

**NATURAL RESOURCES DEVELOPMENT CORPORATION LTD.**  
**FIELD RECORDS & VOLUME CALCULATION OF 3.0KM RODHUNGLA FOREST ROAD 2024**

Location : Rodhungla, Tang FMU, Jakar Region  
 Name of Road : 3.00 km Forest Road  
 Survey method : Zero line  
 Road Length : 3000m

- 1 Mr. Bishal Subba, Civil Engineer, FRD, HO, NRDCL
- 2 Mr. Chojay Norbu, Production In-Charge (Rodhungla)
- 3 Mr. Kelzang, Sr.FA,Rodhungla unit
- 4 Mr. Tashi, Depot care taker
- 5 Mr. Dorji Drakpa, Forest Ranger II
- 6 Mr. Tempa Nima, Forest Ranger II
- 7 Ms. Kelzang Choden, Forest Officer

St. No.	Grad. (%)	Dist. (m)	Side slope (%)	Rock comp. (%)	Vol. per meter (m <sup>3</sup> )		Total vol. (m <sup>3</sup> )		Additional vol. (m <sup>3</sup> )		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	20	10	0	0.48	-	9.60	0.00	-	-	-	start point hume pipe 45cm no drm wall
2~3	8	26	50	0	3.38	-	87.88	0.00	-	-	-	
3~4	8	20	90	0	20.45	-	409.00	0.00	-	-	-	
4~5	8	20	90	0	20.45	-	409.00	0.00	-	-	-	Gabion wall 60m
5~6	8	20	90	0	20.45	-	409.00	0.00	-	-	-	
6~7	8	20	80	0	13.50	-	270.00	0.00	-	-	-	
7~8	8	14	10	0	0.48	-	6.72	0.00	-	-	-	
8~9	8	12	10	0	0.48	-	5.76	0.00	-	-	-	zig 1
9~10	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
10~11	8	22	50	0	3.38	-	74.36	0.00	18.59	-	-	Passing place 1
11~12	8	12	50	0	3.38	-	40.56	0.00	-	-	-	zig 2
12~13	8	20	30	0	1.70	-	34.00	0.00	-	-	-	
13~14	8	20	30	0	1.70	-	34.00	0.00	-	-	-	
14~15	8	20	10	0	0.48	-	9.60	0.00	-	-	-	
15~16	8	20	10	0	0.48	-	9.60	0.00	-	-	-	
16~17	8	30	30	0	1.70	-	51.00	0.00	-	-	-	
17~18	8	30	30	0	1.70	-	51.00	0.00	-	-	-	
18~19	8	30	30	0	1.70	-	51.00	0.00	-	-	-	marshy, cross drain 5
19~20	8	30	40	0	2.46	-	73.80	0.00	18.45	-	-	Passing place 2
20~21	8	20	40	0	2.46	-	49.20	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	30	40	0	2.46	-	73.80	0.00	-	-	-	
24~25	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
25~26	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
26~27	8	30	50	0	3.38	-	101.40	0.00	-	-	-	marshy area, cross drain 5
27~28	8	30	30	0	1.70	-	51.00	0.00	12.75	-	-	Passing place 3
28~29	8	30	30	0	1.70	-	51.00	0.00	-	-	-	

St. No.	Grad. (%)	Dist. (m)	Side slope (%)	Rock comp. (%)	Vol. per meter (m <sup>3</sup> )		Total vol. (m <sup>3</sup> )		Additional vol. (m <sup>3</sup> )		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	30	10	0	0.48	-	14.40	0.00	-	-	-	
30~31	8	30	10	0	0.48	-	14.40	0.00	-	-	-	
31~32	8	30	20	0	1.04	-	31.20	0.00	-	-	-	
32~33	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
33~34	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
34~35	8	30	60	0	6.13	-	183.90	0.00	45.98	-	-	Passing place 4
35~36	8	30	60	0	6.13	-	183.90	0.00	-	-	-	
36~37	8	30	60	0	6.13	-	183.90	0.00	-	-	-	
37~38	8	20	20	0	1.04	-	20.80	0.00	-	-	-	
38~39	8	15	10	0	0.48	-	7.20	0.00	-	-	-	
39~40	8	12	30	0	1.70	-	20.40	0.00	-	-	-	zig 3
40~41	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
41~42	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
42~43	8	19	50	0	3.38	-	64.22	0.00	-	-	-	zig 4
43~44	8	12	40	0	2.46	-	29.52	0.00	-	-	-	zig 5
44~45	8	30	40	0	2.46	-	73.80	0.00	18.45	-	-	Passing place 5
45~46	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
46~47	8	30	60	0	6.13	-	183.90	0.00	-	-	-	
47~48	8	30	60	0	6.13	-	183.90	0.00	-	-	-	
48~49	8	30	80	0	13.50	-	405.00	0.00	-	-	-	
49~50	8	30	80	0	13.50	-	405.00	0.00	-	-	-	
50~51	8	16	80	0	13.50	-	216.00	0.00	-	-	-	
51~52	8	15	60	0	6.13	-	91.95	0.00	22.99	-	-	Passing place 6
52~53	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
53~54	8	30	80	0	13.50	-	405.00	0.00	-	-	-	
54~55	8	30	80	0	13.50	-	405.00	0.00	-	-	1.00	hume pipe @ 60% side slope
55~56	8	30	50	0	3.38	-	101.40	0.00	-	-	-	valley
56~57	8	19	80	0	13.50	-	256.50	0.00	-	-	-	ridge
57~58	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
58~59	8	30	40	0	2.46	-	73.80	0.00	18.45	-	-	Passing place 7
59~60	8	30	40	0	2.46	-	73.80	0.00	-	-	1.00	hume pipe @ 40 % side slope
60~61	8	30	70	0	10.50	-	315.00	0.00	-	-	-	
61~62	8	30	70	0	10.50	-	315.00	0.00	-	-	-	
62~63	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
63~64	8	30	40	0	2.46	-	73.80	0.00	-	-	-	

St. No.	Grad. (%)	Dist. (m)	Side slope (%)	Rock comp. (%)	Vol. per meter (m <sup>3</sup> )		Total vol. (m <sup>3</sup> )		Additional vol. (m <sup>3</sup> )		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	30	40	0	2.46	-	73.80	0.00	-	-	-	
65~66	8	30	60	0	6.13	-	183.90	0.00	45.98	-	-	Passing place 8
66~67	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
67~68	8	30	70	0	10.50	-	315.00	0.00	-	-	-	
68~69	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
69~70	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
70~71	8	30	70	50	5.25	3.25	157.50	97.50	-	-	1.00	hume pipe @ 60% side slope, small creek
71~72	8	30	70	50	5.25	3.25	157.50	97.50	-	-	-	
72~73	8	30	110	75	7.64	13.23	229.20	396.90	57.30	-	-	Passing place 9
73~74	8	30	110	100	-	17.63	0.00	528.90	-	-	1.00	hume pipe @ 60% side slope
74~75	8	30	120	100	-	19.75	0.00	592.50	-	-	-	
75~76	8	15	120	0	37.50	-	562.50	0.00	-	-	-	
76~77	8	30	70	50	5.25	3.25	157.50	97.50	-	-	-	
77~78	8	30	80	25	10.13	2.41	303.90	72.30	-	-	-	
78~79	8	30	50	25	2.54	0.63	76.20	18.90	-	-	1.00	hume pipe @ 40 % side slope
79~80	8	12	50	0	3.38	-	40.56	0.00	-	-	-	
80~81	8	30	50	0	3.38	-	101.40	0.00	-	-	-	zig 6
81~82	8	10	50	0	3.38	-	33.80	0.00	8.45	-	-	Passing place 10
82~83	8	12	50	0	3.38	-	40.56	0.00	-	-	-	zig 7
83~84	8	30	40	0	2.46	-	73.80	0.00	-	-	1.00	hume pipe @ 30 % side slope
84~85	8	30	20	0	1.04	-	31.20	0.00	-	-	-	
85~86	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
86~87	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
87~88	8	30	40	0	2.46	-	73.80	0.00	-	-	1.00	hume pipe @ 40% side slope
88~89	8	30	50	0	3.38	-	101.40	0.00	25.35	-	-	Passing place 11
89~90	8	12	30	0	1.70	-	20.40	0.00	-	-	-	zig 8
90~91	8	30	30	0	1.70	-	51.00	0.00	-	-	1.00	hume pipe @ 40 % side slope
91~92	8	30	30	0	1.70	-	51.00	0.00	-	-	-	
92~93	8	12	50	0	3.38	-	40.56	0.00	-	-	-	
93~94	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
94~95	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
95~96	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
96~97	8	30	40	0	2.46	-	73.80	0.00	18.45	-	-	Passing place 12
97~98	8	30	70	0	10.50	-	315.00	0.00	-	-	-	
98~99	8	30	70	0	10.50	-	315.00	0.00	-	-	1.00	hume pipe @ 60% side slope
99~100	8	30	70	0	10.50	-	315.00	0.00	-	-	-	
100~101	8	30	70	0	10.50	-	315.00	0.00	-	-	1.00	hume pipe at 60% side slope
101~102	8	30	120	0	37.50	-	1125.00	0.00	-	-	-	
102~103	8	30	30	0	1.70	-	51.00	0.00	-	-	-	

St. No.	Grad. (%)	Dist. (m)	Side slope (%)	Rock comp. (%)	Vol. per meter (m <sup>3</sup> )		Total vol. (m <sup>3</sup> )		Additional vol. (m <sup>3</sup> )		Culvert ø (cm)	Remarks
					Soil	Rock	Soil	Rock	Soil	Rock		
1	3	4	5	6	7	8	9	10	11	12	13	14
103~104	8	30	40	0	2.46	-	73.80	0.00	18.45	-	-	Passing place 13
104~105	8	23	40	0	2.46	-	56.58	0.00	-	-	-	
105~106	8	12	60	0	6.13	-	73.56	0.00	-	-	-	zig 9
106~107	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
107~108	8	12	50	0	3.38	-	40.56	0.00	-	-	-	
108~109	8	12	40	0	2.46	-	29.52	0.00	-	-	-	zig 10
109~110	8	30	100	0	25.00	-	750.00	0.00	-	-	-	
110~111	8	30	90	0	20.45	-	613.50	0.00	-	-	-	
111~112	8	30	90	0	20.45	-	613.50	0.00	-	-	-	
112~113	8	30	50	0	3.38	-	101.40	0.00	25.35	-	-	Passing place 14
113~114	8	30	50	0	3.38	-	101.40	0.00	-	-	-	
114~115	8	30	50	0	3.38	-	101.40	0.00	-	-	1.00	hume pipe @ 60% side slope
115~116	8	30	40	0	2.46	-	73.80	0.00	-	-	-	
116~117	8	15	70	0	10.50	-	157.50	0.00	-	-	1.00	hume pipe @ 60% side slope
<b>Total</b>		3001					<b>16,718.17</b>	<b>1,902.00</b>	<b>354.98</b>	<b>0.00</b>	<b>12.00</b>	
<b>Grand Total</b>							<b>17,073.15</b>	<b>1,902.00</b>			<b>12.00</b>	



(Bishal Subba)  
Civil Engineer  
FRD, HO, NRDCL

#### ABSTRACT

##### 1. Formation Excavation

Soil	17,073.15	m <sup>3</sup>	89.98%
Rock	1,902.00	m <sup>3</sup>	10.02%
<b>Total</b>	<b>18,975.15</b>	<b>m<sup>3</sup></b>	<b>100%</b>

2. Road length : 3000.00 m  
3. Cross drainages : 12 Nos. H/pipe culvert  
4. No. of passing places : 14 Nos.  
5. No. of Zigs : 10 Nos.  
6. Gabion wall : 60m approx