.13	-	183.90	0.00	-	-	-	Passing Place 5
62~63	8	13	60	0	6.13	-	79.69	0.00	-	-	-	
63~64	8	10	50	0	3.38	-	33.80	0.00	8.45	-	-	

St. No.	Grad. (%)	Dist. (m)	Side slope (%)	Rock comp (%)	Vol. per meter (m ³)		Total vol. (m ³)		Additional vol. (m ³)		Culvert ø (cm)	Remarks
					Soil	Rock	Soil	Rock	Soil	Rock		
1	3	4	5	6	7	8	9	10	11	12	13	14
64~65	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
65~66	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
66~67	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
67~68	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
68~69	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
69~70	8	30	80	25	10.13	2.41	303.90	72.30	-	-	-	
70~71	8	10	80	0	13.50	-	135.00	0.00	-	-	-	
71~72	8	20	80	25	10.13	2.41	202.60	48.20	-	-	-	
72~73	8	30	70	50	5.25	3.25	157.50	97.50	-	-	-	Passing Place 6
73~74	8	20	60	0	6.13	-	122.60	0.00	30.65	-	-	
74~75	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
75~76	8	20	60	0	6.13	-	122.60	0.00	-	-	-	
76~77	8	20	70	0	10.50	-	210.00	0.00	-	-	-	
77~78	8	10	60	0	6.13	-	61.30	0.00	15.33	-	-	Passing Place 7
Total		1300					7,982.25	218.00	238.85	0.00	-	
Grand Total							8,221.10	218.00			-	



(Bishal Subba)
Civil Engineer
FRD, HO, NRDCL

Soil	8,221.10	m ³	97.42%
Rock	218.00	m ³	2.58%
Total	8,439.10	m³	100%

2. Road length : 1300.00 m
3. Cross drainages : 0 Nos. H/pipe culvert
4. No. of passing places : 7 Nos.
5. No. of Zigs : 0 Nos.
6. Gabion wall : 0.00m approx

Side slope	Cut Width (m)	Fill Width (m)	Total	Back cut slope (Batter)		Volume	
				Soil	Rock	Soil	Rock
10	3.00	2.00	5.00	1.5:1	5:1	0.48	0.46
20	3.00	2.00	5.00	1.5:1	5:1	1.04	0.95
30	3.00	2.00	5.00	1.5:1	5:1	1.70	1.43
40	3.00	2.00	5.00	1.5:1	5:1	2.46	1.95
50	3.00	2.00	5.00	1.5:1	5:1	3.38	2.50
60	3.50	1.50	5.00	1.5:1	5:1	6.13	4.18
70	4.00	1.00	5.00	1.5:1	5:1	10.50	6.50
80	4.50	0.50	5.00	2:1	5:1	13.50	9.64
90	5.00	0	5.00	2:1	5:1	20.45	13.73
100	5.00	0	5.00	2:1	5:1	25.00	15.63
110	5.00	0	5.00	2:1	5:1	30.55	17.63
120	5.00	0	5.00	2:1	5:1	37.50	19.75