

CHAPTER - 2

PROJECT DESCRIPTION

2.1 GENERAL

Transport plays a vital role in the economic and social development of a country. The demand for inter-city freight transport in India is expected to double every 12 years while the demand for passenger transport is expected to double every eight or nine years. With high growth of traffic, congestion becomes inevitable and loss due to accidents also increases. Additional capacity has to be created by widening the roads to multi-lane standards and/or by strengthening the existing pavement crust. The Government of India aims at improving and developing the road infrastructure of the National Highway in the State of Mizoram for MORT&H, Government of India.

The Ministry of Road Transport and Highway has decided to take up the development of existing NH-54 section from Km 125.00 to 250.00 to 2-lane with paved shoulders National Highway Standards.

The consultancy assignment has been awarded to Holtec consulting Pvt. Ltd for preparation of Detailed Project Report for up-gradation of the above highway sector.

The consultant had submitted the detail design report of project road vide letter No. 09526 dated 23 Nov 2011. The project has now handed over to NHIDCL vide letter No. NH-12037/182/2015/SARDP-NE dated 16th April 2015 and project to be funded by Japan International Corporation Agency (JICA). There after JICA team has been checking the DPR. The JICA team has proposed modifications in DPR with some revised policy decisions and updated IRC codes.

2.2 LOCATION STUDY OF THE PROJECT ROAD

2.2.1 Project Location

Project road is a section of NH-54 in the state of Mizoram . NH-54 starts from Dabaka, Assam at the intersection of NH-36 and terminate at Tuipang in the state of Mizoram and traverse via silcher, Aizwal, Serchip, Keitum, Pangzawl, Thiltlang Leite, Hrangchawkawn, Thualthu, Thwipui, Lawngtlai town.



Project road lies in the Serchhip , Lunglei and Lawngtlai districts. Inter state border of Mizoram is with Assam, Tripura and Manipur and international border is with Myanmar and Bangladesh.

2.2.2 Project Road

The project road starts from km 125 of NH-54 at Keitum village (Distt. Serchhip) and ends at km 250 of NH-54 near Thualthu village (Distt. Lawngtlai) in the state of Mizoram.

The existing length of the project road is 125.00 kms. The Index Map of project road is shown in fig: 2.1

Fig: 2.1 – Index Map



2.2.3 Connectivity

Project road connects to Aizawl by road. Aizawl, the Capital of Mizoram is 180 Kms. from Silchar, which is the nearest railhead. The bus journey from Silchar to Aizawl usually takes about 6 hours. Mizoram State Transport Buses ply between Aizawl and Silchar daily. There is daily Air Service between Calcutta and Aizawl and Guwahati and Aizawl.

2.3 LAND

Mizoram is a mountainous region, no revenue map are available along the project road alignment. Existing available width of ROW varies from 7m to 12m.

2.4 TERRAIN

Mizoram has the most variegated hilly terrain in eastern part of India. The hills are steep and are separated by rivers. The average height of the hills is about 900 meters. The highest peak in Mizoram is the Blue Mountain (Phawngpuri) with a height of 2210 meters.

Hill and valley location of the project road are shown below:

Sr no.	Location (Km)		LHS	RHS
	From	To		
1	125.000	125.200	Valley	Hill
2	125.260	131.220	Valley	Hill
3	131.380	132.960	Valley	Hill
4	133.220	134.540	Valley	Hill
5	134.700	135.960	Valley	Hill
6	135.980	136.380	Valley	Hill
7	136.380	136.510	Hill	Valley
8	136.580	136.760	Hill	Valley
9	136.760	141.480	Valley	Hill
10	141.490	141.560	Hill	Valley
11	141.570	141.650	Valley	Hill
12	141.780	145.720	Valley	Hill
13	145.760	158.600	Valley	Hill
14	158.640	159.520	Valley	Hill
15	159.540	162.005	Hill	Valley
16	162.050	163.260	Valley	Hill
17	163.260	164.320	Hill	Valley
18	164.350	167.960	Hill	Valley
19	167.990	168.060	Hill	Valley
20	168.120	168.480	Valley	Hill
21	168.500	169.920	Valley	Hill
22	169.960	178.970	Hill	Valley
23	179.080	179.480	Valley	Hill
24	179.520	179.600	Valley	Hill



25	179.680	180.270	Valley	Hill
26	180.280	180.340	Valley	Hill
27	180.340	180.400	Hill	Hill
28	180.400	181.760	Hill	Valley
29	181.800	208.980	Valley	Hill
30	209.000	212.180	Valley	Hill
31	212.300	212.610	Hill	Valley
32	212.690	213.700	Valley	Hill
33	213.740	250.000	Hill	Valley

2.5 CLIMATE

Mizoram has a pleasant climate. It is generally cool in summer and not very cold in winter. During winter, the temperature varies from 11° C to 21°C and in the summer it varies between 20°C and 29°C. The entire area is under the direct influence of the monsoon. It rains heavily from May to September and the average rainfall is 254 cm. per annum. The average rainfall in Aizawl is 208 cm and Lunglei has 350 cm rainfall.

2.6 EXISTING ALIGNMENT AND GEOMETRICS

This project road stretch was constructed by BRO as an emergency requirement. Due to the difficulty in supervision and execution, the grades and formation width in various stretches are not conforming to the National Highway standard. Improvement works have been done over a period of time under various NH scheme. It has been recently transferred from BRO to MPWD (NH).

The existing road is a single lane with extra widening at curve locations.

Horizontal Alignment: At places, the geometric of the existing road alignment does not confirm to the National Highways Standards of the hill roads as per IRC-SP-48 1996.

Vertical Alignment: The vertical profile of the road is fair and meets the National Highway Standards except in certain stretches and hair pin bend locations.

Camber / Cross fall / Super-elevation: The project road needs well-defined Camber / Cross fall / Super-elevation.

2.7 EXISTING ROAD CONDITION

The existing road condition is fair to poor from km 125 to Km 215 and poor to very poor from Km 215 to Km 250.



2.8 HABITATION ALONG THE PROJECT ROAD

The following towns/villages exist along the project road. The list of the habitations along the project road are presented in Table given below

Sr no.	Village Name	Existing Chainage (Km)		Length (Km)
		From	To	
1	KEITUM	125.000	126.280	1.280
2	BUNGTLANG	132.000	134.900	2.900
3	RAWPUI	138.100	139.650	1.550
4	PANGZAWL	149.400	153.900	4.500
5	THILTLANG	161.460	162.650	1.190
		164.100	164.500	0.400
6	HNAHTHIAL	170.460	173.400	2.940
7	LEITE	184.400	186.200	1.800
8	MAUDARH	193.200	193.500	0.300
9	DAWN	208.600	209.400	0.800
10	ZOBAWK	216.900	222.300	5.400
11	HRANGCHALKAWN	223.400	224.200	0.800
12	THAIZAWL	228.200	228.500	0.300
13	BUALTE	233.050	235.100	2.050
14	THUALTHU	244.500	245.900	1.400

2.9 Bridges

There are 3 minor bridges and 1 major bridge exist on the project road.

S. No	Structure Type	Location	Brief Description
1	Minor Bridge	Km 186.610	This is a minor bridge located across Maudarhlui River. It is a bridge of R.C.C T Beam with clear span of 11.0 m. The carriageway width is 4.30 m with railing on both sides. The Bridge is in a very poor condition.
2	Major Bridge	Km 189.800	This is a major bridge located on River Mat. It is 3 spans Bridge with 2 piers and two abutments. The span arrangement is 1 X 16.70 + 1 X 45.10 + 1 X 31.20. Total length is 98.0 m with carriageway width of 7.5m with

			railing on both side. The bridge is in good condition.
3	Minor Bridge	Km 194.710	This is a minor bridge located across a nalla. It is a bridge of clear span of 8.0 m. The carriageway width is 4.70 m. The Bridge is in a very poor condition.
4	Minor Bridge	Km 212.175	This is a minor bridge located across a nalla. It is a bridge of clear span of 8.0 m. The carriageway width is 4.30 m. The Bridge is in a very poor condition.

2.10 Culverts

There are 596 culverts exist on project road. Out of 596 culverts, 456 Nos are of RCC slab, 34 Nos Hume pipe culverts, 101 Nos AMCO culverts & 5 Nos chocked culverts. Most of the culverts are in poor condition.

S.No.	Existing Road Chainage (km)	Type of Culvert (HP/Slab/Box/AMCO)	Span Arrangement & Vent Height of Existing Culvert
1	125.010	RCC SLAB	1 X 0.90
2	125.320	RCC SLAB	1 X 0.90
3	125.400	RCC SLAB	1 X 1.00
4	125.440	RCC SLAB	1 X 0.90
5	125.550	RCC SLAB	1 X 0.90
6	125.580	RCC SLAB	1 X 1.00
7	125.760	RCC SLAB	1 X 1.00
8	126.005	RCC SLAB	1 X 1.00
9	126.150	Chocked	-
10	126.400	RCC SLAB	1 X 0.90
11	126.435	RCC SLAB	1 X 2.00
12	126.660	RCC SLAB	1 X 2.20
13	126.700	RCC SLAB	1 X 0.90
14	126.810	AMCO	1 X 1.00
15	126.880	RCC SLAB	1 X 0.90
16	127.030	HP	1 X 1.20
17	127.100	RCC SLAB	1 X 0.90
18	127.360	RCC SLAB	1 X 0.90



19	127.650	RCC SLAB	1 X 0.90
20	127.710	RCC SLAB	1 X 0.90
21	127.990	HP	1 X 1.20
22	128.220	HP	1 X 1.20
23	128.290	HP	1 X 1.20
24	128.535	HP	1 X 1.20
25	128.645	HP	1 X 1.20
26	128.795	HP	1 X 1.20
27	128.945	RCC SLAB	1 X 0.90
28	129.100	RCC SLAB	1 X 0.90
29	129.640	RCC SLAB	1 X 0.90
30	129.880	HP	1 X 1.20
31	130.060	AMCO	1 X 0.90
32	130.320	RCC SLAB	1 X 0.90
33	130.520	AMCO	2 X 0.65
34	130.710	AMCO	1 X 0.90
35	130.780	AMCO	1 X 0.90
36	131.520	AMCO	1 X 0.90
37	131.640	AMCO	1 X 0.90
38	131.970	AMCO	1 X 0.90
39	132.060	RCC SLAB	1 X 1.00
40	132.120	RCC SLAB	1 X 0.90
41	133.030	RCC SLAB	1 X 1.00
42	133.720	HP	1 X 0.90
43	133.790	HP	1 X 0.90
44	134.000	RCC SLAB	1 X 1.00
45	134.100	RCC SLAB	1 X 1.00
46	134.280	RCC SLAB	1 X 1.00
47	134.720	HP	1 X 0.90
48	134.780	RCC SLAB	1 X 0.90
49	135.600	RCC SLAB	1 X 0.90
50	135.850	RCC SLAB	1 X 1.00
51	136.660	RCC SLAB	1 X 1.00
52	136.910	Chocked	
53	137.070	RCC SLAB	1 X 1.00
54	137.440	RCC SLAB	1 X 0.90
55	137.630	AMCO	Chocked
56	137.730	AMCO	Chocked
57	137.980	RCC SLAB	Chocked
58	138.270	RCC SLAB	1 X 1.00
59	138.390	Chocked	
60	138.410	Chocked	
61	138.500	Chocked	
62	138.800	RCC SLAB	1 X 1.00
63	138.910	RCC SLAB	Chocked
64	139.130	RCC SLAB	1 X 1.00
65	139.380	RCC SLAB	1 X 1.00

66	139.810	RCC SLAB	1 X 1.00
67	141.050	RCC SLAB	1 X 0.90
68	141.150	RCC SLAB	1 X 0.90
69	141.390	RCC SLAB	1 X 0.90
70	141.930	RCC SLAB	1 X 0.90
71	142.180	RCC SLAB	1 X 0.90
72	142.290	AMCO	1 X 0.90
73	142.390	RCC SLAB	1 X 1.50
74	142.550	RCC SLAB	1 X 0.90
75	142.680	RCC SLAB	1 X 0.90
76	142.800	RCC SLAB	1 X 0.90
77	142.950	RCC SLAB	1 X 0.90
78	143.130	RCC SLAB	1 X 0.90
79	143.360	AMCO	1 X 0.90
80	143.395	AMCO	1 X 0.90
81	143.540	AMCO	1 X 0.90
82	143.690	RCC SLAB	1 X 0.90
83	143.950	RCC SLAB	1 X 0.90
84	144.095	AMCO	1 X 0.90
85	144.270	AMCO	1 X 0.65
86	144.510	AMCO	1 X 0.65
87	144.905	AMCO	1 X 0.65
88	145.030	AMCO	1 X 0.70
89	145.550	RCC SLAB	1 X 0.90
90	146.005	RCC SLAB	1 X 0.90
91	146.230	AMCO	1 X 1.00
92	146.280	RCC SLAB	1 X 0.80
93	146.340	RCC SLAB	1 X 0.60
94	146.500	RCC SLAB	1 X 0.90
95	146.780	RCC SLAB	1 X 0.90
96	147.120	RCC SLAB	1 X 0.90
97	147.340	RCC SLAB	1 X 0.90
98	147.500	RCC SLAB	1 X 0.90
99	147.620	AMCO	1 X 0.90
100	147.790	RCC SLAB	1 X 0.90
101	147.970	RCC SLAB	Chocked
102	148.030	RCC SLAB	1 X 0.90
103	148.120	AMCO	1 X 0.6
104	148.610	AMCO	Chocked
105	148.640	AMCO	Chocked
106	148.730	RCC SLAB	1 X 0.90
107	149.020	RCC SLAB	1 X 1.50
108	149.060	AMCO	1 X 0.65
109	149.190	RCC SLAB	1 X 0.90
110	149.350	RCC SLAB	1 X 2.0
111	149.680	RCC SLAB	1 X 1.00
112	149.870	RCC SLAB	1 X 1.00



113	150.060	RCC SLAB	1 X 1.00
114	150.560	RCC SLAB	1 X 1.00
115	150.700	RCC SLAB	1 X 1.00
116	150.770	RCC SLAB	1 X 1.50
117	150.880	RCC SLAB	1 X 1.50
118	151.180	RCC SLAB	1 X 1.50
119	151.480	AMCO	1 X 0.60
120	152.000	RCC SLAB	1 X 1.00
121	152.360	RCC SLAB	1 X 0.90
122	152.440	AMCO	1 X 1.00
123	152.620	RCC SLAB	1 X 0.90
124	152.770	AMCO	1 X 0.60
125	153.370	RCC SLAB	1 X 1.50
126	153.525	AMCO	1 X 0.60
127	153.750	AMCO	1 X 0.60
128	153.950	RCC SLAB	1 X 0.65
129	154.010	RCC SLAB	1 X 1.00
130	154.150	AMCO	1 X 0.65
131	154.400	AMCO	1 X 0.65
132	154.560	AMCO	1 X 0.65
133	154.640	RCC SLAB	1 X 0.90
134	154.880	RCC SLAB	1 X 1.00
135	154.960	RCC SLAB	1 X 0.90
136	155.060	RCC SLAB	1 X 1.00
137	155.650	RCC SLAB	1 X 1.5
138	155.940	RCC SLAB	1 X 1.00
139	156.070	RCC SLAB	1 X 1.00
140	156.190	AMCO	1 X 0.80
141	156.300	AMCO	1 X 0.80
142	156.360	RCC SLAB	1 X 2.0
143	156.930	RCC SLAB	1 X 0.90
144	157.220	RCC SLAB	1 X 0.90
145	157.500	RCC SLAB	1 X 1.50
146	157.740	RCC SLAB	1 X 0.90
147	157.940	RCC SLAB	1 X 0.90
148	158.120	RCC SLAB	1 X 1.00
149	158.470	RCC SLAB	1 X 0.90
150	159.170	AMCO	1 X 0.90
151	160.160	RCC SLAB	1 X 0.90
152	160.590	RCC SLAB	1 X 0.90
153	160.770	RCC SLAB	1 X 0.60
154	161.030	AMCO	1 X 0.80
155	161.170	RCC SLAB	1 X 0.90
156	161.240	RCC SLAB	1 X 1.00
157	161.725	RCC SLAB	1 X 1.00
158	162.200	AMCO	1 X 0.90
159	162.465	AMCO	1 X 1.00

160	162.780	AMCO	-
161	162.920	RCC SLAB	-
162	163.050	RCC SLAB	1 X 0.60
163	163.590	RCC SLAB	1 X 0.90
164	163.690	RCC SLAB	1 X 1.00
165	163.820	AMCO	1 X 1.00
166	164.120	AMCO	1 X 0.90
167	164.800	RCC SLAB	1 X 0.90
168	165.010	RCC SLAB	1 X 0.60
169	165.220	RCC SLAB	1 X 1.20
170	165.335	RCC SLAB	1 X 1.7
171	165.620	RCC SLAB	1 X 1.00
172	165.680	AMCO	1 X 0.90
173	165.800	RCC SLAB	1 X 1.00
174	165.920	RCC SLAB	1 X 0.60
175	166.080	AMCO	1 X 0.90
176	166.190	RCC SLAB	1 X 1.00
177	166.360	RCC SLAB	1 X 1.00
178	166.450	RCC SLAB	1 X 0.90
179	166.545	AMCO	1 X 0.90
180	166.790	RCC SLAB	1 X 0.90
181	166.930	AMCO	1 X 0.90
182	167.000	RCC SLAB	1 X 0.90
183	167.100	RCC SLAB	1 X 0.90
184	167.400	RCC SLAB	1 X 0.90
185	167.495	RCC SLAB	1 X 0.70
186	167.740	AMCO	1 X 0.90
187	167.800	RCC SLAB	1 X 0.90
188	168.685	RCC SLAB	1 X 0.90
189	168.830	RCC SLAB	1 X 0.60
190	169.230	RCC SLAB	1 X 0.60
191	169.380	RCC SLAB	1 X 0.90
192	169.500	AMCO	1 X 0.90
193	169.570	AMCO	1 X 0.90
194	170.085	RCC SLAB	1 X 0.90
195	170.225	AMCO	1 X 0.90
196	170.420	RCC SLAB	1 X 1.00
197	170.600	RCC SLAB	1 X 0.70
198	170.740	RCC SLAB	1 X 0.90
199	171.290	RCC SLAB	1 X 1.00
200	171.420	RCC SLAB	1 X 0.90
201	171.920	RCC SLAB	1 X 0.90
202	172.005	RCC SLAB	1 X 1.50
203	172.400	RCC SLAB	1 X 1.50
204	172.790	RCC SLAB	1 X 1.50
205	173.060	RCC SLAB	1 X 1.50
206	173.150	RCC SLAB	1 X 1.50



207	173.300	RCC SLAB	1 X 0.60
208	173.620	RCC SLAB	1 X 1.50
209	173.810	AMCO	1 X 0.90
210	173.850	RCC SLAB	1 X 1.50
211	174.170	RCC SLAB	1 X 1.00
212	174.410	RCC SLAB	1 X 0.90
213	174.850	AMCO	1 X 0.90
214	175.110	RCC SLAB	Chocked
215	175.230	AMCO	1 X 0.90
216	175.385	RCC SLAB	1 X 1.50
217	175.465	RCC SLAB	1 X 0.90
218	175.620	RCC SLAB	1 X 1.50
219	175.850	AMCO	1 X 0.90
220	175.955	RCC SLAB	1 X 0.90
221	176.185	RCC SLAB	1 X 0.80
222	176.330	RCC SLAB	1 X 1.00
223	176.530	RCC SLAB	1 X 1.50
224	176.590	RCC SLAB	1 X 0.90
225	176.830	RCC SLAB	1 X 1.00
226	176.920	RCC SLAB	1 X 1.00
227	177.000	AMCO	1 X 0.90
228	177.170	RCC SLAB	1 X 1.00
229	177.370	RCC SLAB	1 X 1.00
230	177.470	RCC SLAB	1 X 1.00
231	177.605	RCC SLAB	1 X 0.6
232	177.720	RCC SLAB	1 X 0.90
233	177.890	RCC SLAB	1 X 0.60
234	178.210	RCC SLAB	1 X 0.6
235	178.260	AMCO	1 X 0.90
236	178.310	RCC SLAB	1 X 3.25
237	178.480	RCC SLAB	1 X 1.00
238	178.800	RCC SLAB	1 X 0.60
239	179.250	RCC SLAB	1 X 3.25
240	179.350	RCC SLAB	1 X 1.00
241	179.770	RCC SLAB	1 X 0.60
242	180.060	RCC SLAB	1 X 1.00
243	180.225	RCC SLAB	1 X 0.90
244	180.530	RCC SLAB	1 X 0.80
245	180.660	RCC SLAB	1 X 1.50
246	180.730	RCC SLAB	1 X 1.00
247	181.060	RCC SLAB	1 X 1.00
248	181.360	RCC SLAB	1 X 1.50
249	181.605	RCC SLAB	1 X 1.00
250	182.190	AMCO	1 X 0.90
251	182.375	RCC SLAB	1 X 1.00
252	182.515	RCC SLAB	1 X 0.80
253	182.620	RCC SLAB	1 X 1.00

254	182.830	AMCO	1 X 0.90
255	182.980	AMCO	1 X 0.90
256	183.310	RCC SLAB	1 X 1.00
257	183.560	RCC SLAB	1 X 1.00
258	183.720	RCC SLAB	1 X 1.00
259	183.960	RCC SLAB	1 X 0.60
260	184.060	RCC SLAB	1 X 1.00
261	184.120	RCC SLAB	1 X 1.5
262	184.250	RCC SLAB	1 X 1.00
263	184.560	RCC SLAB	1 X 0.60
264	184.620	RCC SLAB	1 X 1.00
265	184.784	RCC SLAB	1 X 1.00
266	185.080	RCC SLAB	1 X 1.00
267	185.320	RCC SLAB	1 X 1.00
268	186.000	RCC SLAB	1 X 1.00
269	186.420	RCC SLAB	1 X 2.0
270	186.440	RCC SLAB	1 X 1.50
271	186.745	RCC SLAB	1 X 1.0
272	186.840	RCC SLAB	1 X 1.50
273	187.040	RCC SLAB	1 X 1.50
274	187.210	RCC SLAB	1 X 1.50
275	187.410	RCC SLAB	1 X 0.90
276	187.880	RCC SLAB	1 X 0.90
277	188.100	RCC SLAB	1 X 1.0
278	188.340	RCC SLAB	1 X 1.0
279	188.530	RCC SLAB	1 X 1.0
280	188.610	RCC SLAB	1 X 0.80
281	188.680	RCC SLAB	1 X 0.6
282	189.220	RCC SLAB	1 X 1.0
283	189.590	RCC SLAB	1 X 1.0
284	189.610	RCC SLAB	1 X 0.6
285	189.970	AMCO	1 X 0.70
286	190.040	AMCO	1 X 0.80
287	190.100	RCC SLAB	1 X 1.0
288	190.160	RCC SLAB	1 X 0.90
289	190.310	AMCO	1 X 1.0
290	190.390	RCC SLAB	1 X 0.90
291	190.580	RCC SLAB	1 X 0.90
292	190.710	RCC SLAB	1 X 0.90
293	190.965	RCC SLAB	1 X 0.90
294	191.250	RCC SLAB	1 X 0.90
295	191.450	AMCO	1 X 0.6
296	191.800	AMCO	1 X 0.90
297	191.940	RCC SLAB	1 X 0.90
298	192.100	RCC SLAB	1 X 0.60
299	192.530	AMCO	2 X 0.60
300	192.670	AMCO	2 X 0.60



301	192.720	AMCO	1 X 0.60
302	192.840	AMCO	1 X 1.0
303	192.950	AMCO	1 X 0.90
304	193.180	AMCO	1 X 0.90
305	193.440	AMCO	1 X 1.0
306	193.610	AMCO	1 X 0.60
307	193.750	AMCO	1 X 0.9
308	194.030	RCC SLAB	1 X 0.90
309	194.220	RCC SLAB	1 X 1.50
310	194.400	RCC SLAB	
311	194.630	AMCO	1 X 0.70
312	194.910	RCC SLAB	1 X 1.0
313	195.005	RCC SLAB	1 X 0.90
314	195.150	RCC SLAB	1 X 1.50
315	195.530	RCC SLAB	1 X 1.5
316	195.750	AMCO	1 X 0.90
317	196.040	RCC SLAB	1 X 1.50
318	196.320	AMCO	1 X 0.90
319	196.700	AMCO	1 X 0.90
320	197.360	RCC SLAB	1 X 0.90
321	197.560	AMCO	2 X 1.40
322	197.830	RCC SLAB	1 X 0.90
323	198.105	RCC SLAB	1 X 0.90
324	198.210	RCC SLAB	1 X 0.90
325	198.290	RCC SLAB	1 X 0.90
326	198.500	AMCO	1 X 0.90
327	198.680	AMCO	1 X 0.90
328	198.920	AMCO	1 X 0.90
329	198.970	RCC SLAB	1 X 0.90
330	199.080	RCC SLAB	1 X 0.60
331	199.210	RCC SLAB	1 X 0.90
332	199.310	RCC SLAB	1 X 1.50
333	199.560	AMCO	1 X 0.90
334	200.000	RCC SLAB	1 X 0.90
335	200.300	AMCO	1 X 0.90
336	200.430	RCC SLAB	1 X 0.90
337	200.595	AMCO	1 X 0.90
338	201.200	RCC SLAB	1 X 0.6
339	201.440	RCC SLAB	1 X 0.90
340	201.570	RCC SLAB	1 X 0.90
341	201.640	RCC SLAB	1 X 1.0
342	201.780	AMCO	1 X 0.90
343	201.870	AMCO	1 X 0.90
344	201.980	AMCO	1 X 0.90
345	202.060	RCC SLAB	1 X 1.50
346	202.140	RCC SLAB	1 X 2.00
347	202.200	RCC SLAB	1 X 1.50

348	202.360	RCC SLAB	1 X 6.0
349	202.520	AMCO	1 X 1.20
350	202.810	AMCO	1 X 0.90
351	203.041	AMCO	1 X 0.90
352	203.200	RCC SLAB	1 X 1.20
353	203.400	AMCO	3 X 0.9
354	203.860	HP	1 X 7.45
355	204.290	AMCO	1 X 0.90
356	204.540	AMCO	1 X 0.90
357	204.840	RCC SLAB	1 X 1.50
358	205.393	RCC SLAB	1 X 0.90
359	205.570	RCC SLAB	1 X 0.90
360	205.720	RCC SLAB	1 X 0.90
361	205.790	RCC SLAB	1 X 0.90
362	206.070	RCC SLAB	1 X 0.90
363	206.160	RCC SLAB	1 X 0.60
364	206.820	RCC SLAB	1 X 0.60
365	207.160	RCC SLAB	1 X 0.90
366	207.410	RCC SLAB	1 X 1.00
367	207.770	RCC SLAB	1 X 0.90
368	208.080	RCC SLAB	1 X 1.00
369	208.150	RCC SLAB	1 X 0.90
370	208.580	RCC SLAB	1 X 1.00
371	208.720	RCC SLAB	1 X 1.00
372	208.850	RCC SLAB	1 X 0.90
373	209.250	RCC SLAB	1 X 1.50
374	209.640	RCC SLAB	1 X 1.00
375	210.000	RCC SLAB	1 X 1.00
376	210.040	RCC SLAB	1 X 0.90
377	210.270	RCC SLAB	1 X 0.90
378	210.370	RCC SLAB	1 X 0.90
379	210.480	RCC SLAB	1 X 0.90
380	210.630	RCC SLAB	1 X 0.90
381	210.880	RCC SLAB	1 X 0.90
382	211.000	RCC SLAB	1 X 0.90
383	211.040	RCC SLAB	1 X 1.00
384	211.580	RCC SLAB	1 X 1.00
385	211.740	RCC SLAB	1 X 0.90
386	211.800	RCC SLAB	1 X 0.90
387	212.020	RCC SLAB	1 X 0.90
388	213.390	AMCO	1 X 0.90
389	213.520	AMCO	1 X 0.90
390	213.835	AMCO	1 X 0.90
391	213.100	RCC SLAB	1 X 0.90
392	213.240	RCC SLAB	1 X 1.00
393	213.430	AMCO	1 X 0.90
394	213.800	RCC SLAB	1 X 2.0



395	214.080	RCC SLAB	1 X 2.0
396	214.180	AMCO	1 X 1.00
397	214.310	AMCO	1 X 0.90
398	214.460	RCC SLAB	1 X 0.90
399	214.800	RCC SLAB	1 X 0.90
400	214.980	RCC SLAB	1 X 0.90
401	215.040	AMCO	1 X 0.90
402	215.200	AMCO	1 X 0.90
403	215.500	RCC SLAB	1 X 0.90
404	215.700	RCC SLAB	1 X 0.90
405	216.370	RCC SLAB	1 X 1.00
406	216.560	RCC SLAB	1 X 0.90
407	216.960	RCC SLAB	1 X 1.50
408	217.030	RCC SLAB	1 X 0.90
409	217.420	RCC SLAB	1 X 0.90
410	217.650	HP	1 X 0.90
411	218.080	HP	1 X 0.90
412	218.410	HP	1 X 0.90
413	218.730	HP	1 X 0.90
414	219.020	HP	1 X 0.90
415	219.100	RCC SLAB	1 X 1.50
416	219.160	HP	1 X 0.90
417	219.430	HP	1 X 0.90
418	219.780	HP	1 X 0.90
419	219.910	RCC SLAB	1 X 0.90
420	220.220	RCC SLAB	1 X 0.90
421	220.540	RCC SLAB	1 X 1.00
422	220.860	RCC SLAB	1 X 0.90
423	221.430	RCC SLAB	1 X .80
424	221.970	RCC SLAB	1 X 1.0
425	222.025	RCC SLAB	1 X 0.90
426	222.116	RCC SLAB	1 X 0.90
427	222.222	RCC SLAB	1 X 1.00
428	222.340	RCC SLAB	1 X 0.90
429	222.495	RCC SLAB	1 X 0.90
430	222.760	RCC SLAB	1 X 0.90
431	222.950	RCC SLAB	1 X 1.00
432	223.080	RCC SLAB	1 X 0.90
433	223.200	RCC SLAB	1 X 1.50
434	223.320	RCC SLAB	1 X 1.50
435	223.540	RCC SLAB	1 X 0.90
436	223.620	RCC SLAB	1 X 0.90
437	223.735	RCC SLAB	1 X 0.90
438	223.806	RCC SLAB	1 X 0.90
439	224.162	RCC SLAB	1 X 0.90
440	224.350	RCC SLAB	1 X 0.90
441	224.467	RCC SLAB	1 X 0.90



442	224.575	RCC SLAB	1 X 1.00
443	224.960	RCC SLAB	1 X 1.00
444	225.100	RCC SLAB	1 X 0.90
445	225.280	RCC SLAB	1 X 1.40
446	225.340	RCC SLAB	1 X 1.0
447	225.490	RCC SLAB	1 X 2.00
448	225.600	RCC SLAB	1 X 2.20
449	225.800	RCC SLAB	1 X 2.10
450	225.920	RCC SLAB	1 X 1.90
451	226.155	HP	1 X 1.20
452	226.290	HP	1 X 0.80
453	226.460	RCC SLAB	1 X 0.50
454	226.820	RCC SLAB	1 X 1.90
455	227.140	RCC SLAB	1 X 1.0
456	227.700	HP	1 X 1.20
457	227.900	RCC SLAB	1 X 1.0
458	228.060	RCC SLAB	1 X 1.90
459	228.150	RCC SLAB	1 X 1.90
460	221.340	RCC SLAB	1 X 1.0
461	228.370	RCC SLAB	1 X 1.0
462	228.525	RCC SLAB	1 X 1.90
463	228.725	RCC SLAB	1 X 1.90
464	228.820	RCC SLAB	1 X 1.90
465	229.105	RCC SLAB	1 X 1.20
466	229.270	RCC SLAB	1 X 1.20
467	229.530	HP	1 X 1.20
468	229.570	RCC SLAB	1 X 1.0
469	229.740	RCC SLAB	1 X 1.0
470	229.900	RCC SLAB	1 X 1.0
471	230.035	RCC SLAB	1 X 1.90
472	230.258	RCC SLAB	1 X 1.90
473	230.298	RCC SLAB	1 X 1.90
474	230.480	RCC SLAB	1 X 1.90
475	230.640	RCC SLAB	1 X 1.90
476	230.780	RCC SLAB	1 X 1.0
477	230.935	RCC SLAB	1 X 1.90
478	231.110	RCC SLAB	1 X 1.0
479	231.310	RCC SLAB	1 X 1.0
480	231.400	RCC SLAB	1 X 1.0
481	231.590	RCC SLAB	1 X 1.0
482	231.780	HP	1 X 1.0
483	232.057	HP	1 X 1.90
484	232.160	RCC SLAB	1 X 1.90
485	232.355	HP	1 X 0.80
486	232.500	RCC SLAB	1 X 0.80
487	232.690	RCC SLAB	1 X 1.90
488	233.000	RCC SLAB	1 X 1.90



489	233.120	RCC SLAB	1 X 1.90
490	233.280	RCC SLAB	1 X 1.90
491	233.460	RCC SLAB	1 X 1.0
492	233.650	RCC SLAB	1 X 1.0
493	233.790	RCC SLAB	1 X 1.90
494	233.980	RCC SLAB	1 X 1.90
495	234.230	RCC SLAB	1 X 1.90
496	234.420	RCC SLAB	1 X 1.90
497	234.540	RCC SLAB	1 X 1.90
498	234.735	RCC SLAB	1 X 1.90
499	234.880	RCC SLAB	1 X 1.90
500	234.890	RCC SLAB	1 X 1.0
501	235.270	RCC SLAB	1 X 1.90
502	235.540	RCC SLAB	1 X 1.90
503	235.460	RCC SLAB	1 X 6.0
504	235.650	RCC SLAB	1 X 6.0
505	235.830	RCC SLAB	1 X 2.0
506	236.030	RCC SLAB	1 X 1.90
507	236.300	RCC SLAB	1 X 1.90
508	236.410	RCC SLAB	1 X 1.90
509	236.540	RCC SLAB	1 X 1.0
510	236.670	RCC SLAB	1 X 1.0
511	236.770	RCC SLAB	1 X 1.5
512	236.880	RCC SLAB	1 X 1.0
513	237.090	RCC SLAB	1 X 1.90
514	237.320	RCC SLAB	1 X 1.90
515	237.440	RCC SLAB	1 X 1.90
516	237.680	HP	1 X 1.90
517	237.820	RCC SLAB	1 X 1.0
518	237.890	RCC SLAB	1 X 1.90
519	238.120	RCC SLAB	1 X 1.90
520	238.280	RCC SLAB	1 X 1.0
521	238.370	RCC SLAB	1 X 1.90
522	238.590	RCC SLAB	1 X 1.90
523	238.640	HP	1 X 1.0
524	238.710	RCC SLAB	1 X 1.90
525	238.760	RCC SLAB	1 X 1.90
526	238.950	RCC SLAB	1 X 1.90
527	239.110	RCC SLAB	1 X 1.90
528	239.220	HP	1 X 1.90
529	239.420	HP	1 X 1.90
530	239.540	RCC SLAB	1 X 1.90
531	239.640	RCC SLAB	1 X 1.90
532	239.770	RCC SLAB	1 X 1.5
533	239.820	RCC SLAB	1 X 2.0
534	239.840	RCC SLAB	1 X 1.90
535	240.100	RCC SLAB	1 X 1.90



536	240.160	RCC SLAB	1 X 1.0
537	240.300	HP	1 X 1.90
538	240.470	RCC SLAB	1 X 1.90
539	240.570	RCC SLAB	1 X 2.00
540	240.750	RCC SLAB	1 X 1.90
541	240.920	RCC SLAB	1 X 1.90
542	241.080	RCC SLAB	1 X 1.50
543	241.170	RCC SLAB	1 X 1.90
544	241.630	RCC SLAB	1 X 1.90
545	241.750	RCC SLAB	1 X 6.0
546	241.810	RCC SLAB	1 X 1.90
547	241.870	RCC SLAB	1 X 2.0
548	241.950	RCC SLAB	1 X 1.90
549	242.080	RCC SLAB	1 X 1.0
550	242.120	RCC SLAB	1 X 1.90
551	242.380	RCC SLAB	1 X 1.90
552	242.580	RCC SLAB	1 X 1.0
553	242.640	RCC SLAB	1 X 1.90
554	242.980	RCC SLAB	1 X 1.90
555	243.035	RCC SLAB	1 X 2.30
556	243.260	RCC SLAB	1 X 2.80
557	243.530	RCC SLAB	1 X 1.90
558	243.690	RCC SLAB	1 X 1.0
559	243.720	RCC SLAB	1 X 1.0
560	243.840	RCC SLAB	1 X 1.0
561	243.940	RCC SLAB	1 X 1.90
562	244.170	RCC SLAB	1 X 1.90
563	244.255	RCC SLAB	1 X 1.90
564	244.430	RCC SLAB	1 X 1.40
565	244.565	RCC SLAB	1 X 0.40
566	244.620	RCC SLAB	1 X 0.60
567	244.680	RCC SLAB	1 X 1.90
568	244.740	RCC SLAB	1 X 1.90
569	244.940	RCC SLAB	1 X 1.0
570	245.080	RCC SLAB	1 X 1.90
571	245.280	RCC SLAB	1 X 1.0
572	245.420	RCC SLAB	1 X 1.90
573	245.780	RCC SLAB	1 X 1.90
574	245.920	RCC SLAB	1 X 1.90
575	246.155	HP	1 X 1.10
576	246.340	RCC SLAB	1 X 1.90
577	246.540	RCC SLAB	1 X 1.90
578	246.710	RCC SLAB	1 X 1.80
579	246.910	RCC SLAB	1 X 1.0
580	247.010	RCC SLAB	1 X 1.90
581	247.210	RCC SLAB	1 X 1.90
582	247.422	HP	1 X 1.10



583	247.530	RCC SLAB	1 X 1.90
584	247.650	RCC SLAB	1 X 1.90
585	247.850	RCC SLAB	1 X 1.90
586	247.980	RCC SLAB	1 X 1.0
587	248.080	RCC SLAB	1 X 1.90
588	248.400	RCC SLAB	1 X 1.90
589	248.600	RCC SLAB	1 X 1.90
590	248.780	RCC SLAB	1 X 1.90
591	248.980	RCC SLAB	1 X 1.90
592	249.130	RCC SLAB	1 X 1.90
593	249.240	RCC SLAB	1 X 1.90
594	249.370	RCC SLAB	1 X 1.90
595	249.550	RCC SLAB	1 X 1.30
596	249.930	RCC SLAB	1 X 1.90

2.11 Protection works

Project road passes through the hilly terrain. The existing slope protection works (breast walls) in the hill side and the Retaining walls on the valley side along with their present condition are presented in the table below:

List of existing Breast Walls

S. No.	Location	Length (m)	Height (m)	Condition
1	184.520	10.00	3.0	Very Poor
2	186.180	31.00	2.0	Fair
3	195.480	23.00	2.5	Poor
4	196.140	50.00	2.7	Very Poor
5	206.180	23.00	2.5	Very Poor
6	209.240	40.00	3.0	Poor
7	209.600	25.00	5.0	Poor
8	209.450	15.00	2.0	Poor
9	209.840	16.00	3.5	Poor
10	221.120	25.00	1.5	Fair
11	221.156	26.00	3.4	Good
12	221.170	50.00	4.0	Poor
13	222.934	22.00	7.0	Poor
14	239.700	42.00	3.0	Poor
15	240.600	88.00	3.0	Poor
16	243.124	40.00	2.6	Poor
17	245.880	7.00	2.0	Poor
18	244.124	40.00	2.6	Poor
19	244.880	7.00	2.0	Poor
Total		580.00		



List of existing Retaining Walls

S. No.	Location	Length (m)	Height (m)	Condition
1	126.010	8.00	3.0	Poor
2	126.510	10.00	3.0	Very Poor
3	126.560	5.00	1.2	Very Poor
4	126.610	10.00	1.5	Fair
5	126.890	8.00	1.2	Poor
6	127.200	24.00	1.9	Poor
7	128.110	18.00	2.0	Very Poor
8	128.270	11.00	1.7	Poor
9	128.310	7.00	1.2	Fair
10	128.790	7.00	2.0	Poor
11	129.720	18.00	1.5	Poor
12	131.060	6.40	2.0	Fair
13	131.420	20.00	3.0	Fair
14	132.190	20.00	4.0	Fair
15	133.000	25.00	6.0	Fair
16	133.020	25.00	2.5	Fair
17	133.240	40.00	6.0	Poor
18	133.320	21.00	2.5	Poor
19	133.900	18.00	2.5	Fair
20	133.120	30.00	2.5	Fair
21	133.710	15.00	3.0	Fair
22	135.820	30.00	3.0	Fair
23	136.530	13.00	3.2	Fair
24	136.980	12.00	2.5	Very Poor
25	137.570	9.00	3.4	Poor
26	137.850	20.00	3.0	Poor
27	138.040	15.00	3.0	Poor
28	138.080	20.00	2.6	Poor
29	138.370	9.00	3.6	Poor
30	139.270	20.00	(2.00+0.45) / 2	Fair
31	139.430	6.00	3.5	Fair
32	139.500	7.00	3.5	Fair
33	139.980	30.00	5.2	Poor
34	141.020	16.00	4.5	Fair
35	141.190	13.00	4.2	Very Poor
36	141.220	21.50	3.0	Fair
37	141.250	16.50	3.2	Fair
38	141.290	20.00	2.6	Poor
39	141.770	15.00	3.4	Fair
40	141.800	14.00	3.0	Poor
41	141.895	11.00	2.7	Fair
42	141.970	22.00	2.2	Fair

S. No.	Location	Length (m)	Height (m)	Condition
43	142.120	16.00	3.5	Poor
44	143.030	22.00	1.5	Fair
45	143.100	28.00	2.5	Fair
46	143.210	11.00	4.5	Fair
47	143.240	23.00	2.0	Poor
48	143.290	15.00	4.0	Fair
49	143.580	30.00	2.0	Poor
50	143.670	12.00	2.2	Fair
51	143.800	9.00	2.5	Poor
52	144.160	12.00	1.5	Fair
53	144.390	11.00	2.0	Poor
54	144.610	39.00	4.3	Fair
55	145.010	4.50	1.5	Poor
56	145.290	16.00	2.5	Poor
57	145.750	12.00	2.5	Fair
58	145.770	9.00	1.0	Fair
59	146.130	14.00	2.5	Fair
60	146.330	20.00	1.5	Fair
61	146.390	11.00	3.0	Fair
62	146.550	7.50	1.5	Fair
63	146.590	16.00	2.0	Poor
64	146.930	6.00	2.0	Poor
65	146.990	12.00	3.0	Very Poor
66	147.045	8.00	2.3	Fair
67	147.090	10.00	2.4	Poor
68	147.450	20.00	2.0	Poor
69	147.590	10.00	2.2	Poor
70	147.690	12.00	2.0	Poor
71	147.710	8.00	2.2	Fair
72	147.830	41.00	3.5	Poor
73	147.970	12.00	2.3	Fair
74	148.310	28.00	2.5	Fair
75	148.600	20.00	3.0	Fair
76	148.770	40.00	4.0	Very Poor
77	148.970	20.00	2.0	Poor
78	150.220	7.00	1.5	Fair
79	150.980	3.00	1.0	Fair
80	151.360	10.00	3.0	Fair
81	152.540	20.00	4.0	Fair
82	152.840	10.00	3.0	Fair
83	152.910	7.00	2.0	Fair
84	152.940	20.00	3.0	Fair
85	153.790	18.00	3.0	Fair
86	154.080	11.00	3.0	Poor
87	154.600	15.00	4.0	Fair
88	154.660	10.00	2.0	Fair



S. No.	Location	Length (m)	Height (m)	Condition
89	155.300	6.0	1.5	Fair
90	156.490	10.0	1.5	Fair
91	156.540	9.0	3.0	Fair
92	156.600	20.0	4.0	Good
93	157.350	16.0	4.0	Fair
94	157.740	34.0	4.0	Fair
95	158.160	11.0	3.0	Fair
96	158.250	9.0	4.0	Poor
97	167.340	10.0	2.5	Very Poor
98	167.460	17.0	2.0	Very Poor
99	167.930	14.0	2.5	Fair
100	167.880	16.0	2.5	Fair
101	167.930	10.0	3.0	Very Poor
102	167.980	8.0	2.0	Fair
103	168.590	25.0	2.0	Poor
104	169.070	9.0	2.0	Poor
105	169.640	20.0	2.5	Poor
106	169.790	26.0	5.0	Fair
107	169.890	17.0	2.5	Fair
108	169.980	21.0	3.0	Poor
109	171.270	24.5	2.2	Good
110	171.800	34.0	5.0	Good
111	172.300	75.0	3.0	Poor
112	172.370	40.0	5.0	Fair
113	173.410	15.0	2.5	Very Poor
114	173.440	26.0	3.0	Poor
115	173.580	27.0	4.5	Fair
116	176.610	14.0	4.5	Fair
117	173.740	13.0	4.5	Very Good
118	173.750	20.0	3.0	Very Poor
119	173.800	10.0	2.0	Poor
120	174.025	15.0	3.0	Fair
121	174.080	25.0	2.0	Very Poor
122	174.150	15.0	2.5	Fair
123	174.570	25.0	2.5	Fair
124	174.630	11.0	2.5	Fair
125	174.760	15.0	1.5	Fair
126	174.910	9.0	3.5	Fair
127	175.200	25.0	3.0	Poor
128	175.320	20.0	2.0	Poor
129	175.710	14.0	2.0	Poor
130	175.930	12.0	2.5	Fair
131	176.040	14.0	2.5	Fair
132	176.100	42.0	3.5	Fair
133	176.120	27.0	2.5	Fair
134	176.195	10.0	2.5	Poor

S. No.	Location	Length (m)	Height (m)	Condition
135	176.265	7.00	2.0	Poor
136	176.310	11.00	4.0	Fair
137	176.345	5.00	2.0	Poor
138	176.800	10.00	3.0	Poor
139	177.140	9.00	2.50	Fair
140	177.150	8.00	2.50	Fair
141	177.180	25.00	4.50	Fair
142	177.300	12.00	2.50	Very Poor
143	177.350	12.00	3.00	Poor
144	177.400	20.00	4.00	Very Poor
145	177.430	18.00	4.00	Poor
146	177.430	16.00	2.50	Poor
147	177.450	20.00	4.50	Poor
148	177.520	11.00	2.00	Very Poor
149	177.650	14.00	5.00	Poor
150	177.830	12.00	2.50	Very Poor
151	177.930	25.00	4.00	Fair
152	178.130	22.00	3.00	Fair
153	178.360	11.00	3.50	Fair
154	178.460	26.00	5.00	Fair
155	178.710	22.00	4.50	Very Poor
156	178.730	10.00	5.00	Poor
157	179.230	10.00	2.00	Fair
158	179.620	122.00	3.50	Poor
159	180.020	17.00	3.00	Very Poor
160	180.170	27.00	3.00	Good
161	180.940	36.00	5.00	Poor
162	181.190	8.00	3.50	Fair
163	181.500	10.00	3.00	Very Poor
164	182.300	11.00	3.00	Poor
165	183.060	15.00	2.00	Fair
166	183.360	15.00	4.10	Fair
167	183.400	55.00	4.00	Fair
168	183.480	18.00	3.00	Very Poor
169	183.900	35.00	4.50	Fair
170	184.020	10.00	2.00	Very Poor
171	184.080	25.00	4.00	Fair
172	184.500	25.00	4.00	Very Poor
173	184.520	10.00	3.00	Very Poor
174	184.570	17.00	4.00	Poor
175	184.580	20.00	3.00	Very Poor
176	184.600	12.00	4.00	Fair
177	184.760	7.00	4.00	Fair
178	185.870	10.00	1.70	Good
179	186.630	8.00	4.00	Fair
180	186.650	17.00	4.50	Fair

S. No.	Location	Length (m)	Height (m)	Condition
181	186.930	22.00	4.50	VP
182	186.950	10.00	1.00	Fair
183	187.140	6.50	3.00	Poor
184	187.270	25.00	3.00	Good
185	187.310	23.00	3.00	Good
186	187.330	7.00	3.00	Fair
187	187.350	14.00	3.00	Fair
188	187.430	20.00	4.00	Fair
189	187.960	9.00	3.00	Good
190	188.070	10.00	3.50	Good
191	188.300	45.00	4.00	Fair
192	188.340	20.00	5.00	Poor
193	188.370	33.00	4.50	Good
194	188.385	15.00	2.50	Fair
195	188.410	8.00	3.50	Fair
196	188.670	28.00	3.00	Fair
197	188.760	15.00	2.00	Fair
198	188.860	15.00	2.00	Fair
199	188.930	12.00	4.50	Poor
200	189.080	13.00	5.00	Poor
201	189.450	12.00	3.00	VP
202	189.660	11.00	3.50	VP
203	190.660	39.00	6.00	Fair
204	190.780	26.00	2.50	Poor
205	190.940	9.00	3.00	Fair
206	190.960	6.00	3.00	Fair
207	191.230	28.00	4.00	Fair
208	191.510	35.00	2.50	Fair
209	191.550	24.00	3.50	Fair
210	192.030	25.00	2.50	VP
211	192.080	16.00	3.00	VP
212	192.130	15.00	2.50	Poor
213	192.210	15.00	3.00	VP
214	192.560	16.00	4.00	Fair
215	192.760	16.00	2.00	Poor
216	192.960	9.00	2.00	Fair
217	192.990	13.00	2.50	Poor
218	193.080	38.00	2.00	Poor
219	193.140	10.30	2.50	Fair
220	193.300	15.00	2.00	Poor
221	193.400	8.00	2.00	Fair
222	194.230	17.00	2.50	Poor
223	194.420	13.00	4.00	Poor
224	194.450	7.00	3.50	VP
225	195.105	8.00	1.50	Poor
226	195.220	6.00	2.00	VP

S. No.	Location	Length (m)	Height (m)	Condition
227	195.300	25.00	3.30	Fair
228	195.350	15.00	2.80	Poor
229	195.540	17.00	3.00	Poor
230	195.710	35.00	3.50	Poor
231	195.940	7.00	2.00	Poor
232	195.980	7.00	1.70	VP
233	196.160	44.00	3.20	Poor
234	196.240	9.00	1.50	Fair
235	196.360	12.50	2.50	Poor
236	196.460	20.00	4.60	Fair
237	196.760	14.00	2.00	VP
238	197.310	9.00	2.70	Fair
239	197.630	7.00	2.00	Fair
240	197.740	19.00	2.00	Fair
241	197.780	12.00	1.50	Fair
242	197.860	2.00	2.00	Fair
243	198.040	1.50	1.50	Poor
244	198.105	1.50	1.50	Fair
245	198.680	2.00	2.00	Poor
246	198.730	3.10	3.10	Poor
247	198.760	3.20	3.20	Fair
248	198.960	1.20	1.20	Fair
249	199.010	2.00	2.00	Poor
250	199.160	2.50	2.50	Fair
251	199.200	1.50	1.50	Poor
252	199.270	2.00	2.00	Fair
253	199.440	2.50	2.50	Poor
254	199.480	2.60	2.60	Fair
255	200.460	2.00	2.00	VP
256	200.780	1.50	1.50	Poor
257	200.810	2.00	2.00	Poor
258	200.880	4.00	4.00	Fair
259	201.060	2.00	2.00	Fair
260	201.250	2.50	2.50	Poor
261	202.050	2.50	2.50	Fair
262	202.620	2.30	2.30	Fair
263	203.280	2.70	2.70	Fair
264	203.320	3.10	3.10	Fair
265	203.520	3.00	3.00	Poor
266	203.580	2.70	2.70	Fair
267	203.600	2.50	2.50	Fair
268	203.620	1.80	1.80	Fair
269	203.640	3.00	3.00	Fair
270	203.670	2.50	2.50	Fair
271	203.700	2.30	2.30	Fair
272	203.740	1.80	1.80	Fair



S. No.	Location	Length (m)	Height (m)	Condition
273	204.000	2.10	2.10	Fair
274	204.060	10.50	1.80	Fair
275	204.380	25.80	2.20	Fair
276	204.710	11.00	1.70	Fair
277	205.070	10.00	3.00	Poor
278	205.180	17.00	3.00	Poor
279	205.230	8.00	3.00	Poor
280	205.280	45.00	3.00	Poor
281	205.440	17.00	2.00	Fair
282	205.510	15.00	4.00	Poor
283	205.560	7.00	3.00	Poor
284	205.600	14.00	2.50	VP
285	205.630	9.00	4.50	Poor
286	205.660	27.00	1.50	Fair
287	205.820	6.00	2.00	Fair
288	206.020	12.00	3.50	Poor
289	206.100	7.00	4.00	Fair
290	206.260	9.00	3.50	Poor
291	206.520	27.00	2.50	Poor
292	206.670	10.00	1.50	Poor
293	206.720	5.00	1.50	Poor
294	206.750	14.00	1.50	Poor
295	206.790	7.50	1.50	Poor
296	207.310	7.00	2.00	Poor
297	207.590	14.00	1.50	Poor
298	208.370	7.00	2.00	Poor
299	208.410	21.00	3.00	Poor
300	208.440	10.00	3.50	Poor
301	208.490	31.00	3.50	Poor
302	208.870	12.00	3.30	Poor
303	208.900	16.00	3.00	Fair
304	209.020	16.00	3.00	VP
305	209.080	42.00	9.00	Poor
306	209.240	25.00	5.00	Poor
307	209.360	12.00	1.50	Poor
308	209.690	9.00	2.50	Poor
309	209.800	15.00	3.00	Poor
310	210.110	13.00	3.70	VP
311	210.360	10.00	3.50	Poor
312	210.420	10.00	2.00	VP
313	210.440	15.00	2.00	VP
314	211.170	17.00	3.00	Poor
315	211.390	11.00	2.50	VP
316	211.900	22.00	3.00	Poor
317	212.230	7.00	3.50	Fair
318	212.330	13.00	2.50	Fair

S. No.	Location	Length (m)	Height (m)	Condition
319	212.380	15.00	2.00	Poor
320	212.400	15.00	2.00	Poor
321	212.450	23.00	4.00	Poor
322	212.600	60.00	3.00	Poor
323	212.650	33.00	5.90	Fair
324	212.790	14.00	3.00	Poor
325	213.180	12.00	2.50	Poor
326	213.620	8.00	4.80	Fair
327	213.740	25.00	3.50	Poor
328	213.880	22.00	3.50	Poor
329	213.960	22.00	3.00	Poor
330	214.080	14.00	3.00	Poor
331	214.130	6.00	3.00	Poor
332	214.200	50.00	4.00	Poor
333	214.360	5.00	2.50	VP
334	214.600	48.00	4.00	Poor
335	214.850	8.00	3.80	Poor
336	215.080	25.00	2.00	Poor
337	216.260	12.00	2.00	Poor
338	217.100	6.00	2.00	Poor
339	217.440	28.00	2.50	Poor
340	218.465	11.00	3.00	Poor
341	222.605	12.00	3.40	Poor
342	222.640	8.00	3.70	Poor
343	223.007	20.00	3.00	Poor
344	223.408	15.00	5.00	Fair
345	223.700	8.00	2.10	Fair
346	223.906	14.00	4.10	Fair
347	226.690	9.00	5.00	Fair
348	226.880	30.00	4.00	Poor
349	227.010	18.00	5.00	Poor
350	227.580	14.00	3.50	Poor
351	227.705	18.00	2.00	Poor
352	227.740	13.50	3.50	Fair
353	227.750	10.00	3.10	Fair
354	227.790	8.70	3.00	Poor
355	229.095	15.60	2.80	Fair
356	229.110	7.20	1.40	Fair
357	229.210	9.00	3.00	Poor
358	229.260	5.30	2.30	Fair
359	229.600	4.00	1.50	Fair
360	229.620	7.00	1.30	Fair
361	229.707	6.00	2.20	Poor
362	229.760	6.00	1.20	Fair
363	229.830	8.30	3.00	Good
364	229.940	9.60	3.50	Poor

S. No.	Location	Length (m)	Height (m)	Condition
365	230.030	7.50	3.50	Poor
366	230.040	5.00	3.00	Fair
367	230.260	5.00	3.00	Poor
368	230.285	8.00	3.20	Poor
369	230.300	9.00	3.20	Poor
370	230.630	14.00	2.80	Poor
371	230.650	22.00	3.50	Poor
372	230.890	15.00	3.00	Fair
373	230.920	6.50	2.10	Fair
374	231.100	5.00	1.60	Fair
375	231.440	8.50	1.70	Poor
376	231.515	3.70	2.60	Poor
377	231.690	9.20	4.20	Fair
378	231.865	22.70	3.00	Poor
379	232.060	2.80	2.00	Poor
380	232.200	7.00	3.50	Good
381	232.222	20.00	2.50	Poor
382	233.200	7.00	3.80	Fair
383	234.280	8.00	1.20	Poor
384	234.340	7.00	1.40	Poor
385	234.964	6.00	2.00	Fair
386	234.975	7.00	3.00	Poor
387	235.020	18.00	3.50	Poor
388	235.050	8.00	3.00	Poor
389	235.180	12.00	2.50	Poor
390	235.220	9.00	4.00	Poor
391	235.280	10.00	4.00	Poor
392	235.380	9.00	4.30	Poor
393	235.450	14.00	2.50	Fair
394	235.500	6.60	6.40	Fair
395	235.640	17.00	4.00	Poor
396	235.820	8.00	3.50	VP
397	235.890	7.00	5.00	Poor
398	235.930	12.00	4.50	Poor
399	235.500	10.00	4.00	Fair
400	236.030	11.00	2.00	Fair
401	236.340	15.00	2.50	VP
402	236.400	14.00	5.00	Fair
403	237.090	10.00	2.50	Fair
404	237.420	23.00	5.00	Poor
405	237.720	20.00	1.50	Poor
406	237.870	14.00	2.50	Poor
407	237.950	9.00	3.00	Fair
408	238.190	6.00	1.50	Poor
409	238.620	24.00	3.00	Poor
410	238.650	14.00	3.00	Poor

S. No.	Location	Length (m)	Height (m)	Condition
411	239.300	43.00	3.00	Fair
412	239.350	14.00	4.80	Poor
413	239.430	6.00	2.00	Poor
414	240.330	17.00	2.20	Poor
415	240.400	30.00	2.20	Poor
416	240.500	27.00	2.50	Poor
417	240.540	36.00	2.20	Poor
418	240.580	8.00	2.00	Poor
419	240.750	12.00	5.00	Fair
420	240.780	20.00	4.80	Poor
421	240.850	26.00	2.00	Poor
422	240.870	10.00	2.00	Poor
423	240.970	12.00	6.00	Fair
424	241.240	19.00	3.20	Poor
425	241.300	15.00	2.00	Poor
426	241.350	12.00	2.50	Poor
427	241.410	12.00	2.00	Poor
428	241.660	40.00	5.30	Fair
429	241.750	12.00	2.50	Poor
430	242.170	16.00	2.40	Poor
431	242.210	12.00	2.30	Poor
432	242.270	14.00	2.00	Fair
433	242.490	12.00	4.50	Poor
434	242.520	11.00	2.50	Poor
435	242.540	8.00	2.00	Poor
436	242.590	10.00	2.80	Poor
437	242.890	19.00	2.50	Poor
438	243.740	11.00	2.40	Poor
439	243.940	7.00	1.30	Good
440	244.680	18.00	3.00	Poor
441	244.905	6.00	3.50	Good
442	245.520	15.00	1.60	Poor
443	246.842	12.00	2.10	Fair
444	246.890	15.00	2.00	Poor
445	247.142	5.00	1.50	Fair
446	247.222	9.00	2.80	Good
447	247.242	19.00	2.60	Good
448	247.380	10.00	1.50	Poor
449	247.280	18.00	3.00	Good
450	247.443	11.00	2.50	Good
451	247.845	15.00	3.00	Good
452	247.860	13.00	2.80	Poor
453	247.952	13.00	4.00	Good
454	248.185	20.00	3.50	Good
455	248.250	10.00	1.80	Good
456	248.392	26.00	3.30	Good

S. No.	Location	Length (m)	Height (m)	Condition
457	248.525	14.00	3.00	Good
458	248.715	19.00	4.60	Fair
459	249.185	11.00	3.20	Good
460	249.842	25.00	3.00	Good
461	249.940	10.00	1.70	Poor

2.12 Drainage

Drainage is unsatisfactory. Road side drains are damaged, blocked, filled with debris, and are almost non-existing.

2.13 Others

- No rail way line crosses the project road sector.
- No of trees along the project road are 2966
- Road safety structures are inadequate
- Road marking non-existing
- Sign boards are in inadequate number
- Crash barriers are not existing
- Parapet walls are damaged

2.14 Traffic Scenario

The present traffic volume on NH-54 is less because of the diversion of traffic to newly upgraded State Road (Aizawl – Lunglei). Traffic has the potential to increase rapidly due to fast development of Mizoram, particularly due to multi modal transport system and Myanmar connectivity.

2.15 Problems and Challenge Areas

Based on the ground study, reconnaissance & survey and the data collected the consultant have gained appreciation of the technical and project management problems and have insight of the challenge areas of the project. The general appreciation of the thrust areas are described in the following paragraph.

- Project road exist in hilly terrain with average hill slope of 70°.



- Most of the houses exist on the valley side which would be rehabilitated for widening of road towards valley side.
- High cutting will be required for hill side widening and major protection works required for valley side widening.
- Major slope protection works will be required, where hill slope is not stable (sinking area)