

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

**NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.  
(Ministry of Road, Transport & Highways)  
Government of India**

**Schedules**

**FOR**

**“Balance work of Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”**

**Engineering, Procurement & Construction (EPC) Mode**

**BID DOCUMENT**

**March-2023**



**National Highways & Infrastructure Development Corporation Ltd  
(A Government of India Undertaking)**

## **Schedule**

(See Clause 2.1 and 8.1)

### **SITE OF THE PROJECT**

#### **1 The Site**

- 1.1 Site of the Single / Two-Laning of Existing Merangkong – Tamlu – Mon Road on EPC basis from Existing km 20+456 to km 41+065 (Design km 20+000 to km 40+000) in the state of Nagaland under SARDP-NE, Project Highway shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.
- 1.2 The dates of handing over the Right of Way to the Contractor are specified in Annex-II of this Schedule-A.
- 1.3 An inventory of the Site including the land, buildings, Structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2(i) of this Agreement.
- 1.4 The alignment plans of the Project Highway are specified in Annex-III. In the case of sections where no modification in the existing alignment of the Project Highway is contemplated, the alignment plan has not been provided. Alignment plans have only been given for sections where the existing alignment is proposed to be modified.
- 1.5 The status of the environment clearances obtained or awaited is given in Annex-IV.

## Annex – I

(Schedule-A)

### Site

#### 1. Site

The site of the Single / Two-Laning of Existing Merangkong – Tamlu – Mon Road on EPC basis from Existing km 20+456 to km 41+065 (Design km 20+000 to km 40+000) in the state of Nagaland under SARDP-NE,.

The Land, carriageway and structures comprising the site are described below.

(i) Details of Earth work up to Sub\_Grade

Sl.No.	Chainage		Length (m)	Improvement Proposal	Details of Work done by Previous Contractor	As per Site Condition
	From	To				
1	20+000	20+035	35	Realignment	Work Done	
2	20+035	20+200	165	Widening & strengthening	Work Done	
3	20+200	20+245	45	Realignment	Work Done	
4	20+245	20+350	105	Widening & strengthening	Work Done	
5	20+350	20+395	45	Realignment	Work Done	
6	20+395	20+450	55	Widening & strengthening	Work Done	
7	20+450	20+550	100	Widening & strengthening	Work not done	
8	20+550	20+650	100	Widening & strengthening	Work Done	
9	20+650	20+660	10	Widening & strengthening	Work Done	
10	20+660	20+715	55	Widening & strengthening	Work Done	
11	20+715	20+790	75	Realignment	Work Done	
12	20+790	20+800	10	Realignment	Work Done	
13	20+800	20+940	140	Widening & strengthening	Work Done	
14	20+940	21+030	90	Realignment	Work Done	
15	21+030	21+050	20	Widening & strengthening	Work Done	
16	21+050	21+350	300	Widening & strengthening	Work Done	
17	21+350	21+430	80	Realignment	Work Done	
18	21+430	21+450	20	Realignment	Work Done	
19	21+450	21+630	180	Widening & strengthening	Work Done	
20	21+630	21+650	20	Widening & strengthening	Work Done	
21	21+650	21+740	90	Widening & strengthening	Work Done	
22	21+740	21+770	30	Realignment	Work Done	
23	21+770	21+850	80	Widening & strengthening	Work Done	
24	21+850	21+990	140	Widening & strengthening	Work Done	
25	21+990	22+120	130	Realignment	Work Done	
26	22+120	22+130	10	Realignment	Work Done	
27	22+130	23+000	870	Widening & strengthening	Work Done	
28	23+000	23+150	150	Widening & strengthening	Work Done	
29	23+150	23+280	130	Widening & strengthening	Work Done	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

30	23+280	23+320	40	Widening & strengthening	Work not Done	
31	23+320	23+335	15	Widening & strengthening	Work not Done	
32	23+335	23+350	15	Realignment	Work Done	
33	23+350	23+400	50	Realignment	Work Done	
34	23+400	23+450	50	Widening & strengthening	Work Done	
35	23+450	23+840	390	Widening & strengthening	Work Done	
36	23+840	23+865	25	Realignment	Work Done	
37	23+865	24+035	170	Widening & strengthening	Work Done	
38	24+035	24+065	30	Realignment	Work Done	
39	24+065	24+110	45	Widening & strengthening	Work Done	
40	24+110	24+200	90	Widening & strengthening	Work Done	
41	24+200	24+260	60	Widening & strengthening	Work Done	
42	24+260	24+355	95	Realignment	Work Done	
43	24+355	24+440	85	Widening & strengthening	Work Done	
44	24+440	24+460	20	Widening & strengthening	Work Done	
45	24+460	24+725	265	Widening & strengthening	Work Done	
46	24+725	24+970	245	Realignment	Work Done	
47	24+970	25+000	30	Realignment	Work Done	
48	25+000	25+100	100	Widening & strengthening	Work not Done	
49	25+100	25+200	100	Widening & strengthening	Work Done	
50	25+200	25+250	50	Widening & strengthening	Work Done	
51	25+250	25+440	190	Widening & strengthening	Work Done	
52	25+440	25+465	25	Realignment	Work Done	
53	25+465	25+530	65	Widening & strengthening	Work Done	
54	25+530	25+540	10	Widening & strengthening	Work Done	
55	25+540	25+560	20	Widening & strengthening	Work Done	
56	25+560	25+620	60	Realignment	Work Done	
57	25+620	25+850	230	Widening & strengthening	Work Done	
58	25+850	25+980	130	Realignment	Work Done	
59	25+980	26+010	30	Realignment	Work Done	
60	26+010	26+070	60	Realignment	Work Done	
61	26+070	26+100	30	Realignment	Work Done	
62	26+100	26+210	110	Widening & strengthening	Work Done	
63	26+210	26+235	25	Widening & strengthening	Work Done	
64	26+235	26+320	85	Realignment	Work Done	
65	26+320	26+460	140	Realignment	Work Done	
66	26+460	26+650	190	Widening & strengthening	Work Done	
67	26+650	26+700	50	Widening & strengthening	Work Done	
68	26+700	26+730	30	Realignment	Work Done	
69	26+730	26+900	170	Widening & strengthening	Work Done	
70	26+900	26+905	5	Widening & strengthening	Work Done	
71	26+905	26+950	45	Realignment	Work Done	
72	26+950	26+955	5	Realignment	Work Done	
73	26+955	26+960	5	Widening & strengthening	Work Done	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

74	26+960	26+990	30	Widening & strengthening	Work Done	
75	26+990	27+150	160	Widening & strengthening	Work Done	
76	27+150	27+190	40	Widening & strengthening	Work Done	
77	27+190	27+600	410	Widening & strengthening	Work Done	
78	27+600	27+750	150	Realignment	Work Done	
79	27+750	27+850	100	Widening & strengthening	Work Done	
80	27+850	27+900	50	Realignment	Work Done	
81	27+900	28+040	140	Widening & strengthening	Work Done	
82	28+040	28+110	70	Widening & strengthening	Work Done	
83	28+110	28+270	160	Widening & strengthening	Work Done	
84	28+270	28+360	90	Widening & strengthening	Work Done	
85	28+360	28+410	50	Realignment	Work Done	
86	28+410	28+490	80	Widening & strengthening	Work Done	
87	28+490	28+500	10	Realignment	Work Done	
88	28+500	28+700	200	Realignment	Work Done	
89	28+700	28+750	50	Widening & strengthening	Work Done	
90	28+750	28+790	40	Widening & strengthening	Work Done	
91	28+790	28+940	150	Widening & strengthening	Work Done	
92	28+940	29+030	90	Widening & strengthening	Work Done	
93	29+030	29+090	60	Widening & strengthening	Work Done	
94	29+090	29+150	60	Widening & strengthening	Work Done	
95	29+150	29+170	20	Widening & strengthening	Work Done	
96	29+170	29+220	50	Widening & strengthening	Work Done	
97	29+220	29+230	10	Widening & strengthening	Work Done	
98	29+230	29+320	90	Widening & strengthening	Work Done	
99	29+320	29+390	70	Widening & strengthening	Work Done	
100	29+390	29+490	100	Widening & strengthening	Work Done	
101	29+490	29+540	50	Realignment	Work Done	
102	29+540	29+750	210	Widening & strengthening	Work Done	
103	29+750	30+110	360	Realignment	Work Done	
104	30+110	30+160	50	Widening & strengthening	Work Done	
105	30+160	30+205	45	Widening & strengthening	Work Done	
106	30+205	30+300	95	Realignment	Work Done	
107	30+300	30+470	170	Realignment	Work Done	
108	30+470	31+300	830	Widening & strengthening	Work Done	
109	31+300	31+510	210	Realignment	Work Done	
110	31+510	31+620	110	Realignment	Work Done	
111	31+620	31+660	40	Widening & strengthening	Work Done	
112	31+660	31+730	70	Widening & strengthening	Work Done	
113	31+730	31+810	80	Widening & strengthening	Work not Done	MNB Portion
114	31+810	31+850	40	Widening & strengthening	Work Done	
115	31+850	31+950	100	Widening & strengthening	Work Done	
116	31+950	31+960	10	Widening & strengthening	Work Done	
117	31+960	32+100	140	Realignment	Work Done	

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118	32+100	32+240	140	Widening & strengthening	Work Done	
119	32+240	32+310	70	Realignment	Work Done	
120	32+310	32+400	90	Widening & strengthening	Work Done	
121	32+400	32+440	40	Realignment	Work Done	
122	32+440	32+545	105	Widening & strengthening	Work Done	
123	32+545	32+600	55	Realignment	Work Done	
124	32+600	32+665	65	Realignment	Work Done	
125	32+665	32+740	75	Widening & strengthening	Work Done	
126	32+740	32+790	50	Realignment	Work Done	
127	32+790	32+900	110	Widening & strengthening	Work Done	
128	32+900	32+960	60	Realignment	Work Done	
129	32+960	33+360	400	Widening & strengthening	Work Done	
130	33+360	33+500	140	Realignment	Work Done	
131	33+500	33+550	50	Widening & strengthening	Work Done	
132	33+550	33+650	100	Widening & strengthening	Work Done	
133	33+650	33+720	70	Widening & strengthening	Work Done	
134	33+720	33+870	150	Widening & strengthening	Work Done	
135	33+870	33+910	40	Widening & strengthening	Work Done	
136	33+910	34+120	210	Widening & strengthening	Work Done	
137	34+120	34+150	30	Widening & strengthening	Work Done	
138	34+150	34+280	130	Widening & strengthening	Work Done	
139	34+280	34+320	40	Widening & strengthening	Work Done	
140	34+320	34+450	130	Widening & strengthening	Work Done	
141	34+450	34+535	85	Realignment	Work Done	
142	34+535	34+640	105	Realignment	Work Done	
143	34+640	34+650	10	Widening & strengthening	Work Done	
144	34+650	34+670	20	Widening & strengthening	Work Done	
145	34+670	34+715	45	Realignment	Work Done	
146	34+715	34+752	37	Widening & strengthening	Work not Done	MNB Portion
147	34+752	34+780	28	Widening & strengthening	Work Done	
148	34+780	34+810	30	Widening & strengthening	Work Done	
149	34+810	34+850	40	Realignment	Work Done	
150	34+850	34+855	5	Realignment	Work Done	
151	34+855	35+235	380	Widening & strengthening	Work Done	
152	35+235	35+260	25	Realignment	Work Done	
153	35+260	35+400	140	Widening & strengthening	Work Done	
154	35+400	35+450	50	Realignment	Work Done	
155	35+450	35+480	30	Widening & strengthening	Work Done	
156	35+480	35+505	25	Realignment	Work Done	
157	35+505	35+590	85	Widening & strengthening	Work Done	
158	35+590	35+690	100	Realignment	Work Done	
159	35+690	35+850	160	Widening & strengthening	Work Done	
160	35+850	35+890	40	Widening & strengthening	Work Done	
161	35+890	35+920	30	Realignment	Work Done	

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162	35+920	36+030	110	Realignment	Work Done	
163	36+030	36+080	50	Widening & strengthening	Work Done	
164	36+080	36+155	75	Widening & strengthening	Work Done	
165	36+155	36+280	125	Realignment	Work Done	
166	36+280	36+300	20	Widening & strengthening	Work Done	
167	36+300	36+320	20	Widening & strengthening	Work Done	
168	36+320	36+400	80	Realignment	Work Done	
169	36+400	36+430	30	Widening & strengthening	Work Done	
170	36+430	36+450	20	Widening & strengthening	Work Done	
171	36+450	36+490	40	Realignment	Work Done	
172	36+490	36+595	105	Widening & strengthening	Work Done	
173	36+595	36+670	75	Realignment	Work Done	
174	36+670	36+710	40	Widening & strengthening	Work Done	
175	36+710	36+730	20	Widening & strengthening	Work Done	
176	36+730	37+060	330	Widening & strengthening	Work Done	
177	37+060	37+100	40	Realignment	Work Done	
178	37+100	37+110	10	Widening & strengthening	Work Done	
179	37+110	37+130	20	Widening & strengthening	Work Done	
180	37+130	37+230	100	Widening & strengthening	Work Done	
181	37+230	37+250	20	Widening & strengthening	Work Done	
182	37+250	37+515	265	Widening & strengthening	Work Done	
183	37+515	37+550	35	Widening & strengthening	Work Done	
184	37+550	37+620	70	Widening & strengthening	Work Done	
185	37+620	37+640	20	Widening & strengthening	Work Done	
186	37+640	37+725	85	Widening & strengthening	Work Done	
187	37+725	37+750	25	Widening & strengthening	Work Done	
188	37+750	37+850	100	Widening & strengthening	Work Done	
189	37+850	38+000	150	Widening & strengthening	Work Done	
190	38+000	38+080	80	Widening & strengthening	Work Done	
191	38+080	38+120	40	Widening & strengthening	Work Done	
192	38+120	38+215	95	Widening & strengthening	Work Done	
193	38+215	38+275	60	Realignment	Work Done	
194	38+275	38+315	40	Widening & strengthening	Work Done	
195	38+315	38+400	85	Realignment	Work Done	
196	38+400	38+435	35	Widening & strengthening	Work Done	
197	38+435	38+520	85	Widening & strengthening	Work Done	
198	38+520	38+540	20	Widening & strengthening	Work Done	
199	38+540	38+560	20	Widening & strengthening	Work Done	
200	38+560	38+640	80	Realignment	Work Done	
201	38+640	38+660	20	Realignment	Work Done	
202	38+660	38+730	70	Realignment	Work Done	
203	38+730	38+850	120	Realignment	Work Done	
204	38+850	38+940	90	Widening & strengthening	Work not Done	
205	38+940	38+990	50	Widening & strengthening	Work not Done	MNB Portion

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

206	38+990	39+040	50	Realignment	Work not Done	
207	39+040	39+080	40	Realignment	Work not Done	
208	39+080	39+360	280	Realignment	Work Done	
209	39+360	39+380	20	Realignment	Work Done	
210	39+380	39+480	100	Realignment	Work Done	
211	39+480	39+500	20	Realignment	Work Done	
212	39+500	39+570	70	Realignment	Work Done	
213	39+570	40+000	430	Realignment	Work not Done	
<b>Total Length</b>			<b>20000</b>	<b>Meter</b>		

(ii) Details of GSB Work

Sl.No.	Chainage		Length (m)	Improvement Proposal	Details of Work done by Previous Contractor	Remarks As per Site Condition
	From	To				
1	20+000	20+035	35	Realignment	GSB	
2	20+035	20+200	165	Widening & strengthening	GSB	
3	20+200	20+245	45	Realignment	GSB	
4	20+245	20+350	105	Widening & strengthening	GSB	
5	20+350	20+395	45	Realignment	GSB	
6	20+395	20+450	55	Widening & strengthening	GSB	
7	20+550	20+650	100	Widening & strengthening	GSB	
8	20+650	20+660	10	Widening & strengthening	GSB	
9	20+660	20+715	55	Widening & strengthening	GSB	
10	20+715	20+790	75	Realignment	GSB	
11	20+790	20+800	10	Realignment	GSB	
12	20+800	20+940	140	Widening & strengthening	GSB	
13	20+940	21+030	90	Realignment	GSB	
14	21+030	21+050	20	Widening & strengthening	GSB	
15	21+050	21+350	300	Widening & strengthening	GSB	
16	21+350	21+430	80	Realignment	GSB	
17	21+430	21+450	20	Realignment	GSB	
18	21+450	21+630	180	Widening & strengthening	GSB	
19	21+630	21+650	20	Widening & strengthening	GSB	
20	21+650	21+740	90	Widening & strengthening	GSB	
21	21+740	21+770	30	Realignment	GSB	
22	21+770	21+850	80	Widening & strengthening	GSB	
23	21+850	21+990	140	Widening & strengthening	GSB	
24	21+990	22+120	130	Realignment	GSB	
25	22+120	22+130	10	Realignment	GSB	
26	22+130	23+000	870	Widening & strengthening	GSB	
27	23+000	23+150	150	Widening & strengthening	GSB	
28	23+150	23+280	130	Widening & strengthening	GSB	
29	23+335	23+350	15	Realignment	GSB	
30	23+350	23+400	50	Realignment	GSB	

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31	23+400	23+450	50	Widening & strengthening	GSB	
32	23+450	23+840	390	Widening & strengthening	GSB	
33	23+840	23+865	25	Realignment	GSB	
34	23+865	24+035	170	Widening & strengthening	GSB	
35	24+035	24+065	30	Realignment	GSB	
36	24+065	24+110	45	Widening & strengthening	GSB	
37	24+110	24+200	90	Widening & strengthening	GSB	
38	24+200	24+260	60	Widening & strengthening	GSB	
39	24+260	24+355	95	Realignment	GSB	
40	24+355	24+440	85	Widening & strengthening	GSB	
41	24+440	24+460	20	Widening & strengthening	GSB	
42	24+460	24+725	265	Widening & strengthening	GSB	
43	24+725	24+970	245	Realignment	GSB	
44	24+970	25+000	30	Realignment	GSB	
45	25+200	25+250	50	Widening & strengthening	GSB	
46	25+250	25+440	190	Widening & strengthening	GSB	
47	25+440	25+465	25	Realignment	GSB	
48	25+465	25+530	65	Widening & strengthening	GSB	
49	25+530	25+540	10	Widening & strengthening	GSB	
50	25+540	25+560	20	Widening & strengthening	GSB	
51	25+560	25+620	60	Realignment	GSB	
52	25+620	25+850	230	Widening & strengthening	GSB	
53	25+850	25+980	130	Realignment	GSB	
54	25+980	26+010	30	Realignment	GSB	
55	26+010	26+070	60	Realignment	GSB	
56	26+070	26+100	30	Realignment	GSB	
57	26+100	26+210	110	Widening & strengthening	GSB	
58	26+210	26+235	25	Widening & strengthening	GSB	
59	26+235	26+320	85	Realignment	GSB	
60	26+320	26+460	140	Realignment	GSB	
61	26+460	26+650	190	Widening & strengthening	GSB	
62	26+650	26+700	50	Widening & strengthening	GSB	
63	26+700	26+730	30	Realignment	GSB	
64	26+730	26+900	170	Widening & strengthening	GSB	
65	26+900	26+905	5	Widening & strengthening	GSB	
66	26+905	26+950	45	Realignment	GSB	
67	26+950	26+955	5	Realignment	GSB	
68	26+955	26+960	5	Widening & strengthening	GSB	
69	26+960	26+990	30	Widening & strengthening	GSB	
70	26+990	27+150	160	Widening & strengthening	GSB	
71	27+150	27+190	40	Widening & strengthening	GSB	
72	27+190	27+600	410	Widening & strengthening	GSB	
73	27+600	27+750	150	Realignment	GSB	
74	27+750	27+850	100	Widening & strengthening	GSB	
75	27+850	27+900	50	Realignment	GSB	
76	27+900	28+040	140	Widening & strengthening	GSB	

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77	28+040	28+110	70	Widening & strengthening	GSB	
78	28+110	28+270	160	Widening & strengthening	GSB	
79	28+270	28+360	90	Widening & strengthening	GSB	
80	28+360	28+410	50	Realignment	GSB	
81	28+410	28+490	80	Widening & strengthening	GSB	
82	28+490	28+500	10	Realignment	GSB	
83	28+500	28+700	200	Realignment	GSB	
84	28+700	28+750	50	Widening & strengthening	GSB	
85	28+750	28+790	40	Widening & strengthening	GSB	
86	28+790	28+940	150	Widening & strengthening	GSB	
87	28+940	29+040	100	Widening & strengthening	GSB	
88	29+090	29+150	60	Widening & strengthening	GSB	
89	29+150	29+170	20	Widening & strengthening	GSB	
90	29+170	29+220	50	Widening & strengthening	GSB	
91	29+220	29+230	10	Widening & strengthening	GSB	
92	29+230	29+320	90	Widening & strengthening	GSB	
93	29+320	29+390	70	Widening & strengthening	GSB	
94	29+390	29+490	100	Widening & strengthening	GSB	
95	29+490	29+540	50	Realignment	GSB	
96	29+540	29+750	210	Widening & strengthening	GSB	
97	29+750	30+110	360	Realignment	GSB	
98	30+110	30+160	50	Widening & strengthening	GSB	
99	30+160	30+205	45	Widening & strengthening	GSB	
100	30+205	30+300	95	Realignment	GSB	
101	30+300	30+470	170	Realignment	GSB	
102	30+470	31+300	830	Widening & strengthening	GSB	
103	31+300	31+510	210	Realignment	GSB	
104	31+510	31+620	110	Realignment	GSB	
105	31+620	31+660	40	Widening & strengthening	GSB	
106	32+000	32+100	100	Realignment	GSB	
107	32+100	32+240	140	Widening & strengthening	GSB	
108	32+240	32+310	70	Realignment	GSB	
109	32+310	32+400	90	Widening & strengthening	GSB	
110	32+400	32+440	40	Realignment	GSB	
111	32+440	32+545	105	Widening & strengthening	GSB	
112	32+545	32+600	55	Realignment	GSB	
113	32+600	32+665	65	Realignment	GSB	
114	32+665	32+740	75	Widening & strengthening	GSB	
115	32+740	32+790	50	Realignment	GSB	
116	32+790	32+900	110	Widening & strengthening	GSB	
117	32+900	32+960	60	Realignment	GSB	
118	32+960	33+360	400	Widening & strengthening	GSB	
119	33+360	33+500	140	Realignment	GSB	
120	33+500	33+550	50	Widening & strengthening	GSB	
121	33+550	33+650	100	Widening & strengthening	GSB	
122	33+650	33+720	70	Widening & strengthening	GSB	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

123	33+720	33+870	150	Widening & strengthening	GSB	
124	33+870	33+910	40	Widening & strengthening	GSB	
125	33+910	34+120	210	Widening & strengthening	GSB	
126	34+120	34+150	30	Widening & strengthening	GSB	
127	34+150	34+280	130	Widening & strengthening	GSB	
128	34+280	34+320	40	Widening & strengthening	GSB	
129	34+320	34+450	130	Widening & strengthening	GSB	
130	34+450	34+535	85	Realignment	GSB	
131	34+535	34+640	105	Realignment	GSB	
132	34+640	34+650	10	Widening & strengthening	GSB	
133	34+650	34+670	20	Widening & strengthening	GSB	
134	34+780	34+810	30	Widening & strengthening	GSB	
135	34+810	34+850	40	Realignment	GSB	
136	34+850	34+855	5	Realignment	GSB	
137	34+855	35+235	380	Widening & strengthening	GSB	
138	35+260	35+400	140	Widening & strengthening	GSB	
139	35+400	35+450	50	Realignment	GSB	
140	35+450	35+480	30	Widening & strengthening	GSB	
141	35+480	35+505	25	Realignment	GSB	
142	35+505	35+590	85	Widening & strengthening	GSB	
143	35+590	35+690	100	Realignment	GSB	
144	35+690	35+850	160	Widening & strengthening	GSB	
145	35+850	35+890	40	Widening & strengthening	GSB	
146	35+890	35+920	30	Realignment	GSB	
147	35+920	36+030	110	Realignment	GSB	
148	36+030	36+080	50	Widening & strengthening	GSB	
149	36+080	36+155	75	Widening & strengthening	GSB	
150	36+155	36+280	125	Realignment	GSB	
151	36+280	36+300	20	Widening & strengthening	GSB	
152	36+300	36+320	20	Widening & strengthening	GSB	
153	36+320	36+400	80	Realignment	GSB	
154	36+400	36+430	30	Widening & strengthening	GSB	
155	36+430	36+450	20	Widening & strengthening	GSB	
156	36+450	36+490	40	Realignment	GSB	
157	36+490	36+595	105	Widening & strengthening	GSB	
158	36+595	36+670	75	Realignment	GSB	
159	36+670	36+710	40	Widening & strengthening	GSB	
160	36+710	36+730	20	Widening & strengthening	GSB	
161	36+730	37+060	330	Widening & strengthening	GSB	
162	37+060	37+100	40	Realignment	GSB	
163	37+100	37+110	10	Widening & strengthening	GSB	
164	37+110	37+130	20	Widening & strengthening	GSB	
165	37+130	37+230	100	Widening & strengthening	GSB	
166	37+230	37+250	20	Widening & strengthening	GSB	
167	37+250	37+515	265	Widening & strengthening	GSB	
168	37+515	37+550	35	Widening & strengthening	GSB	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

169	37+550	37+620	70	Widening & strengthening	GSB	
170	37+620	37+640	20	Widening & strengthening	GSB	
171	37+640	37+725	85	Widening & strengthening	GSB	
172	37+725	37+750	25	Widening & strengthening	GSB	
173	37+750	37+850	100	Widening & strengthening	GSB	
174	38+000	38+080	80	Widening & strengthening	GSB	
175	38+080	38+120	40	Widening & strengthening	GSB	
176	38+120	38+215	95	Widening & strengthening	GSB	
177	38+215	38+275	60	Realignment	GSB	
178	38+275	38+315	40	Widening & strengthening	GSB	
179	38+315	38+400	85	Realignment	GSB	
180	38+400	38+435	35	Widening & strengthening	GSB	
181	38+435	38+520	85	Widening & strengthening	GSB	
182	38+520	38+540	20	Widening & strengthening	GSB	
183	38+540	38+560	20	Widening & strengthening	GSB	
184	38+560	38+640	80	Realignment	GSB	
185	38+640	38+660	20	Realignment	GSB	
186	38+660	38+730	70	Realignment	GSB	
187	38+730	38+850	120	Realignment	GSB	
188	39+080	39+360	280	Realignment	GSB	
189	39+360	39+380	20	Realignment	GSB	
190	39+380	39+480	100	Realignment	GSB	
191	39+480	39+500	20	Realignment	GSB	

(iii) Details of WMM Work

Sl.No.	Chainage		Length (m)	Improvement Proposal	Details of Work done by Previous Contractor	Remarks As per Site Condition
1	20+000	20+035	35	Realignment	WMM	
2	20+035	20+200	165	Widening & strengthening	WMM	
3	20+200	20+245	45	Realignment	WMM	
4	20+245	20+350	105	Widening & strengthening	WMM	
5	20+350	20+395	45	Realignment	WMM	
6	20+395	20+450	55	Widening & strengthening	WMM	
7	20+550	20+650	100	Widening & strengthening	WMM	
8	20+650	20+660	10	Widening & strengthening	WMM	
9	20+660	20+715	55	Widening & strengthening	WMM	
10	20+715	20+790	75	Realignment	WMM	
11	20+790	20+800	10	Realignment	WMM	
12	20+800	20+940	140	Widening & strengthening	WMM	
13	20+940	21+030	90	Realignment	WMM	
14	21+030	21+050	20	Widening & strengthening	WMM	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

15	21+050	21+350	300	Widening & strengthening	WMM	
16	21+350	21+430	80	Realignment	WMM	
17	21+430	21+450	20	Realignment	WMM	
18	21+450	21+630	180	Widening & strengthening	WMM	
19	21+630	21+650	20	Widening & strengthening	WMM	
20	21+650	21+740	90	Widening & strengthening	WMM	
21	21+740	21+770	30	Realignment	WMM	
22	21+770	21+850	80	Widening & strengthening	WMM	
23	21+850	21+990	140	Widening & strengthening	WMM	
24	21+990	22+120	130	Realignment	WMM	
25	22+120	22+130	10	Realignment	WMM	
26	22+130	23+000	870	Widening & strengthening	WMM	
27	23+000	23+150	150	Widening & strengthening	WMM	
28	23+150	23+200	50	Widening & strengthening	WMM	
29	23+335	23+350	15	Realignment	WMM	
30	23+350	23+400	50	Realignment	WMM	
31	23+400	23+450	50	Widening & strengthening	WMM	
32	23+450	23+840	390	Widening & strengthening	WMM	
33	23+840	23+865	25	Realignment	WMM	
34	23+865	24+035	170	Widening & strengthening	WMM	
35	24+035	24+065	30	Realignment	WMM	
36	24+065	24+110	45	Widening & strengthening	WMM	
37	24+110	24+200	90	Widening & strengthening	WMM	
38	24+200	24+260	60	Widening & strengthening	WMM	
39	24+260	24+355	95	Realignment	WMM	
40	24+355	24+440	85	Widening & strengthening	WMM	
41	24+440	24+460	20	Widening & strengthening	WMM	
42	24+460	24+725	265	Widening & strengthening	WMM	
43	24+725	24+980	255	Realignment	WMM	
44	25+200	25+250	50	Widening & strengthening	WMM	
45	25+250	25+440	190	Widening & strengthening	WMM	
46	25+440	25+465	25	Realignment	WMM	
47	25+465	25+530	65	Widening & strengthening	WMM	
48	25+530	25+540	10	Widening & strengthening	WMM	
49	25+540	25+560	20	Widening & strengthening	WMM	
50	25+560	25+620	60	Realignment	WMM	
51	25+620	25+850	230	Widening & strengthening	WMM	
52	25+850	25+980	130	Realignment	WMM	
53	25+980	26+010	30	Realignment	WMM	
54	26+010	26+070	60	Realignment	WMM	
55	26+070	26+100	30	Realignment	WMM	
56	26+100	26+210	110	Widening & strengthening	WMM	
57	26+210	26+235	25	Widening & strengthening	WMM	
58	26+235	26+320	85	Realignment	WMM	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

59	26+320	26+460	140	Realignment	WMM	
60	26+460	26+650	190	Widening & strengthening	WMM	
61	26+650	26+700	50	Widening & strengthening	WMM	
62	26+700	26+730	30	Realignment	WMM	
63	26+730	26+900	170	Widening & strengthening	WMM	
64	26+900	26+905	5	Widening & strengthening	WMM	
65	26+905	26+950	45	Realignment	WMM	
66	26+950	26+955	5	Realignment	WMM	
67	26+955	26+960	5	Widening & strengthening	WMM	
68	26+960	26+990	30	Widening & strengthening	WMM	
69	26+990	27+150	160	Widening & strengthening	WMM	
70	27+150	27+190	40	Widening & strengthening	WMM	
71	27+190	27+600	410	Widening & strengthening	WMM	
72	27+600	27+750	150	Realignment	WMM	
73	27+750	27+850	100	Widening & strengthening	WMM	
74	27+850	27+900	50	Realignment	WMM	
75	27+900	28+040	140	Widening & strengthening	WMM	
76	28+040	28+110	70	Widening & strengthening	WMM	
77	28+110	28+270	160	Widening & strengthening	WMM	
78	28+270	28+360	90	Widening & strengthening	WMM	
79	28+360	28+410	50	Realignment	WMM	
80	28+410	28+490	80	Widening & strengthening	WMM	
81	28+490	28+500	10	Realignment	WMM	
82	28+500	28+700	200	Realignment	WMM	
83	28+700	28+750	50	Widening & strengthening	WMM	
84	28+750	28+790	40	Widening & strengthening	WMM	
85	28+790	28+940	150	Widening & strengthening	WMM	
86	28+940	29+030	90	Widening & strengthening	WMM	
87	29+090	29+150	60	Widening & strengthening	WMM	
88	29+150	29+170	20	Widening & strengthening	WMM	
89	29+170	29+220	50	Widening & strengthening	WMM	
90	29+220	29+230	10	Widening & strengthening	WMM	
91	29+230	29+320	90	Widening & strengthening	WMM	
92	29+320	29+390	70	Widening & strengthening	WMM	
93	29+390	29+490	100	Widening & strengthening	WMM	
94	29+490	29+540	50	Realignment	WMM	
95	29+540	29+750	210	Widening & strengthening	WMM	
96	29+750	30+110	360	Realignment	WMM	
97	30+110	30+160	50	Widening & strengthening	WMM	
98	30+160	30+205	45	Widening & strengthening	WMM	
99	30+205	30+300	95	Realignment	WMM	
100	30+300	30+470	170	Realignment	WMM	
101	30+470	31+300	830	Widening & strengthening	WMM	
102	31+300	31+510	210	Realignment	WMM	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

103	31+510	31+620	110	Realignment	WMM	
104	31+620	31+660	40	Widening & strengthening	WMM	
105	32+000	32+100	100	Realignment	WMM	
106	32+100	32+240	140	Widening & strengthening	WMM	
107	32+240	32+310	70	Realignment	WMM	
108	32+310	32+400	90	Widening & strengthening	WMM	
109	32+400	32+440	40	Realignment	WMM	
110	32+440	32+545	105	Widening & strengthening	WMM	
111	32+545	32+600	55	Realignment	WMM	
112	32+600	32+665	65	Realignment	WMM	
113	32+665	32+740	75	Widening & strengthening	WMM	
114	32+740	32+790	50	Realignment	WMM	
115	32+790	32+900	110	Widening & strengthening	WMM	
116	32+900	32+960	60	Realignment	WMM	
117	32+960	33+360	400	Widening & strengthening	WMM	
118	33+360	33+500	140	Realignment	WMM	
119	33+500	33+550	50	Widening & strengthening	WMM	
120	33+550	33+650	100	Widening & strengthening	WMM	
121	33+650	33+720	70	Widening & strengthening	WMM	
122	33+720	33+870	150	Widening & strengthening	WMM	
123	33+870	33+910	40	Widening & strengthening	WMM	
124	33+910	34+120	210	Widening & strengthening	WMM	
125	34+120	34+150	30	Widening & strengthening	WMM	
126	34+150	34+280	130	Widening & strengthening	WMM	
127	34+280	34+320	40	Widening & strengthening	WMM	
128	34+320	34+450	130	Widening & strengthening	WMM	
129	34+450	34+535	85	Realignment	WMM	
130	34+535	34+550	15	Realignment	WMM	
131	34+810	34+850	40	Realignment	WMM	
132	34+850	34+855	5	Realignment	WMM	
133	34+855	35+235	380	Widening & strengthening	WMM	
134	35+260	35+400	140	Widening & strengthening	WMM	
135	35+400	35+450	50	Realignment	WMM	
136	35+450	35+480	30	Widening & strengthening	WMM	
137	35+480	35+505	25	Realignment	WMM	
138	35+505	35+590	85	Widening & strengthening	WMM	
139	35+590	35+690	100	Realignment	WMM	
140	35+690	35+850	160	Widening & strengthening	WMM	
141	35+850	35+890	40	Widening & strengthening	WMM	
142	35+890	35+920	30	Realignment	WMM	
143	35+920	36+030	110	Realignment	WMM	
144	36+030	36+080	50	Widening & strengthening	WMM	
145	36+080	36+155	75	Widening & strengthening	WMM	
146	36+155	36+280	125	Realignment	WMM	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

147	36+280	36+300	20	Widening & strengthening	WMM	
148	36+300	36+320	20	Widening & strengthening	WMM	
149	36+320	36+400	80	Realignment	WMM	
150	36+400	36+430	30	Widening & strengthening	WMM	
151	36+430	36+450	20	Widening & strengthening	WMM	
152	36+450	36+490	40	Realignment	WMM	
153	36+490	36+595	105	Widening & strengthening	WMM	
154	36+595	36+670	75	Realignment	WMM	
155	36+670	36+710	40	Widening & strengthening	WMM	
156	36+710	36+730	20	Widening & strengthening	WMM	
157	36+730	37+060	330	Widening & strengthening	WMM	
158	37+060	37+100	40	Realignment	WMM	
159	37+100	37+110	10	Widening & strengthening	WMM	
160	37+110	37+130	20	Widening & strengthening	WMM	
161	37+130	37+230	100	Widening & strengthening	WMM	
162	37+230	37+250	20	Widening & strengthening	WMM	
163	37+250	37+515	265	Widening & strengthening	WMM	
164	37+515	37+550	35	Widening & strengthening	WMM	
165	37+550	37+620	70	Widening & strengthening	WMM	
166	37+620	37+640	20	Widening & strengthening	WMM	
167	37+640	37+725	85	Widening & strengthening	WMM	
168	37+725	37+750	25	Widening & strengthening	WMM	
169	37+750	37+850	100	Widening & strengthening	WMM	
170	38+000	38+080	80	Widening & strengthening	WMM	
171	38+080	38+120	40	Widening & strengthening	WMM	
172	38+120	38+215	95	Widening & strengthening	WMM	
173	38+215	38+275	60	Realignment	WMM	
174	38+275	38+315	40	Widening & strengthening	WMM	
175	38+315	38+400	85	Realignment	WMM	
176	38+400	38+435	35	Widening & strengthening	WMM	
177	38+435	38+520	85	Widening & strengthening	WMM	
178	38+520	38+540	20	Widening & strengthening	WMM	
179	38+540	38+560	20	Widening & strengthening	WMM	
180	38+560	38+640	80	Realignment	WMM	
181	38+640	38+660	20	Realignment	WMM	
182	38+660	38+730	70	Realignment	WMM	
183	38+730	38+850	120	Realignment	WMM	
184	39+120	39+360	240	Realignment	WMM	
185	39+360	39+380	20	Realignment	WMM	
186	39+380	39+480	100	Realignment	WMM	
187	39+480	39+500	20	Realignment	WMM	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

(iv) Details of DBM Work

Sl.No.	Chainage		Length (m)	Improvement Proposal	Details of Work done by Previous Contractor	Remarks As per Site Condition
	From	To				
1	20+550	20+650	100	Widening & strengthening	DBM	
2	20+660	20+715	55	Widening & strengthening	DBM	
3	20+715	20+790	75	Realignment	DBM	
4	20+800	20+940	140	Widening & strengthening	DBM	
5	20+940	21+030	90	Realignment	DBM	
6	21+050	21+350	300	Widening & strengthening	DBM	
7	21+350	21+430	80	Realignment	DBM	
8	21+450	21+630	180	Widening & strengthening	DBM	
9	21+650	21+740	90	Widening & strengthening	DBM	
10	21+740	21+770	30	Realignment	DBM	
11	21+850	21+990	140	Widening & strengthening	DBM	
12	21+990	22+120	130	Realignment	DBM	
13	22+130	22+880	750	Widening & strengthening	DBM	
14	22+880	22+930	50	Widening & strengthening	DBM	RHS Done
15	22+930	23+000	70	Widening & strengthening	DBM	
16	23+450	23+840	390	Widening & strengthening	DBM	
17	23+840	23+865	25	Realignment	DBM	
18	23+865	24+035	170	Widening & strengthening	DBM	
19	24+035	24+065	30	Realignment	DBM	
20	24+065	24+110	45	Widening & strengthening	DBM	
21	24+200	24+260	60	Widening & strengthening	DBM	
22	24+260	24+355	95	Realignment	DBM	
23	24+355	24+440	85	Widening & strengthening	DBM	
24	24+460	24+725	265	Widening & strengthening	DBM	
25	24+725	24+970	245	Realignment	DBM	
26	25+250	25+370	120	Widening & strengthening	DBM	
27	25+370	25+400	30	Widening & strengthening	DBM	RHS Done
28	25+400	25+440	40	Widening & strengthening	DBM	
29	25+440	25+465	25	Realignment	DBM	
30	25+465	25+530	65	Widening & strengthening	DBM	
31	25+540	25+560	20	Widening & strengthening	DBM	
32	25+560	25+620	60	Realignment	DBM	
33	25+620	25+850	230	Widening & strengthening	DBM	
34	25+850	25+980	130	Realignment	DBM	
35	26+010	26+070	60	Realignment	DBM	RHS Done
36	26+070	26+100	30	Realignment	DBM	
37	26+100	26+210	110	Widening & strengthening	DBM	
38	26+320	26+460	140	Realignment	DBM	
39	26+650	26+700	50	Widening & strengthening	DBM	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

40	26+700	26+730	30	Realignment	DBM	
41	26+730	26+900	170	Widening & strengthening	DBM	
42	26+905	26+950	45	Realignment	DBM	
43	26+960	26+990	30	Widening & strengthening	DBM	
44	27+190	27+600	410	Widening & strengthening	DBM	
45	27+600	27+750	150	Realignment	DBM	
46	27+750	27+850	100	Widening & strengthening	DBM	
47	27+850	27+900	50	Realignment	DBM	
48	27+900	28+040	140	Widening & strengthening	DBM	
49	28+040	28+110	70	Widening & strengthening	DBM	RHS Done
50	28+110	28+270	160	Widening & strengthening	DBM	
51	28+790	28+940	150	Widening & strengthening	DBM	
52	28+940	29+030	90	Widening & strengthening	DBM	RHS Done
53	29+090	29+150	60	Widening & strengthening	DBM	
54	29+170	29+220	50	Widening & strengthening	DBM	
55	29+230	29+320	90	Widening & strengthening	DBM	
56	29+320	29+390	70	Widening & strengthening	DBM	RHS Done
57	29+390	29+490	100	Widening & strengthening	DBM	
58	29+490	29+540	50	Realignment	DBM	
59	29+540	29+750	210	Widening & strengthening	DBM	
60	29+750	30+110	360	Realignment	DBM	
61	30+110	30+160	50	Widening & strengthening	DBM	
62	30+300	30+470	170	Realignment	DBM	
63	30+470	31+300	830	Widening & strengthening	DBM	
64	31+300	31+510	210	Realignment	DBM	
65	32+000	32+100	100	Realignment	DBM	
66	32+100	32+240	140	Widening & strengthening	DBM	
67	32+240	32+310	70	Realignment	DBM	
68	32+310	32+400	90	Widening & strengthening	DBM	
69	32+400	32+440	40	Realignment	DBM	
70	32+440	32+545	105	Widening & strengthening	DBM	
71	32+545	32+600	55	Realignment	DBM	
72	32+600	32+665	65	Realignment	DBM	
73	32+665	32+740	75	Widening & strengthening	DBM	
74	32+740	32+790	50	Realignment	DBM	
75	32+790	32+900	110	Widening & strengthening	DBM	
76	32+900	32+960	60	Realignment	DBM	
77	32+960	33+360	400	Widening & strengthening	DBM	
78	33+360	33+500	140	Realignment	DBM	
79	33+500	33+550	50	Widening & strengthening	DBM	
80	33+550	33+650	100	Widening & strengthening	DBM	
81	33+650	33+720	70	Widening & strengthening	DBM	
82	33+720	33+870	150	Widening & strengthening	DBM	
83	33+910	34+120	210	Widening & strengthening	DBM	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

84	34+150	34+280	130	Widening & strengthening	DBM	
85	34+320	34+450	130	Widening & strengthening	DBM	
86	34+450	34+535	85	Realignment	DBM	
87	34+850	34+855	5	Realignment	DBM	
88	34+855	35+235	380	Widening & strengthening	DBM	
89	35+235	35+260	25	Realignment	DBM	
90	35+260	35+400	140	Widening & strengthening	DBM	
91	35+400	35+450	50	Realignment	DBM	
92	35+450	35+480	30	Widening & strengthening	DBM	
93	35+480	35+505	25	Realignment	DBM	
94	35+505	35+590	85	Widening & strengthening	DBM	
95	35+590	35+690	100	Realignment	DBM	
96	35+690	35+850	160	Widening & strengthening	DBM	
97	35+850	35+890	40	Widening & strengthening	DBM	
98	35+890	35+920	30	Realignment	DBM	
99	35+920	36+030	110	Realignment	DBM	
100	36+030	36+080	50	Widening & strengthening	DBM	
101	36+080	36+155	75	Widening & strengthening	DBM	
102	36+155	36+280	125	Realignment	DBM	
103	36+280	36+300	20	Widening & strengthening	DBM	
104	36+300	36+320	20	Widening & strengthening	DBM	
105	36+320	36+400	80	Realignment	DBM	
106	36+430	36+450	20	Widening & strengthening	DBM	
107	36+450	36+490	40	Realignment	DBM	
108	36+490	36+595	105	Widening & strengthening	DBM	
109	36+595	36+670	75	Realignment	DBM	
110	36+670	36+710	40	Widening & strengthening	DBM	
111	36+730	37+060	330	Widening & strengthening	DBM	
112	37+060	37+100	40	Realignment	DBM	
113	37+100	37+110	10	Widening & strengthening	DBM	
114	37+130	37+230	100	Widening & strengthening	DBM	
115	37+250	37+515	265	Widening & strengthening	DBM	
116	37+550	37+620	70	Widening & strengthening	DBM	
117	37+640	37+725	85	Widening & strengthening	DBM	
118	37+725	37+750	25	Widening & strengthening	DBM	
119	37+750	37+850	100	Widening & strengthening	DBM	
120	38+000	38+080	80	Widening & strengthening	DBM	
121	38+120	38+215	95	Widening & strengthening	DBM	
122	38+215	38+275	60	Realignment	DBM	
123	38+275	38+315	40	Widening & strengthening	DBM	
124	38+315	38+400	85	Realignment	DBM	
125	38+400	38+435	35	Widening & strengthening	DBM	
126	38+435	38+495	60	Widening & strengthening	DBM	
127	38+495	38+520	25	Widening & strengthening	DBM	RHS Done

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

128	38+540	38+560	20	Widening & strengthening	DBM	
129	38+560	38+640	80	Realignment	DBM	
130	38+660	38+730	70	Realignment	DBM	
131	39+120	39+360	240	Realignment	DBM	
132	39+380	39+500	120	Realignment	DBM	

(v) Details of Hard Shoulder

Sl.No.	Chainage		Length (m)	Improvement Proposal	Details of Work done by Previous Contractor	Remarks As per Site Condition
	From	To				
1	21+110	21+250	140	Widening & strengthening	Hard Shoulder	RHS Done
2	25+450	25+465	15	Realignment	Hard Shoulder	RHS Done
3	25+465	25+530	65	Widening & strengthening	Hard Shoulder	RHS Done
4	25+540	25+560	20	Widening & strengthening	Hard Shoulder	RHS Done
5	25+560	25+620	60	Realignment	Hard Shoulder	RHS Done
6	25+620	25+810	190	Widening & strengthening	Hard Shoulder	RHS Done
7	25+820	25+850	30	Widening & strengthening	Hard Shoulder	RHS Done
8	25+850	25+980	130	Realignment	Hard Shoulder	RHS Done
9	26+010	26+070	60	Realignment	Hard Shoulder	RHS Done
10	26+070	26+100	30	Realignment	Hard Shoulder	
11	26+100	26+150	50	Widening & strengthening	Hard Shoulder	
12	26+150	26+210	60	Widening & strengthening	Hard Shoulder	RHS Done
13	26+320	26+460	140	Realignment	Hard Shoulder	
14	26+650	26+700	50	Widening & strengthening	Hard Shoulder	LHS Done
15	26+700	26+730	30	Realignment	Hard Shoulder	LHS Done
16	26+730	26+800	70	Widening & strengthening	Hard Shoulder	LHS Done
17	27+190	27+400	210	Widening & strengthening	Hard Shoulder	
18	27+410	27+500	90	Widening & strengthening	Hard Shoulder	LHS Done
19	27+500	27+520	20	Widening & strengthening	Hard Shoulder	
20	27+520	27+570	50	Widening & strengthening	Hard Shoulder	RHS Done
21	27+570	27+600	30	Widening & strengthening	Hard Shoulder	
22	27+600	27+750	150	Realignment	Hard Shoulder	
23	27+750	27+850	100	Widening & strengthening	Hard Shoulder	
24	27+850	27+900	50	Realignment	Hard Shoulder	LHS Done
25	27+900	27+920	20	Widening & strengthening	Hard Shoulder	LHS Done
26	27+920	28+000	80	Widening & strengthening	Hard Shoulder	
27	28+000	28+110	110	Widening & strengthening	Hard Shoulder	RHS Done
28	28+110	28+270	160	Widening & strengthening	Hard Shoulder	
29	28+790	28+930	140	Widening & strengthening	Hard Shoulder	RHS Done
30	29+090	29+120	30	Widening & strengthening	Hard Shoulder	
31	29+120	29+150	30	Widening & strengthening	Hard Shoulder	LHS Done
32	29+150	29+220	70	Widening & strengthening	Hard Shoulder	
33	29+220	29+230	10	Widening & strengthening	Hard Shoulder	
34	29+230	29+320	90	Widening & strengthening	Hard Shoulder	
35	29+320	29+370	50	Widening & strengthening	Hard Shoulder	RHS Done

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

36	29+390	29+490	100	Widening & strengthening	Hard Shoulder	
37	29+490	29+540	50	Realignment	Hard Shoulder	
38	29+540	29+620	80	Widening & strengthening	Hard Shoulder	
39	29+640	29+750	110	Widening & strengthening	Hard Shoulder	
40	29+750	30+110	360	Realignment	Hard Shoulder	
41	30+300	30+470	170	Realignment	Hard Shoulder	
42	30+470	31+300	830	Widening & strengthening	Hard Shoulder	
43	31+300	31+510	210	Realignment	Hard Shoulder	
44	32+600	32+665	65	Realignment	Hard Shoulder	
45	32+665	32+740	75	Widening & strengthening	Hard Shoulder	
46	32+740	32+790	50	Realignment	Hard Shoulder	
47	32+790	32+900	110	Widening & strengthening	Hard Shoulder	
48	32+900	32+960	60	Realignment	Hard Shoulder	RHS Done
49	32+960	33+360	400	Widening & strengthening	Hard Shoulder	
50	33+360	33+400	40	Realignment	Hard Shoulder	
51	35+300	35+400	100	Widening & strengthening	Hard Shoulder	RHS Done
52	35+400	35+450	50	Realignment	Hard Shoulder	RHS Done
53	35+450	35+480	30	Widening & strengthening	Hard Shoulder	RHS Done
54	35+480	35+505	25	Realignment	Hard Shoulder	RHS Done
55	35+505	35+590	85	Widening & strengthening	Hard Shoulder	RHS Done

**Note: - Bidders are requested to visit the site/stretch to understand the requirement of rectification as per their own assessment. The locations and length given above are tentative. The distressed locations should be identified with their exact chainages. The distresses should then be marked up in a grid pattern covering the distressed portion and beyond the distressed portion. Then the entire DBM/WMM/GSB/Sub-Grade layer (as the case may be) within the identified grid must be scrapped off thoroughly. After scrapping of DBM layer, the top WMM surface must be thoroughly checked with respect to degree of compaction and plasticity (within the grid) randomly by doing the test pits at few locations. Further it should be extended for GSB and subgrade layer with extraction of layer material to observe CBR value. If result does not comply in any of the layers, then in that grid all the material including subgrade should be excavated and reconstructed freshly. If subgrade soil is complying with the physical properties while GSB does not, then excavation should be made up to GSB layer and reconstruction should be done from GSB layer. The same should be done for WMM/GSB/Sub-Grade also.**

## 2. Land

The Site of the Project Highway comprises the land described below:

Sl. No.	Existing Chainage		Design Chainage		Length (M)	Existing / Available Row (M)	Remark
	From	To	From	To			
1	20+456	41+065	20+000	40+000	20000	24 - 50	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

### 3. Carriageway

The present carriageway of the Project Highway is substandard single / two lane configuration. The type of the existing pavement is flexible.

SI No.	Existing Chainage		Design Chainage		Length In M (Design)	Existing/ Lane Width	Remark
	From	To	From	To			
1	20+456	41+065	20+000	40+000	20000	3 to 7.0	Existing Carriageway as per above mentioned work done at site

### 4. Major Bridge

The Site includes the following Major Bridges:

S/no	Location in km	Type of Structures			Length of Bridge/ Span Arrangement (m)	Total width (m)
		Super Structure	Sub Structure	Foundation		
NIL						

### 5. Road over-bridges (ROB)/ Road under-bridges (RUB)

The Site includes the following ROB (road over railway line)/ RUB (road under railway line):

SI No	Chainage(km)	Type of structure		No of Span with Span length(m)	width (m)	ROB/RUB
		Foundation	Superstructure			
NIL						

### 6. Grade separators

The Site includes the following grade separators:

SI No	Chainage(km)	Type of structure		No of Span with Span length(m)	width (m)
		Foundation	Superstructure		
NIL					

## 7. Railway level crossings

The Site includes the following railway level crossings:

SI No	Location(km)	Remarks
NIL		

## 8. Underpasses (vehicular, Non-vehicular)

The Site includes the following underpasses:

SI No	Chainage (km)	Type of structure	No of Span with Span length(m)	width (m)
NIL				

## 9. Truck Lay bays

The details of truck bays on the Site are as follows:

SI. No.	Chainage(km)	Length(m)	Left Hand side	Right Hand side
NIL				

## 10. Road side drains

The details of the roadside drains are as follows:

SL. No	Chainages		Length	Side	REMARKS
	From	To			
1	20000	20026	26	LHS	
2	20030	20062	32	LHS	
3	20110	20142	32	LHS	
4	20142	20158	16	LHS	
5	20158	20180	22	LHS	
6	20290	20352	62	LHS	
7	20550	20580	30	LHS	
8	20580	20686	106	LHS	
9	20686	20790	104	LHS	
10	20830	20860	30	LHS	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

11	25630	25686	56	LHS	
12	26020	26132	112	LHS	
13	26320	26470	150	RHS	
14	27080	27098	18	RHS	
15	27600	27608	8	RHS	
16	27720	27755	35	RHS	
17	28129	28270	141	LHS	
18	28500	28580	80	LHS	
19	28679	28709	30	LHS	
20	28850	28900	50	RHS	
21	29358	29593	235	RHS	
22	30575	30643	68	LHS	
23	32365	32395	30	LHS	
24	32395	32435	40	LHS	
25	32435	32569	134	LHS	
26	32569	32600	31	LHS	
27	32600	32675	75	LHS	
28	32680	32786	106	LHS	
29	32900	33100	200	LHS	
30	33100	33230	130	LHS	
31	33240	33350	110	LHS	
32	33370	33390	20	LHS	
33	33390	33450	60	LHS	
34	34300	34380	80	LHS	
35	34385	34405	20	LHS	
36	34950	35088	138	LHS	
37	35090	35115	25	LHS	
38	35130	35149	19	LHS	
39	35149	35164	15	LHS	
40	35164	35222	58	LHS	
41	35222	35232	10	LHS	
42	35232	35270	38	LHS	
43	35280	35390	110	LHS	
44	35390	35410	20	LHS	
45	35410	35440	30	LHS	
46	35440	35480	40	LHS	
47	35480	35500	20	LHS	
48	35503	35559	56	LHS	
49	35559	35589	30	LHS	
50	35589	35610	22	LHS	
51	35620	35670	50	LHS	
52	35680	35835	155	LHS	
53	35845	35885	40		

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

## 11. Minor Bridges

The Site includes the following Minor Bridges:

Sl. No.	Road Segment	Design Chainage	Type Of Structures			No. of Span with span length	Width (m)	Remark
			Foundation	Sub-structure	Super Structure			
1	Merangkong -Tamlu - Mon	31+770	Open Foundation	stone masonry	Steel Truss	1x31.7	5.40	Work in Progress in LHS for proposed Bridge
2	Merangkong -Tamlu - Mon	34+722	not visible	stone masonry	RCC Slab	1x6.10	6.9	Work in Progress in RHS for proposed Bridge
3	Merangkong -Tamlu-Mon	38+987	not visible	stone masonry	Steel Truss	1x16.5	3.9	Work in Progress in LHS for proposed Bridge

## 12. Culvert

Sl. No.	Chainages (As per Bill)	Span (m)	Side	Remarks
1	20+040	1.5	BHS	Slab & Parapet complete BHS, Return wall complete RHS, Return wall Incomplete LHS, catch pit/apron balance BHS
2	20+506	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
3	20+657	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
4	20+791	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
5	21+033	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
6	21+456	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
7	21+693	3X2	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
8	21+870	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
9	21+942	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
10	22+150	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
11	22+640	3X2	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

Sl. No.	Chainages (As per Bill)	Span (m)	Side	Remarks
12	23+020	3.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
13	23+280	1.5	LHS	Slab complete LHS, no work RHS. Parapet, Return wall & catch pit/apron balance BHS
14	23+680	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
15	24+160	5.00	BHS	Slab completed BHS, parapet & Return wall complete RHS, Return wall, parapet wall balance in LHS, catch pit/apron balance BHS
16	24+445	3X2	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
17	25+170	1.5	BHS	Slab completed BHS, Parapet complete RHS, Return wall complete RHS, Return wall Incomplete LHS, catch pit/apron balance BHS
18	25+410	3X2	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
19	25+555	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
20	25+810	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
21	25+990	1.5	BHS	Slab complete BHS Parapet complete RHS, return wall complete RHS, return wall Incomplete LHS, catch pit/apron balance BHS
22	26+505	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
23	26+627	1.5	BHS	Slab complete BHS, Parapet complete LHS, Parapet balance RHS, return wall LHS A1 Complete, Return LHS A2 Incomplete, Return Wall Balance RHS, catch pit/apron balance BHS
24	26+900	1.5	BHS	Slab complete BHS, Parapet complete LHS, Parapet balance RHS Return wall, catch pit/apron balance BHS
25	26+940	1.5	BHS	Slab complete BHS, Parapet complete LHS, Parapet balance RHS Return wall, catch pit/apron balance BHS
26	27+030	5.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
27	27+113	1.5	BHS	Slab complete BHS, Parapet, return wall, catch pit/apron balance BHS, (required to extend 3meter more at RHS)
28	27+400	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
29	27+673 (26+879)	1.5	BHS	Slab complete BHS, Parapet complete LHS, Parapet balance RHS Return wall, catch pit/apron balance BHS
30	28+080	3X2	BHS	Slab Complete BHS, Parapet & Return wall complete RHS, Return wall & Parapet wall Incomplete LHS, catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

Sl. No.	Chainages (As per Bill)	Span (m)	Side	Remarks
31	28+320	1.5	BHS	Slab complete BHS, return wall complete RHS, return wall incomplete LHS, Parapet, catch pit/apron balance BHS
32	28+421	3X2	BHS	Slab complete BHS, Parapet, return wall Complete RHS, parapet, return wall incomplete LHS, catch pit/apron balance BHS
33	28+772	5	BHS	Slab complete BHS, Parapet & Return wall RHS Complete, return wall & parapet incomplete LHS, catch pit/apron balance BHS
34	29+063	3.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
35	29+180	1.5	BHS	Slab complete BHS, Parapet complete LHS, Parapet balance RHS Return wall complete LHS Return wall balance RHS , catch pit/apron balance BHS
36	29+253	1.5	BHS	Slab complete BHS, Parapet complete LHS, Parapet balance RHS Return wall, catch pit/apron balance BHS
37	29+406	3X2	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
38	29+650	3X2	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
39	29+868	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
40	30+500	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
41	30+570	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
42	30+930	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
43	31+970	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
44	32+160	3.0	BHS	Slab & Parapet complete BHS, return wall complete A1 side, return wall Incomplete A2 side, catch pit/apron balance BHS
45	32+350	3.0	BHS	Slab, Parapet, Return wall, Approach slab complete BHS , catch pit/apron balance BHS
46	32+655	1.5	BHS	Slab, Parapet, Return wall, complete BHS , catch pit/apron balance BHS
47	32+690	1.5	BHS	Slab complete BHS, Parapet complete BHS, return wall complete BHS, catch pit/apron balance BHS
48	32+900	3.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
49	33+310	2.0	BHS	Slab complete BHS, Parapet complete RHS, Parapet balance LHS, Return wall complete RHS, parapet /Return wall balance LHS catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

Sl. No.	Chainages (As per Bill)	Span (m)	Side	Remarks
50	33+587	5.0	BHS	Slab, Parapet, Return wall, complete BHS , catch pit/apron balance BHS
51	33+975	2.0	BHS	Slab complete BHS, Parapet complete RHS, Parapet balance LHS, Return wall complete RHS, parapet /Return wall balance LHS, approach slab complete RHS, approach slab balance LHS, catch pit/apron balance BHS
52	34+280	1.5	BHS	Slab complete BHS, Parapet complete BHS, return wall complete BHS, approach slab complete BHS, catch pit/apron balance BHS
53	34+350	2.0	BHS	Slab complete BHS, Parapet complete BHS, return wall complete BHS, approach slab complete BHS, catch pit/apron balance BHS
54	34+380	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
55	34+920 (34+790)	2.0	BHS	Slab complete BHS, Parapet Complete BHS, return wall Complete LHS, return wall balance RHS, catch pit/apron balance BHS
56	35+200	2.0	BHS	Slab complete BHS, Parapet & Return wall complete BHS, catch pit/apron balance BHS
57	35+320	2.0	BHS	Slab complete BHS, Parapet& Return wall catch pit/apron balance BHS
58	35+335	1.5	BHS	Slab complete BHS, Parapet Complete BHS, return wall complete RHS, return wall balance LHS, catch pit/apron balance BHS
59	35+600	2.0	BHS	Slab complete BHS, Parapet & Return wall complete LHS, parapet & return wall balance RHS, catch pit/apron balance BHS
60	35+790	1.5	BHS	Slab complete BHS, Parapet complete LHS, parapet balance RHS, return wall, catch pit/apron balance BHS
61	35+955	1.5	BHS	Slab complete BHS, Parapet complete LHS, parapet balance RHS, return wall, catch pit/apron balance BHS
62	36+065	2.0	BHS	Slab, Parapet, Return wall complete BHS, Approach slab complete BHS, catch pit/apron balance BHS
63	36+135	2.0	BHS	Slab complete BHS, Parapet & return wall complete RHS, parapet & Return wall balance LHS, catch pit/apron balance BHS
64	36+470	5.0	BHS	Slab complete BHS, Parapet complete BHS, return wall complete BHS, approach slab complete RHS, approach slab complete BHS, catch pit/apron balance BHS
65	36+529	2.0	BHS	Slab, Parapet, Return wall complete BHS, Approach slab complete BHS, catch pit/apron balance BHS
66	36+556	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

Sl. No.	Chainages (As per Bill)	Span (m)	Side	Remarks
67	36+967	2.0	BHS	Slab complete BHS, Parapet complete RHS, Parapet balance LHS, Return wall complete RHS, parapet /Return wall balance LHS, approach slab complete RHS, approach slab balance LHS, catch pit/apron balance BHS
68	37+030	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
69	37+190	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
70	37+265	2.0	BHS	Slab complete BHS, Parapet complete RHS, Parapet balance LHS, Return wall complete RHS, parapet /Return wall balance LHS, approach slab complete BHS, , catch pit/apron balance BHS
71	37+418	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
72	37+532	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
73	37+600	1.5	BHS	Slab complete BHS, Parapet complete RHS, Parapet balance LHS Return wall, catch pit/apron balance BHS
74	37+650	5.0	BHS	Slab complete BHS, Parapet complete RHS, Parapet wall balance LHS, return wall, catch pit/apron balance BHS
75	37+735	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
76	37+820	1.5	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
77	37+950	3.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
78	38+015	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
79	38+550	2.0	BHS	Slab complete BHS, Parapet & Return wall balance catch pit/apron balance BHS
80	38+770	1.5	BHS	Slab complete BHS, Parapet & Return wall complete RHS, Parapet, return wall balance LHS, catch pit/apron balance BHS
81	38+983	2.0	BHS	Slab complete BHS, Parapet, Return wall, catch pit/apron balance BHS
82	39+153	1.5	BHS	Slab complete BHS, Parapet, return wall, catch pit/apron balance BHS
83	39+420	1.5	BHS	Slab complete BHS, Parapet & Return wall complete RHS, parapet, return wall balance LHS, catch pit/apron balance BHS
84	39+640	1.5	BHS	Slab complete BHS, Parapet, return wall, catch pit/apron balance BHS
85	39+965	1.5	BHS	Slab complete BHS, Parapet, return wall, catch pit/apron balance BHS

### 13. Bus bays

The details of bus bays on the Site are as follows:

SI No	Chainage(km)	Length(m)	Left Hand side	Right Hand side
NIL				

### 14. Major Intersections along project:

The details of the minor junctions are as follows:

S. No.	Location		At grade	Separated	Category of Cross Road			
	From km	to km			NH	SH	MDR	Others
Nil								

### 15. Minor Intersections along project:

The details of the minor intersections are as follows:

SI. No.	Design Ch.	Location		Type of intersection		Road Type	Towards
		From Km	To Km	T-Junction	Cross Road		
Nil							

### 16. Bypass

The details of Bypasses are as follows:

SI No	Name of bypass (town)	Chainage (km)		Length (in km)	Carriageway	
		from (km)	To (km)		Width (m)	Type
NIL						

### 17. Other structures

The details of other structures are as follows.

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

(i) The details of Breast wall are as follows:

SL	Chainages		Length	Side	REMARKS
	From	To			
1	20300	20340	40	LHS	
2	20440	20468	28	LHS	Damage
3	22326	22366	40	LHS	
4	23620	23632	12	LHS	
5	23632	23644	12	LHS	
6	23644	23656	12	LHS	
7	28328	28391	63	LHS	
8	28580	28600	20	LHS	
9	28780	28792	12	LHS	
10	28792	28804	12	LHS	
11	28804	28816	12	LHS	
12	29040	29105	65	RHS	
14	29105	29115	10	RHS	
15	29115	29127	12	RHS	
16	29127	29142	15	RHS	
17	29142	29154	12	RHS	
18	29154	29170	16	RHS	
19	29186	29196	10	RHS	
20	29196	29223	27	RHS	
21	29230	29250	20	RHS	
22	29250	29275	25	RHS	
23	29275	29295	20	RHS	
24	29295	29319	24	RHS	
25	29319	29339	20	RHS	
26	29339	29355	16	RHS	
27	29355	29371	16	RHS	
28	30442	30505	63	LHS	
29	30505	30535	30	LHS	
30	30580	30610	30	LHS	
31	30610	30640	30	LHS	
32	30640	30650	10	LHS	
33	30650	30660	10	LHS	
34	33470	33482	12	LHS	
35	33662	33686	24	LHS	
36	33686	33710	24	LHS	
37	33710	33734	24	LHS	
38	36004	36016	12	LHS	
39	36016	36028	12	LHS	
40	36028	36040	12	LHS	
41	36040	36048	8	LHS	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

42	36048	36060	12	LHS	
43	36060	36072	12	LHS	
44	36072	36084	12	LHS	
45	36084	36094	10	LHS	
46	36094	36106	12	LHS	
47	36106	36118	12	LHS	
48	38130	38165	35	LHS	

(ii) The details of Retaining wall are as follows:

SL	Chainages		Length	Side	REMARKS
	From	To			
1	20+010	20+022	12	RHS	
2	20+032	20+071	39	RHS	
3	20+071	20+080	9	RHS	
4	20+080	20+211	131	RHS	
5	20+260	20+270	10	RHS	
6	20+270	20+282	12	RHS	
7	20+440	20+450	10	RHS	
8	20+450	20+468	18	RHS	(Damaged)
9	20+600	20+620	20	RHS	
10	21+200	21+220	20	RHS	
11	21+270	21+290	20	RHS	
12	21+300	21+330	30	RHS	
13	21+780	21+804	24	RHS	
14	21+870	21+890	20	RHS	
15	22+544	22+568	24	RHS	
16	22+568	22+580	12	RHS	
17	22+580	22+590	10	RHS	
18	23+023	23+033	10	RHS	
19	23+033	23+040	7	RHS	
20	23+150	23+160	10	RHS	Top lift not complete
21	23+160	23+180	20	RHS	
22	23+180	23+210	30	RHS	
23	23+210	23+222	12	RHS	1st lift complete
24	23+405	23+460	55	RHS	
25	23+500	23+519	19	RHS	
26	23+725	23+745	20	RHS	
27	23+745	23+747	2	RHS	
28	24+149	24+160	11	RHS	
29	24+260	24+284	24	RHS	
30	24+352	24+360	8	RHS	2nd lift complete
31	24+360	24+372	12	RHS	
32	24+936	24+984	48	RHS	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

33	25+050	25+062	12	RHS	
34	25+243	25+260	17	RHS	
35	25+940	25+980	40	RHS	
36	25+980	25+985	5	RHS	
37	26+000	26+030	30	RHS	
38	26+280	26+291	11	LHS	
39	26+291	26+305	14	LHS	
40	26+485	26+500	15	LHS	1st lift complete
41	26+510	26+525	15	LHS	1st lift complete
42	26+575	26+580	5	LHS	
43	26+580	26+620	40	LHS	
44	26+626	26+630	4	LHS	
45	26+630	26+690	60	LHS	
46	26+690	26+710	20	LHS	
47	26+710	26+730	20	LHS	
48	26+730	26+790	60	LHS	
49	26+820	26+840	20	LHS	
50	26+840	26+860	20	RHS	
51	26+860	26+870	10	LHS	
52	26+880	26+890	10	LHS	
53	27+360	27+385	25	LHS	
54	27+420	27+430	10	LHS	
55	27+430	27+448	18	LHS	
56	27+448	27+458	10	LHS	
57	27+458	27+470	12	LHS	
58	27+470	27+482	12	LHS	
59	27+554	27+566	12	LHS	
60	27+566	27+580	14	LHS	
61	27+580	27+600	20	LHS	
62	27+600	27+612	12	LHS	
63	27+612	27+635	23	LHS	
64	27+710	27+720	10	LHS	
65	27+720	27+735	15	LHS	
66	27+775	27+809	34	LHS	
67	27+809	27+820	11	LHS	
68	27+820	27+832	12	LHS	
69	27+838	27+863	25	LHS	
70	28+080	28+085	5	RHS	
71	28+085	28+100	15	RHS	
72	28+375	28+390	15	RHS	
73	28+400	28+410	10	RHS	
76	28+520	28+530	10	RHS	
77	28+528	28+540	12	RHS	1st lift complete
78	28+580	28+590	10	RHS	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

79	28+615	28+625	10	RHS	
80	28+900	28+915	14.6	LHS	
81	29+328	29+345	17	LHS	
82	30+235	30+248	13	RHS	
83	30+248	30+261	13	RHS	
84	30+261	30+283	22	RHS	
85	30+283	30+354	71	RHS	
86	30+354	30+404	50	RHS	
87	30+404	30+428	24	RHS	
88	30+428	30+440	12	RHS	
89	30+460	30+470	10	RHS	
90	30+470	30+484	14	RHS	
91	32+385	32+395	10	RHS	
92	32+438	32+487	49	RHS	
93	33+150	33+180	30	RHS	
94	33+318	33+330	12	RHS	
95	33+330	33+342	12	RHS	
96	33+450	33+498	48	RHS	
97	33+498	33+510	12	RHS	
98	33+510	33+522	12	RHS	1st lift complete
99	33+522	33+534	12	RHS	1st lift complete
100	33+800	33+812	12	RHS	
101	33+812	33+824	12	RHS	2nd lift complete
102	34+150	34+162	12	RHS	
103	34+162	34+174	12	RHS	1st lift complete
104	34+200	34+224	24	RHS	
105	34+300	34+318	18	RHS	
106	34+318	34+366	48	RHS	
107	34+400	34+443	43	RHS	
108	34+443	34+453	10	RHS	
109	35+630	35+650	20	RHS	
110	35+650	35+664	14	RHS	
111	35+770	35+785	15	RHS	
112	35+940	35+948	8	RHS	
113	35+955	35+979	24	RHS	
114	35+980	35+992	12	RHS	
115	35+992	36+004	12	RHS	
116	36+070	36+080	10	RHS	
117	36+080	36+100	20	RHS	
118	37+890	37+898	7.5	RHS	
119	37+900	37+919	19	RHS	
120	38+143	38+158	15	RHS	
121	38+190	38+202	12	RHS	
122	38+202	38+214	12	RHS	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

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123	38+214	38+228	14	RHS	
124	38+730	38+742	12	RHS	
125	38+742	38+754	12	RHS	
126	38+754	38+766	12	RHS	
127	38+776	38+791	14.8	RHS	
128	39+203	39+215	12	RHS	
129	39+215	39+227	12	RHS	
130	39+227	39+239	12	RHS	2nd lift complete

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

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## Annex II

(As per clause 8.3 (i))

(Schedule-A)

### Dates for providing Right of Way

The dates on which the Authority shall provide Right of Way to the Contractor on different parts of the Site are stated below:

Sl. No	Design Chainage		Length (Km)	Proposed ROW Width (m)	Date of Providing proposed ROW
	From	To			
90% OF Row (full width)	20+000	40+000	20000	24 - 50	At Appointed Date
Balance Row width	20+000	40+000	20000	24 - 50	At Appointed Date

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

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**Annex – III**

*(Schedule-A)*

**Alignment Plans**

The existing alignment of the Project Highway shall be modified in the following sections as per the alignment plan indicated below:

**ENCLOSED**

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

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## **Annex – IV**

*(Schedule-A)*

### **Environment Clearances**

As per notification of MOEF F.O. 2559(E) dated 22/08/2013, the project will not attract Environmental Clearance.

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

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## **SCHEDULE – B**

*(See Clause 2.1)*

### **DEVELOPMENT OF THE PROJECT HIGHWAY**

#### **1 Development of the Project Highway**

Development of the Project Highway shall include design and construction of the Project Highway as described in this Schedule-B and in Schedule-C.

#### **2 Rehabilitation and augmentation**

NA

#### **3 Specifications and Standards**

The Project Highway shall be designed and constructed in conformity with the Specifications and Standards specified in Annex-I of Schedule-D.

**Annex I**  
*(Schedule-B)*

**Description of Two Lanning**

**1. Widening of the Existing Highway**

- (i) The Project Highway shall follow the existing alignment unless otherwise specified by the Authority and shown in the alignment plans specified in Annex-III of Schedule-A. Geometric deficiencies, if any, in the existing horizontal and vertical profiles shall be corrected as per the prescribed standards for hilly terrain to the extent land is available.
- (ii) Width of Carriageway

Two-Lanning with hard shoulders shall be undertaken. The paved carriageway shall be 7(seven) m wide. The work and specifications shall be carried out in accordance with Clause 408 of MoRTH specification.

Provided that in the built-up areas [refer to paragraphs 2.1 (ii) of the Manual and provide necessary details]: the width of the carriageway shall be as specified in the following table:

Sl. No.	Built-up stretch (Township)	Location (Design Chainage)		Length (m)	Typical cross section	Remark
		From (Km)	To (Km)			
1	Namsang	32+320	32+420	100	As per attached TCS Drawings	10m Carriageway

**Except as otherwise provided in this Agreement the width of the paved carriageway and cross-sectional features shall conform to paragraph1(ii) above.**

**2. GEOMETRIC DESIGN AND GENERAL FEATURES**

**(i) General**

**Geometric design and general features of the Project Highway shall be in accordance with Section 2 of the Manual.**

**(ii) Design speed**

The design speed shall be as per IRC SP 73: 2018 however in exceptional cases the minimum design speed can be 30 km per hour for hilly and mountainous terrain and 20 km per hour for hair pin bend locations.

**(iii) Improvement of the existing road geometrics**

In the following sections, where improvement of the existing road geometrics to the prescribed standards is not possible, the existing road geometrics shall be improved to the extent possible within the given right of way and proper road signs and safety measures shall be provided:

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

**(iv) Probable location of Sharp Curves having speed below 40kmph:**

Sl. No.	Design Chainage(m)		Side	Type of Deficiency	Remarks
	From	To			
1	20194.28	20269.06	Left	Radius<40	
2	21182.46	21241.40	Left	Radius<40	
3	21338.07	21397.79	Right	Radius<40	
4	21397.79	21469.36	Left	Radius<40	
5	22030.25	22089.35	Right	Radius<40	
6	23012.81	23086.99	Left	Radius<40	
7	23530.96	23591.45	Right	Radius<40	
8	23787.46	23896.79	Left	Radius<40	
9	24017.90	24089.36	Right	Radius<40	
10	24368.75	24428.12	Left	Radius<40	
11	24972.54	25031.77	Right	Radius<40	
12	25238.27	25275.33	Right	Radius<40	
13	25381.73	25420.53	Right	Radius<40	
14	25691.35	25755.40	Left	Radius<40	
15	25798.48	25881.27	Right	Radius<40	
16	26085.32	26123.30	Right	Radius<40	
17	27274.04	27329.58	Right	Radius<40	
18	27607.86	27667.05	Left	Radius<40	
19	27708.72	27785.38	Left	Radius<40	
20	27785.38	27865.41	Right	Radius<40	
21	28529.32	28575.24	Right	Radius<40	
22	28665.86	28729.24	Right	Radius<40	
23	29421.93	29492.58	Left	Radius<40	
24	29492.58	29555.88	Right	Radius<40	
25	29882.24	29951.80	Right	Radius<40	
26	30032.32	30104.78	Left	Radius<40	
27	30433.65	30486.75	Right	Radius<40	
28	32410.62	32451.79	Right	Radius<40	
29	32656.36	32721.10	Right	Radius<40	
30	32721.10	32795.65	Left	Radius<40	
31	33131.68	33159.74	Left	Radius<40	
32	33244.37	33270.27	Left	Radius<40	
33	33321.07	33381.67	Right	Radius<40	
34	33503.90	33551.20	Left	Radius<40	
35	34613.74	34657.94	Left	Radius<40	
36	37636.98	37703.49	Right	Radius<40	
37	37798.35	37820.41	Left	Radius<40	
38	38640.72	38703.38	Right	Radius<40	

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

**(v) Improvement due to Realignments:**

Sl. No.	Existing Chainage (km)		Length (m)	Design Chainage (km)		Length (m)
	From	To		From	To	
1	20+456	20+485	20	20+000	20+035	35
2	20+660	20+725	65	20+200	20+245	45
3	20+825	20+880	55	20+350	20+395	45
4	21+240	21+360	120	20+715	20+800	85
5	21+500	21+600	100	20+940	21+030	90
6	21+920	22+050	130	21+350	21+450	100
7	22+350	22+390	40	21+740	21+770	30
8	22+590	22+740	150	21+990	22+130	140
9	23+910	23+980	70	23+335	23+400	65
10	24+440	24+470	30	23+840	23+865	25
11	24+640	24+680	40	24+035	24+065	30
12	24+900	25+020	120	24+260	24+355	95
13	25+400	25+700	300	24+725	25+000	275
14	26+140	26+170	30	25+440	25+465	25
15	26+270	26+340	70	25+560	25+620	60
16	26+565	26+800	235	25+850	26+100	250
17	26+940	27+230	290	26+235	26+460	225
18	27+475	27+510	35	26+700	26+730	30
19	27+690	27+750	60	26+905	26+955	50
20	28+410	28+520	110	27+600	27+750	150
21	28+625	28+680	55	27+850	27+900	50
22	29+150	29+210	60	28+360	28+410	50
23	29+290	29+515	225	28+490	28+700	210
24	30+390	30+450	60	29+490	29+540	50
25	30+661	30+930	269	29+750	30+110	360
26	31+040	31+320	280	30+205	30+470	265
27	32+160	32+500	340	31+300	31+620	320
28	32+840	32+980	140	31+960	32+100	140
29	33+120	33+195	75	32+240	32+310	70
30	33+285	33+330	45	32+400	32+440	40
31	33+450	33+615	165	32+545	32+665	120
32	33+690	33+750	60	32+740	32+790	50
33	33+880	33+950	70	32+900	32+960	60
34	34+360	34+500	140	33+360	33+500	140
35	35+535	35+755	220	34+450	34+640	190
36	35+795	35+845	50	34+670	34+715	45
37	35+940	35+995	55	34+810	34+855	45
38	36+360	36+390	30	35+235	35+260	25
39	36+530	36+590	60	35+400	35+450	50
40	36+620	36+645	25	35+480	35+505	25
41	36+725	36+835	110	35+590	35+690	100
42	37+035	37+185	150	35+890	36+030	140
43	37+305	37+445	140	36+155	36+280	125
44	37+485	37+570	85	36+320	36+400	80
45	37+620	37+675	55	36+450	36+490	40
46	37+780	37+870	90	36+595	36+670	75
47	38+250	38+300	50	37+060	37+100	40

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

48	39+430	39+500	70	38+215	38+275	60
49	39+540	39+630	90	38+315	38+400	85
50	39+770	40+055	285	38+560	38+850	290
51	40+200	41+065	865	38+990	40+000	1010
					<b>Total</b>	<b>6200</b>

**(vi) Proposed Right of Way**

[Refer to paragraph 2.3 of the Manual]. Details of the Right of way are given in Annex-II of Schedule A.

The Scheduled date on which the Authority shall provide ROW to the contractor is given in Annexure-II of Schedule A

**(vii) Type of Shoulders**

- (a) Hard shoulders of 1.5 m width shall be provided with granular material except in built up areas given in paragraph 1(ii).
- (b) Design and specifications of hard shoulders and granular material shall conform to the requirements specified in the section 408 of MoRTH specification

**(viii) Lateral and vertical clearances at underpasses**

- i. Lateral and vertical clearances at underpasses and provision of guardrails/crash barriers shall be as per paragraph 2.10 of the IRC:SP:73-2018.

**ii. Lateral Clearance:**

The width of the opening at the underpasses shall be as follows:

Sl.No.	Location (Chainage) (from km to km)	Span/opening(m)	Remarks
Nil			

**(ix) Lateral and vertical clearances at overpasses**

- i. Lateral and vertical clearances at overpasses shall be as per paragraph 2.11 of the IRC: SP: 73-2018.
- ii. *Lateral clearance:* The width of the opening at the overpasses shall be as follows:

Sl No.	Location [Chainage(km)]		Span/Opening (m)	Remarks
	From	To		
Nil				

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

**(x) Service roads**

Service roads shall be constructed at the locations and for the lengths indicated below:

Sl. No.	Location of Service Road (km)		Right Hand Side (RHS) / Left Hand Side (LHS) / Both Sides	Length (km) of Service Road
	From	To		
Nil				

**(xi) Grade Separated Structures**

i. Grade separated structures shall be provided as per paragraph 2.14 of the IRC: SP: 73-2018. The requisite particulars are given below:

Sl. No.	Location of Structure	Length (m)	Number and Length of Spans (m)	Approach Gradient	Remarks, if any
Nil					

ii. In the case of grade separated structures, the type of structure and the level of the Project Highway and the cross roads shall be as follows:

Sl No.	Location	Type of Structure/Length (m)	Cross Road at			Remarks, if any
			Existing Level	Raised Level	Lowered Level	
Nil						

**(xii) Cattle and pedestrian underpass / Overpass**

Cattle and pedestrian underpass/overpass shall be constructed as follows: [Refer to paragraph 2.14.3 of IRC: SP: 73-2018 and specify the requirements of cattle and pedestrian underpass/overpass.

Sl. No.	Location	Type of Crossing
Nil		

**(xiii) Typical cross-sections of the Project Highway**

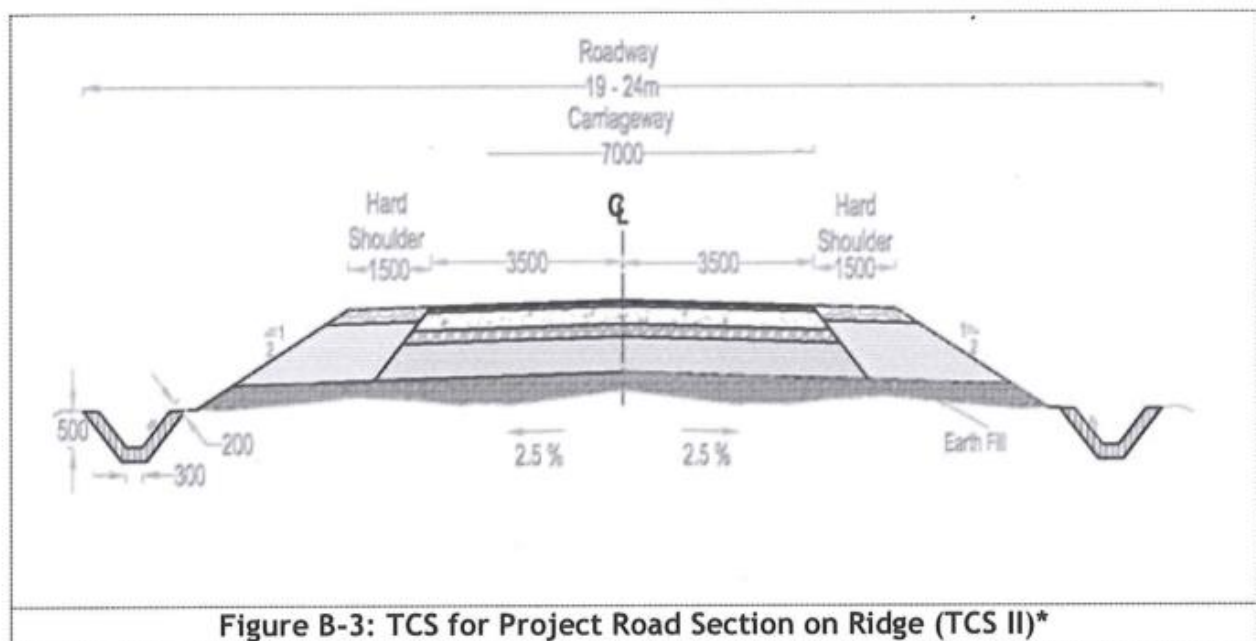
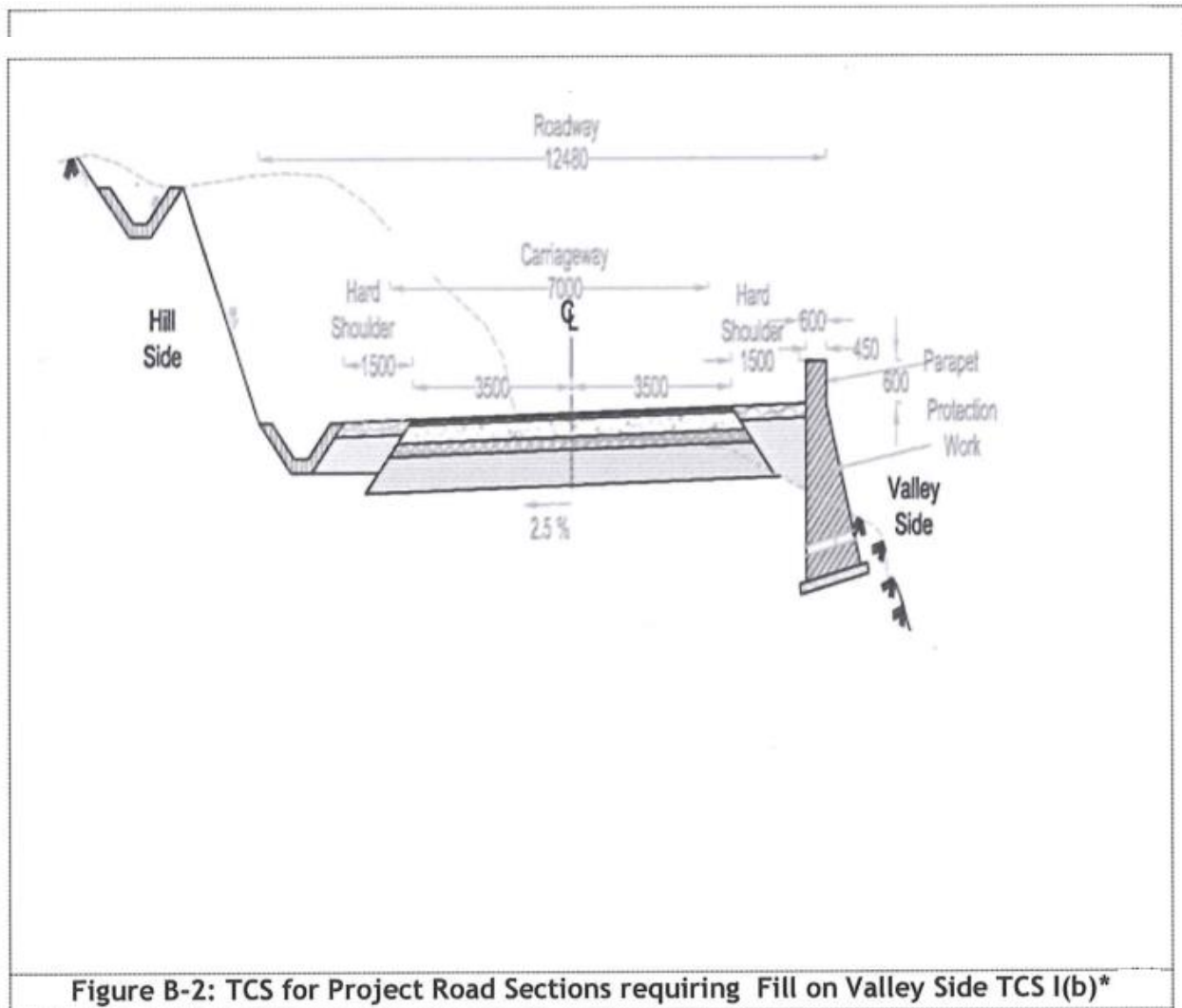
The cross-section schedule shall be as follows:

TCS Number	TCS Description
TCS-I (a)	Typical Cross Section for project road sections in Hill / Valley locations
TCS-I (b)	Typical Cross Section for Project Road Sections requiring Fill on Valley Side
TCS-II	Typical Cross Section for project road section on Ridge
TCS III	Typical Cross Section for Project Road Sections through Box Cut Locations
TCS IV	Typical Cross Section for Project Road Section through Town with Hill Valley Combination.
TCS V	Typical Cross Section for Project Road Section through Town on Ridge

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

The cross-section schedule shall be as follows:

Sl. No.	Chainage (Km)		Length (m)	Type	Remarks
	From	To			
1	20+000	20+215	215	I	
2	20+215	20+220	5	III	
3	20+220	24+780	4560	I	
4	24+780	24+785	5	III	
5	24+785	26+265	1480	I	
6	26+265	26+275	10	III	
7	26+275	27+645	1370	I	
8	27+645	27+725	80	III	
9	27+725	28+410	685	I	
10	28+410	28+470	60	III	
11	28+470	28+535	65	I	
12	28+535	28+545	10	III	
13	28+545	28+565	20	I	
14	28+565	28+630	65	III	
15	28+630	29+430	BOO	I	
16	29+430	29+550	120	II	
17	29+550	29+980	430	I	
18	29+980	30+110	130	III	
19	30+110	30+245	135	I	
20	30+245	30+260	15	III	
21	30+260	30+500	240	I	
22	30+500	31+990	1490	II	
23	31+990	32+630	640	I	
24	32+630	32+650	20	III	
25	32+650	33+505	855	I	
26	33+505	33+525	20	III	
27	33+525	36+375	2850	I	
28	36+375	36+445	70	III	
29	36+445	38+820	2375	I	
30	38+820	39+030	210	I	
31	39+030	39+060	30	III	
32	39+060	40+000	940	I	



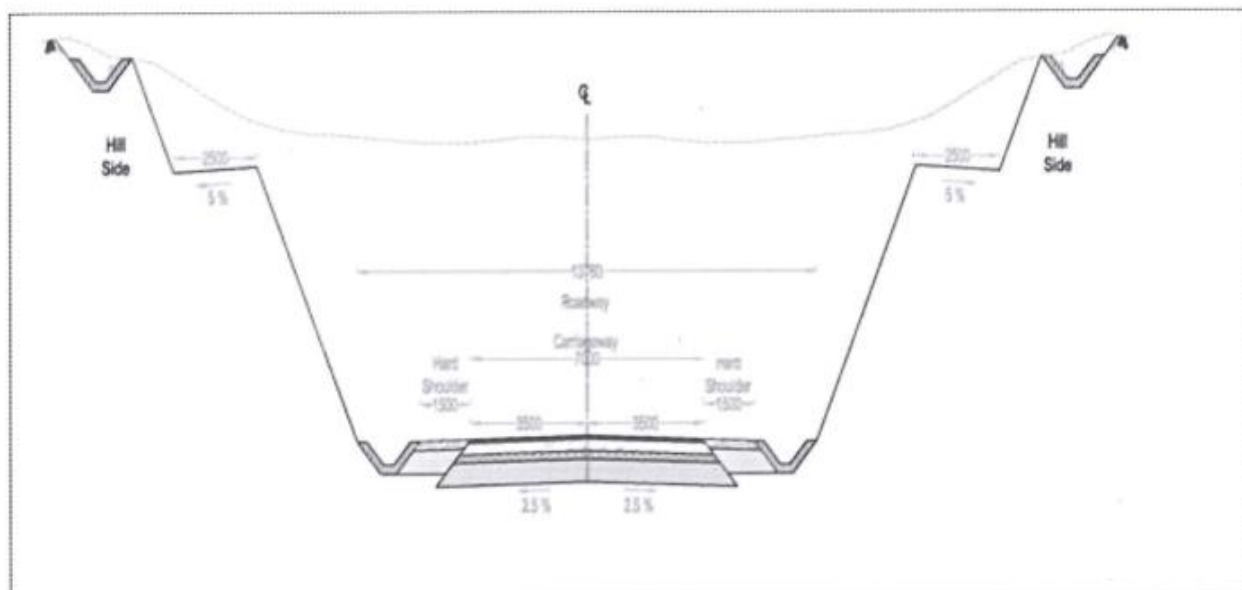


Figure B-4: TCS for Project Road Sections through Box Cut Locations (TCS III)\*

### 3. INTERSECTIONS AND GRADE SEPARATORS

#### Introduction

All intersections shall be as per Section 3 of the IRC: SP: 73-2018. Existing intersections which are deficient shall be improved to the prescribed standards.

Properly designed intersections shall be provided at the locations and of the types and features given in the tables below:

#### (i) At-grade Intersections

##### Major Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features	Remarks
Nil				

Details of junction improvements shall be as per IRC SP: 73-2018.

##### Minor Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features
Nil			

Details of junction improvements shall be as per IRC SP: 73-2018.

#### (ii) Grade Separated Intersections with/without Ramps

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

SI No.	Location (km)	Salient Features	Minimum Length of Viaduct to be Provided (m)	Road to be Carried Over/Under the Structures
Nil				

#### 4. ROAD EMBANKMENT AND CUT SECTION

- a. Widening and improvement of the existing road embankment/cuttings and construction of new road embankment/ cuttings shall conform to the Specifications and Standards given in section 4 of the Manual and the specified cross sectional details. Deficiencies in the plan and profile of the existing road shall be corrected.
- b. Rising of the existing road.

The existing road shall be raised in the following sections:

SI No.	Section (km)		Length (km)	Extent of Raising*	Remarks
	From	To			
Nil					

\* Difference between levels at proposed c/l and existing road/ground below proposed c/l

#### 5. PAVEMENT DESIGN

- (i) Pavement design shall be carried out in accordance with section 5 of the Manual.

- (ii) **Type of pavement**

Flexible pavement shall be adopted for Project Highway. Notwithstanding anything contrary contained in this Agreement or the Manual, the pavement shall be designed as given below

- (iii) **Design requirements**

Notwithstanding anything to the contrary contained in this agreement or the manual, the contractor shall design the pavement of main carriageway for design traffic of 20 MSA with a minimum design period of 20 years. CBR value as obtained at site shall be taken for design if less than 10%. Maximum value of CBR to be taken for design shall not exceed 10%.

Bituminous Grade VG 30 or VG 40 shall be used for BC

#### 6. ROAD SIDE DRAINAGE

Following measures shall be adopted:

- i) Minimum length of Road Side Drains= 16386 m

Open side trapezoidal cross section drain shall be provided on hill sides or both sides at Box cutting location of the project highway in order to intercept surface water from the carriageway, shoulders, and hill slopes. RCC Lined drains have slopes also been proposed in urban/semi

urban/intersection stretches. The concrete drains shall be covered in reaches along commercial establishments and intersections. The drains outfall into the natural water courses i.e., either in culverts or bridges. Locations of the drain to be constructed shall be finalized in consultation with the Authority’s Engineer at the time of Execution. These are guidelines for minimum provisions. However, contractor must design as per requirement of road in accordance with manual.

**Note:**

1. The length of side drains given above are minimum and it may vary as per site condition. In case of increase of length, no positive change of scope will be payable.
2. Drainage system including surface and subsurface drains for the Project Highway shall be provided as per Section 6 of the Manual (IRC: SP: 73-2018).
3. Road side drain shall preferably be V-shaped having wetted area of 0.4sqm
4. The above locations shall be reviewed in consultation with the Authority Engineer at the time of construction as per the site condition

**7. Balance Work of 2 laning: Layer Wise: -**

**7.1 Minimum balance Earthwork up to Top of Sub-grade**

Sl. No.	Chainage		Length (m)	Improvement Proposal
	From	To		
1	20+450	20+550	100	Widening & strengthening
2	23+280	23+320	40	Widening & strengthening
3	23+320	23+335	15	Widening & strengthening
4	25+000	25+100	100	Widening & strengthening
5	31+730	31+810	80	Widening & strengthening
6	34+715	34+752	37	Widening & strengthening
7	38+850	38+940	90	Widening & strengthening
8	38+940	38+990	50	Widening & strengthening
9	38+990	39+040	50	Realignment
10	39+040	39+080	40	Realignment
11	39+570	40+000	430	Realignment
<b>Total Length</b>			<b>1032</b>	<b>Meter</b>

**7.2 Minimum Balance Granular Sub Base Works: -**

Sl.No.	Chainage		Length (m)	Improvement Proposal
	From	To		
1	20+450	20+550	100	Widening & strengthening
2	23+280	23+320	40	Widening & strengthening
3	23+320	23+335	15	Widening & strengthening
4	25+000	25+100	100	Widening & strengthening
5	25+100	25+200	100	Widening & strengthening

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

6	29+040	29+090	50	Widening & strengthening
7	31+660	31+730	70	Widening & strengthening
8	31+730	31+810	80	Widening & strengthening
9	31+810	31+850	40	Widening & strengthening
10	31+850	31+950	100	Widening & strengthening
11	31+950	31+960	10	Widening & strengthening
12	31+960	32+000	40	Realignment
13	34+670	34+715	45	Realignment
14	34+715	34+752	37	Widening & strengthening
15	34+752	34+780	28	Widening & strengthening
16	35+235	35+260	25	Realignment
17	37+850	38+000	150	Widening & strengthening
18	38+850	38+940	90	Widening & strengthening
19	38+940	38+990	50	Widening & strengthening
20	38+990	39+040	50	Realignment
21	39+040	39+080	40	Realignment
22	39+500	39+570	70	Realignment
23	39+570	40+000	430	Realignment
<b>Total Length</b>			<b>1760</b>	<b>Meter</b>

### 7.3 Minimum Balance WMM Works: -

Sl.No.	Chainage		Length (m)	Improvement Proposal
	From	To		
1	20+450	20+550	100	Widening & strengthening
2	23+200	23+320	120	Widening & strengthening
3	23+320	23+335	15	Widening & strengthening
4	24+980	25+000	20	Realignment
5	25+000	25+100	100	Widening & strengthening
6	25+100	25+200	100	Widening & strengthening
7	29+030	29+090	60	Widening & strengthening
8	31+660	31+730	70	Widening & strengthening
9	31+730	31+810	80	Widening & strengthening
10	31+810	31+850	40	Widening & strengthening
11	31+850	31+950	100	Widening & strengthening
12	31+950	31+960	10	Widening & strengthening
13	31+960	32+000	40	Realignment
14	34+550	34+640	90	Realignment
15	34+640	34+650	10	Widening & strengthening
16	34+650	34+670	20	Widening & strengthening
17	34+670	34+715	45	Realignment
18	34+715	34+752	37	Widening & strengthening
19	34+752	34+780	28	Widening & strengthening

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

20	34+780	34+810	30	Widening & strengthening
21	35+235	35+260	25	Realignment
22	37+850	38+000	150	Widening & strengthening
23	38+850	38+940	90	Widening & strengthening
24	38+940	38+990	50	Widening & strengthening
25	38+990	39+040	50	Realignment
26	39+040	39+120	80	Realignment
27	39+500	39+570	70	Realignment
28	39+570	40+000	430	Realignment
<b>Total length</b>			<b>2060</b>	<b>Meter</b>

#### 7.4 Minimum Balance DBM Works: -

Sl. No.	Chainage		Length (m)	Improvement Proposal
	From	To		
1	20+000	20+035	35	Realignment
2	20+035	20+200	165	Widening & strengthening
3	20+200	20+245	45	Realignment
4	20+245	20+350	105	Widening & strengthening
5	20+350	20+395	45	Realignment
6	20+395	20+450	55	Widening & strengthening
7	20+450	20+550	100	Widening & strengthening
8	20+650	20+660	10	Widening & strengthening
9	20+790	20+800	10	Realignment
10	21+030	21+050	20	Widening & strengthening
11	21+430	21+450	20	Realignment
12	21+630	21+650	20	Widening & strengthening
13	21+770	21+850	80	Widening & strengthening
14	22+120	22+130	10	Realignment
15	22+880	22+930	25	Widening & strengthening
16	23+000	23+150	150	Widening & strengthening
17	23+150	23+280	130	Widening & strengthening
18	23+280	23+320	40	Widening & strengthening
19	23+320	23+335	15	Widening & strengthening
20	23+335	23+350	15	Realignment
21	23+350	23+400	50	Realignment
22	23+400	23+450	50	Widening & strengthening
23	24+110	24+200	90	Widening & strengthening
24	24+440	24+460	20	Widening & strengthening
25	24+970	25+000	30	Realignment
26	25+000	25+100	100	Widening & strengthening
27	25+100	25+200	100	Widening & strengthening
28	25+200	25+250	50	Widening & strengthening
29	25+370	25+400	15	Widening & strengthening
30	25+530	25+540	10	Widening & strengthening
31	25+980	26+010	30	Realignment
32	26+010	26+070	30	Realignment

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

33	26+210	26+235	25	Widening & strengthening
34	26+235	26+320	85	Realignment
35	26+460	26+650	190	Widening & strengthening
36	26+900	26+905	5	Widening & strengthening
37	26+950	26+955	5	Realignment
38	26+955	26+960	5	Widening & strengthening
39	26+990	27+150	160	Widening & strengthening
40	27+150	27+190	40	Widening & strengthening
41	28+040	28+110	35	Widening & strengthening
42	28+270	28+360	90	Widening & strengthening
43	28+360	28+410	50	Realignment
44	28+410	28+490	80	Widening & strengthening
45	28+490	28+500	10	Realignment
46	28+500	28+700	200	Realignment
47	28+700	28+750	50	Widening & strengthening
48	28+750	28+790	40	Widening & strengthening
49	28+940	29+030	45	Widening & strengthening
50	29+030	29+090	60	Widening & strengthening
51	29+150	29+170	20	Widening & strengthening
52	29+220	29+230	10	Widening & strengthening
53	29+320	29+390	35	Widening & strengthening
54	30+160	30+205	45	Widening & strengthening
55	30+205	30+300	95	Realignment
56	31+510	31+620	110	Realignment
57	31+620	31+660	40	Widening & strengthening
58	31+660	31+730	70	Widening & strengthening
59	31+730	31+810	80	Widening & strengthening
60	31+810	31+850	40	Widening & strengthening
61	31+850	31+950	100	Widening & strengthening
62	31+950	31+960	10	Widening & strengthening
63	31+960	32+000	40	Realignment
64	33+870	33+910	40	Widening & strengthening
65	34+120	34+150	30	Widening & strengthening
66	34+280	34+320	40	Widening & strengthening
67	34+535	34+640	105	Realignment
68	34+640	34+650	10	Widening & strengthening
69	34+650	34+670	20	Widening & strengthening
70	34+670	34+715	45	Realignment
71	34+715	34+752	37	Widening & strengthening
72	34+752	34+780	28	Widening & strengthening
73	34+780	34+810	30	Widening & strengthening
74	34+810	34+850	40	Realignment
75	36+400	36+430	30	Widening & strengthening
76	36+710	36+730	20	Widening & strengthening
77	37+110	37+130	20	Widening & strengthening
78	37+230	37+250	20	Widening & strengthening
79	37+515	37+550	35	Widening & strengthening
80	37+620	37+640	20	Widening & strengthening

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

81	37+850	38+000	150	Widening & strengthening
82	38+080	38+120	40	Widening & strengthening
83	38+495	38+520	12.5	Widening & strengthening
84	38+520	38+540	20	Widening & strengthening
85	38+640	38+660	20	Realignment
86	38+730	38+850	120	Realignment
87	38+850	38+940	90	Widening & strengthening
88	38+940	38+990	50	Widening & strengthening
89	38+990	39+040	50	Realignment
90	39+040	39+120	80	Realignment
91	39+360	39+380	20	Realignment
92	39+500	39+570	70	Realignment
93	39+570	40+000	430	Realignment
<b>Total Length</b>			<b>5262.5</b>	<b>Meter</b>

7.5 Minimum Balance BC Works: -

Sl. No.	Chainage		Length (m)	Improvement Proposal
	From	To		
1.	20+000	40+000	20000	Widening & Strengthening / Realignment

7.6 Minimum Balance Hard Shoulder Work = 15275 meter (Widening/Re-alignment)

## 8. DESIGN OF STRUCTURES

The details of culverts shall be provided by the EPC Contractor and locations are given in Clause 7(ii) of Schedule-B.

All the cross-drainage structures and other structures shall be designed in accordance with the design standards set out in **Schedule-D**.

### (i) Bridges

#### i. General

- a) All bridges, culverts and structures shall be designed and constructed in accordance with section 7 of IRC: SP: 73-2018 and referred other codes therein and shall conform to the cross- sectional features and other details specified therein
- b) Width of the carriageway of new / reconstruction bridges and Structures shall be as per Clause 7. 3 of the Manual.

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

Sl. No	Bridge Location (km)	Salient Details of Existing Bridges					Adequacy or Otherwise of the Existing waterway, Vertical Clearance etc.	Proposal
		Span Arrangement (m)	Carriageway Width (m)	Total Width (m)	Type of Superstructure	Type Of Foundation		
1	32.467	1x31.7	3.35	5.4	Steel Truss	Open Foundation	Inadequate	Reconstruction
2	35.570	1 X 6.1	6.1	6.9	RCC Slab	Not Visible	Inadequate	Reconstruction
3	39.912	1 X 16.5	3.3	3.9	Steel Truss	Not Visible	Inadequate	Reconstruction

c) Following structures shall be provided with footpaths:

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
Nil		

d) All bridges shall be high-level bridges.

e) The following structures shall be designed to carry utility services specified in table below:

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
Nil		

f) Cross-section of the new culverts and bridges at deck level for the Project Highway shall conform to the typical cross-sections of IRC: SP: 73-2018.

## (ii) Culverts

(a) Overall width of all culverts shall be equal to the roadway width of the approaches.

Minimum no. of box culverts with Span arrangement are given herein under:

Sr. No.	Span (M)	No. of Culverts (New / Reconstruction)	No. of Culverts (Widening & Balance work)	No. of Culvert (remaining work in Constructed Culvert)	Total
1.	1.5	03	01	40	44
2.	2.0	00	00	27	27
3.	3.0	00	00	13	13
4.	4.0	00	00	00	00
5.	5.0	00	00	04	04

**(b) Reconstruction of existing culverts**

The existing culverts at the following locations shall be re-constructed as new culverts:

Sr. No.	Design Chainage (Km)	Proposed Span (M)	Remark
Nil			

\* All culverts (excluding the box culverts in cushion) shall be provided with approach slabs on both sides. Moreover upstream and downstream protection works, including chute drains connecting stream with the culvert, catch pits; baffle piers/blocks etc. shall be provided which must be ascertained as per the site conditions and details given in drawings of culvert.

**(c) New culverts to be constructed**

Additional new culverts shall be constructed as per particulars given in the table below:

Sr. No.	Design Chainage (Km)	Proposed Span (M)	Proposal	Remark
1.	24+920	1.5 x 1.50	RCC BOX	
2.	25+030	1.5 x 1.50	RCC BOX	
3.	39+900	1.5 x 1.50	RCC BOX	

**(d) Widening and Balance work construction**

Widening and Construction of balance work of Return walls, Parapet Walls, Catch Pit / Repairs/replacements of railing/parapets, flooring and protection works in the existing constructed half culvert shall be undertaken as follows:

Sr. No.	Design Chainage (Km)	Proposal	Proposed Span
1.	23+280	Widening in RHS & construction of Balance work Parapet wall, return wall and catch pit / apron work BHS	1.5x1.5

**(e) Construction of balance work of Return walls, Parapet Walls, Catch Pit / apron, construction of flooring and protection works in the existing constructed culverts shall be undertaken as follows:**

Sl. No.	Chainages	Span (m)	Balance Work
	(As per Bill)		
1	20+040	1.5	Return wall balance LHS, catch pit/apron balance BHS
2	20+506	1.5	Parapet, return wall, catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

3	20+657	1.5	Parapet, return wall, catch pit/apron balance BHS
4	20+791	1.5	Parapet, return wall, catch pit/apron balance BHS
5	21+033	1.5	Parapet, return wall, catch pit/apron balance BHS
6	21+456	1.5	Parapet, return wall, catch pit/apron balance BHS
7	21+693	3X2	Parapet, return wall, catch pit/apron balance BHS
8	21+870	1.5	Parapet, return wall, catch pit/apron balance BHS
9	21+942	1.5	, Parapet, return wall, catch pit/apron balance BHS
10	22+150	2	Parapet, return wall, catch pit/apron balance BHS
11	22+640	3X2	Parapet, return wall, catch pit/apron balance BHS
12	23+020	3	Parapet, return wall, catch pit/apron balance BHS
13	23+680	1.5	Parapet, return wall, catch pit/apron balance BHS
14	24+160	5	Return wall, parapet wall balance in LHS, catch pit/apron balance BHS
15	24+445	3X2	Parapet, return wall, catch pit/apron balance BHS
16	25+170	1.5	Return wall balance LHS, catch pit/apron balance BHS
17	25+410	3X2	Parapet, return wall, catch pit/apron balance BHS
18	25+555	1.5	Parapet, return wall, catch pit/apron balance BHS
19	25+810	1.5	Parapet, return wall, catch pit/apron balance BHS
20	25+990	1.5	return wall Incomplete LHS, catch pit/apron balance BHS
21	26+505	1.5	Parapet, return wall, catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

22	26+627	1.5	Parapet balance Return LHS A2 Incomplete, Return Wall Balance RHS, catch pit/apron balance BHS
23	26+900	1.5	Parapet balance RHS Return wall, catch pit/apron balance BHS
24	26+940	1.5	Parapet balance RHS Return wall, catch pit/apron balance BHS
25	27+030	5	Parapet, return wall, catch pit/apron balance BHS
26	27+113	1.5	Parapet, return wall, catch pit/apron balance BHS, (required to extend 3meter more at RHS)
27	27+400	1.5	Parapet, return wall, catch pit/apron balance BHS
28	27+673 (26+879)	1.5	Parapet balance RHS Return wall, catch pit/apron balance BHS
29	28+080	3X2	Return wall & Parapet wall Incomplete LHS, catch pit/apron balance BHS
30	28+320	1.5	return wall incomplete LHS, Parapet, catch pit/apron balance BHS
31	28+421	3X2	parapet, return wall incomplete LHS, catch pit/apron balance BHS
32	28+772	5	return wall & parapet incomplete LHS, catch pit/apron balance BHS
33	29+063	3	Parapet, return wall, catch pit/apron balance BHS
34	29+180	1.5	Return wall balance RHS, catch pit/apron balance BHS
35	29+253	1.5	Parapet balance RHS Return wall, catch pit/apron balance BHS
36	29+406	3X2	Parapet, return wall, catch pit/apron balance BHS
37	29+650	3X2	Parapet, return wall, catch pit/apron balance BHS
38	29+868	1.5	Parapet, return wall, catch pit/apron balance BHS
39	30+500	2	Parapet, return wall, catch pit/apron balance BHS
40	30+570	2	Parapet, return wall, catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

41	30+930	2	Parapet, return wall, catch pit/apron balance BHS
42	31+970	2	Parapet, return wall, catch pit/apron balance BHS
43	32+160	3	return wall Incomplete A2 side, catch pit/apron balance BHS
44	32+350	3	catch pit/apron balance BHS
45	32+655	1.5	catch pit/apron balance BHS
46	32+690	1.5	return wall complete BHS, catch pit/apron balance BHS
47	32+900	3	Slab complete BHS, Parapet, return wall, catch pit/apron balance BHS
48	33+310	2	Parapet balance LHS, parapet /Return wall balance LHS catch pit/apron balance BHS
49	33+587	5	catch pit/apron balance BHS
50	33+975	2	Parapet balance LHS, parapet /Return wall balance LHS, approach slab balance LHS, catch pit/apron balance BHS
51	34+280	1.5	catch pit/apron balance BHS
52	34+350	2	catch pit/apron balance BHS
53	34+380	2	, Parapet, return wall, catch pit/apron balance BHS
54	34+920 (34+790)	2	return wall balance RHS, catch pit/apron balance BHS
55	35+200	2	catch pit/apron balance BHS
56	35+320	2	Parapet& Return wall catch pit/apron balance BHS
57	35+335	1.5	return wall balance LHS, catch pit/apron balance BHS
58	35+600	2	parapet & return wall balance RHS, catch pit/apron balance BHS
59	35+790	1.5	parapet balance RHS, return wall, catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

60	35+955	1.5	parapet balance RHS, return wall, catch pit/apron balance BHS
61	36+065	2	catch pit/apron balance BHS
62	36+135	2	parapet & Return wall balance LHS, catch pit/apron balance BHS
63	36+470	5	catch pit/apron balance BHS
64	36+529	2	catch pit/apron balance BHS
65	36+556	2	Parapet, return wall, catch pit/apron balance BHS
66	36+967	2	Parapet balance LHS, parapet /Return wall balance LHS, approach slab balance LHS, catch pit/apron balance BHS
67	37+030	2	Parapet, return wall, catch pit/apron balance BHS
68	37+190	2	Parapet, return wall, catch pit/apron balance BHS
69	37+265	2	Parapet balance LHS, parapet /Return wall balance LHS, catch pit/apron balance BHS
70	37+418	2	Parapet, return wall, catch pit/apron balance BHS
71	37+532	2	Parapet, return wall, catch pit/apron balance BHS
72	37+600	1.5	Parapet balance LHS Return wall, catch pit/apron balance BHS
73	37+650	5	Parapet wall balance LHS, return wall, catch pit/apron balance BHS
74	37+735	2	Parapet, return wall, catch pit/apron balance BHS
75	37+820	1.5	Parapet, return wall, catch pit/apron balance BHS
76	37+950	3	Parapet, return wall, catch pit/apron balance BHS
77	38+015	2	Parapet, return wall, catch pit/apron balance BHS
78	38+550	2	Parapet &Return wall balance catch pit/apron balance BHS

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

79	38+770	1.5	Parapet, return wall balance LHS, catch pit/apron balance BHS
80	38+983	2	Parapet, return wall, catch pit/apron balance BHS
81	39+153	1.5	Parapet, return wall, catch pit/apron balance BHS
82	39+420	1.5	parapet, return wall balance LHS, catch pit/apron balance BHS
83	39+640	1.5	Parapet, return wall, catch pit/apron balance BHS
84	39+965	1.5	Parapet, return wall, catch pit/apron balance BHS

**(f) Floor protection works shall be as specified in the relevant IRC Codes and Specifications.**

**(iii) Bridges**

i. The existing bridges to be reconstructed/widened

Sl. No.	Existing Chainage	Design Chainage	Proposed Span (m)	Proposed width (m)	Remark
1	32.467	31+770	2 x 23.0	12.00	
2	35.570	34+722	1 x 14.0	13.50	
2	39.912	38+987	1 x 23.0	12.00	

ii. The following structures shall be provided with footpaths:

Sl. No.	Location (km)	Remarks
NIL		

**iii. Additional New Minor Bridges**

New minor bridges at the following locations on the project highways shall be constructed in Package as per manual

Sl. No.	Location (km)	Total Length (m)	Remarks. If any
Nil			

**iv. Additional New Major bridges**

Sl. No.	Location Designed (km)	Total Length (m)	Remarks
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Sl. No.	Location Designed (km)	Total Length (m)	Remarks
NIL			

The railings of existing bridges shall be replaced by crash barriers at the following locations:

Sl. No.	Location (km)	Remarks
Nil		

Repairs/replacements of railings/parapets of the existing bridges shall be undertaken as follows:

Sl. No.	Location (km)	Remarks
Nil		

v. Drainage system for bridge decks

An effective drainage system for bridge decks shall be provided as specified in paragraph 7.20 of the Manual

vi. Structures in marine environment

NIL

**(iv) Rail-road Bridges**

(a) Design, construction and detailing of ROB/RUB shall be as specified in section 7 of the Manual

**(b) Road over-bridges**

Road over-bridges (road over rail) shall be provided at the following level crossings, as per GAD drawings attached:

Sl No.	Location of Level Crossing (km)	Length of Bridge (m)
Nil		

**(c) Road under-bridges**

Road under-bridges (road under railway line) shall be provided at the following level crossings, as per GAD drawings attached:

Sl. No.	Location (km)	Total Length (m)	Remarks. If any
Nil			

**(v) Grade Separated Structures**

The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 2.9 and 3 of this Annex-I.

### Underpasses/Overpasses

There is no Underpass/Overpass proposed on the Project Highway.

### (vi) Repairs and strengthening of bridges and structures

The existing bridges and structures to be repaired /strengthened, and the nature and extent of repairs/strengthening required are given below:

#### A. Bridges

SI No.	Location of Bridge (km)	Nature and Extent of Repairs/Strengthening to be Carried out
Nil		

#### B. ROB / RUB

SI No.	Location of Bridge (km)	Nature and Extent of Repairs/Strengthening to be Carried out
Nil		

#### C. Overpasses / Underpasses and Other Structures

SI No.	Location of Bridge (km)	Nature and Extent of Repairs/Strengthening to be Carried out
Nil		

### (vii) List of Major Bridges and Structures

The following is the list of Major Bridges on Package

SI No.	Location Design (km)	Total Length (m)	Remarks
NIL			

## 8. TRAFFIC CONTROL DEVICES AND ROAD SAFETY WORKS

8.1 Traffic control devices and road safety works shall be provided in accordance with Section 9 of IRC: SP:73-2018.

**Traffic Signs:** Traffic signs include roadside signs, overhead signs and curb mounted signs along the entire Project Highway shall be provided conforming to IRC 67 and section 800 of MoRTH specification.

**Pavement Marking:** Pavement markings shall cover road marking for the entire Project Highway and shall be provided conforming to IRC 35-2015.

**Safety Barrier: W-beam crash barrier along the project highway at all locations shall be provided as specified in section 9 of IRC: SP: 73-2018.**

## **8.2 Specifications of the reflective sheeting.**

**Retro reflective sheeting should be of high intensity grade with encapsulated lens or with micro prismatic retro reflective element in accordance with ASTM Standard D 4956-04 shall be provided conforming to section 800 of MoRTH specification**

**The minimum quantity of Traffic signages and pavement marking are tabulated here for Package**

<b>Sl. No</b>	<b>Traffic Signages, Road Marking and other appurtenances</b>	<b>unit</b>	<b>Quantity</b>
1	Road Marking on Centre line & Edge	sqm	6,850
2	Direction & Place Identification up to 0.9 sqm	sqm	8
3	Direction & Place Identification more than 0.9 sqm	sqm	NIL
4	60 cm Equilateral Triangle	Number	156
5	60 cm Circular	Number	36
6	60 cm High Octagon	Number	7
7	60 cm X 45 cm Rectangular	Number	8
8	60 cm X 50 cm Chevron Sign	Number	643
9	Hectometer Stone	Number	80
10	Km stone	Number	16
11	5th km stone	Number	4
12	Boundary Stone (as per clause 13 herein under)	Number	200
13	Road Delineators	Number	1,235
14	Road Marker/ Road Stud	Number	10,000
15	Hazard Marker	Number	176

## **9. Roadside Furniture**

**(i) Roadside furniture shall be provided in accordance with the provisions of Section 11 of the Manual IRC: SP: 73-2018.**

**(ii) Overhead traffic signs: location and size**

The overhead signs shall be the reflectorized type with high intensity retro-reflective sheeting conforming to ASTM D 4956-01, type VIII and /or type IX of micro prismatic type. The retro reflected sheets of Engineering Grade and high intensity grade (ordinary) shall not be used. The height, lateral clearance, location the overhead signs shall be the reflectorized type with high intensity retro-reflective sheeting conforming to ASTM D 4956-01, type VIII and / or type IX of micro prismatic type. The retro reflected sheets of Engineering Grade and high intensity grade (ordinary) shall not be used. The height, lateral clearance, location and installation shall be as per relevant clauses of MoRTH specifications. Overhead sign shall be installed ahead of major intersections and urban areas as per detailed design requirements.

## 10. COMPULSORY AFFORESTATION

Minimum 2000 nos. trees are required to be planted.

## 11. HAZARDOUS LOCATIONS

11.1 Metal Beam crash barrier of minimum length of 2287 m (single runner, heavy duty and W-shape) shall be provided at the locations of bridge approaches and high embankments (3.0m and more), at sharp curves. Heavy duty metal beam crash barriers shall be provided on this project by the Construction Contractor at the locations finalized in consultation with NHIDCL. Typical details of metal crash barrier are given in as per manual. Location of sharp curves are tabulated below.

Sl No.	Design Chainage(m)		Length(m)	Remarks
	From	To		
1	20194.28	20269.06	75	Radius<40
2	21182.46	21241.40	59	Radius<40
3	21338.07	21397.79	60	Radius<40
4	21397.79	21469.36	72	Radius<40
5	22030.25	22089.35	60	Radius<40
6	23012.81	23086.99	75	Radius<40
7	23530.96	23591.45	61	Radius<40
8	23787.46	23896.79	110	Radius<40
9	24017.90	24089.36	72	Radius<40
10	24368.75	24428.12	60	Radius<40
11	24972.54	25031.77	60	Radius<40
12	25238.27	25275.33	38	Radius<40
13	25381.73	25420.53	39	Radius<40
14	25691.35	25755.40	65	Radius<40
15	25798.48	25881.27	83	Radius<40
16	26085.32	26123.30	38	Radius<40
17	27274.04	27329.58	56	Radius<40
18	27607.86	27667.05	60	Radius<40
19	27708.72	27785.38	77	Radius<40
20	27785.38	27865.41	81	Radius<40
21	28529.32	28575.24	46	Radius<40
22	28665.86	28729.24	64	Radius<40
23	29421.93	29492.58	71	Radius<40
24	29492.58	29555.88	64	Radius<40
25	29882.24	29951.80	70	Radius<40
26	30032.32	30104.78	73	Radius<40
27	30433.65	30486.75	54	Radius<40
28	32410.62	32451.79	42	Radius<40
29	32656.36	32721.10	65	Radius<40
30	32721.10	32795.65	75	Radius<40
31	33131.68	33159.74	29	Radius<40
32	33244.37	33270.27	26	Radius<40
33	33321.07	33381.67	61	Radius<40
34	33503.90	33551.20	48	Radius<40
35	34613.74	34657.94	45	Radius<40
36	37636.98	3no3.49	67	Radius<40

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

Sl No.	Design Chainage(m)		Length(m)	Remarks
	From	To		
37	37798.35	37820.41	23	Radius<40
38	38640.72	38703.38	63	Radius<40

## 12. SPECIAL REQUIREMENT FOR HILL ROADS

In accordance with section 13 of the manual, IRC: SP: 48-1998 and Recommended practices for Treatment of Embankment and Roadside slopes for erosion control (First Revision), IRC: 56-2011 and relevant IRC codes

(i) The **minimum quantity** of protection work may be taken as below:

Type of Protection Work		
Protection Work	<u>Unit</u>	Minimum Quantity
Parapet Wall having size 0.45mx0.7m with 0.7 m spacing between two parapets	Rm	5,780
Breast wall of PCC/RCC/Gabion/Cement masonry having minimum height of 3.0 m	Rm	1,480
Retaining Structure on valley side of PCC/RCC/Gabion/Cement masonry of varying height between 1 to 6 meter depending upon the slope with parapet walls	Rm	4001
RE wall in PCC	Rm	359
Subsurface drain with perforated pipe for collection of seepage water to avoid sinking of payment	Rm	865
Seeding and Mulching with Jute Net	Sqm	58123
Hydro seeding	Sqm	17,634
Catch Water Drain (Unlined)	Rm	18,910

**Note- (i)** The Contractor shall be responsible for accurate assessment of the actual requirement as per site situation & prepare designs for slope protection & stabilization as per the specifications & standards stipulated in schedule 'D' and submit the same to the AE for review through the proof consultant and implement it accordingly thereafter.

(ii) Any increase in quantity over and above the minimum qty. as mentioned in above table or through change in specifications will not be considered as change of scope. **Therefore contractor shall make thorough investigation at site and assess the requirement of slope protection and slide prone zone and other safety features at his own before submission of bid**

(iii) The length of Retaining Wall shown above is minimum, to be constructed at site for proper geometrics and will not be converted to Breast Wall. Any reduction in the total length of Retaining Wall constructed at site shall constitute of negative change of scope.

- (iv) *Entire slope/formation which has been cut apart from the above tabulated lengths shall have to be stabilized by the Contractor using techniques approved by AE.*

### **13. CHANGE OF SCOPE**

The size of Structures, bridges, culverts and slope protection works whatsoever in terms of retaining wall, breast wall, gabion wall, RE wall, chute drain, catch pit, baffle piers/blocks etc. under special requirement of hill slope specified hereinabove shall be treated as an approximate assessment. The actual lengths, heights and widths as required on the basis of detailed investigations shall be determined by the Contractor in accordance with the Specifications and Standards. Any variations in the lengths, heights and widths and specifications in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length, height and width arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

**SCHEDULE – C**  
(See Clause 2.1)

**PROJECT FACILITIES**

**Project Facilities**

This schedule indicates the minimum spatial and functional requirements of the facilities to be provided on the **Project Highway (Total length of 20.00 km)**.

The Contractor shall construct the Project Facilities in accordance with the provisions of this Agreement. Such Project facilities for Package-II shall include:

- (a) Roadside furniture
- b) Pedestrian facilities
- c) Tree Plantation
- d) Bus shelters and Bus bays
- e) Passing Places
- f) Truck lay byes and
- g) Others to be specified

**Description of Project Facilities**

**Toll Plaza**

NIL

**Bus Shelters**

To ensure orderly movement of the through traffic, bus shelters have been proposed outside the residential area, away from bridges, and high embankments and not too close to the road intersections.

Bus shelters shall be provided on the Project Highway at 2 locations as mentioned herein under. Bus shelters shall be constructed as per Manual on both sides of the Project Highway. These bus shelters will also have passenger shelter.

**Details of Bus shelters**

<b>Sl. No.</b>	<b>Project Facility</b>	<b>Location (km)</b>	<b>Design Requirements</b>
1	Bus shelter	32+380	Bus shelter have been placed on both side of proposed roadway

**Pedestrian Facilities**

Pedestrian facilities shall be provided at the locations of urban sections in order to ensure safety of pedestrians while crossing in consultation with NHIDCL. This should include (a) minimum Zebra Crossing with flashing Beacon or (b) Zebra Crossing with separate pedestrian path or (c) any other provision as approved by AE.

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

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### **Landscaping**

Landscape treatment of the Project Highway shall be undertaken through planting of trees and ground cover of appropriate varieties and landscaping on surplus land in the ROW. The Construction Contractor should plant at least 2000 nos. of trees of minimum 6 ft. height with tree guard made up of MS sections.

Plantation scheme shall be prepared in consultation with the Forest Department of the Government of Nagaland, , and the Independent Consultant/NHIDCL

### **Environment**

The Project Highway during design, construction and maintenance period shall conform to the environmental rules and regulations in force. The Construction Contractor shall be responsible for the same.

## **SCHEDULE – D**

*(See Clause 2.1)*

### **SPECIFICATIONS AND STANDARDS**

#### **1. Construction**

The Contractor shall comply with the Specifications and Standards set forth in Annex– I of this Schedule – D for construction of the Project Highway.

#### **2. Design Standards**

The Project Highway including Project Facilities shall conform to design requirements set out in the following documents:

Manual of specification and standards for two laning of Highways with paved shoulder (Second revision) IRC:SP:73-2018, Hill road manual IRC:SP:48-1998 and Specification of roads and bridges work (fifth revision), MoRTH.

**Annex – I**  
**(Schedule – D)**  
**Specifications and Standards for Construction**

**1. Specifications and Standards**

All materials, works and construction operations shall confirm to the Manual of Specifications and Standards for Two Laning of Highways (IRC: SP: 73 – 2018), referred as the Manual, MORTH Specifications for Road and Bridge Works, and IRC: SP: 48-1998. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority’s Engineer.

**2. Deviations from the Specifications and Standards**

- i) The terms ‘Concessionaire’, ‘Independent Engineer’ and ‘Concession Agreement’ used in the Manual (IRC: SP 73- 2018) shall be deemed to be substituted by the terms ‘Contractor’, ‘Authority’s Engineer’ and ‘Agreement’ respectively.
- ii) Notwithstanding anything to the contrary contained in Paragraph 1 above, the following Specifications and Standards shall apply to the Project Highway, and for purposes of this Agreement, aforesaid Specifications and Standards of following clauses shall be deemed to be amended to the extent set forth below

<b>S. No.</b>	<b>Clause</b>	<b>Provision as per Manual (IRC: SP:73-2018)</b>	<b>Modified Provision</b>
1	2.2	<b>Design Speed:</b> Ruling or minimum Design speed shall be followed	Design speed shall be 30 Km/h for project highway where the radius is less than 40m. The same is mentioned in the Plan & Profile drawings given in <b>Annexure-III of Schedule A</b>
2	2.7.2	<b>Roadway Width:</b> On horizontal curves with radius up to 300 m width of pavement and roadway shall be increased as per Table 2.4	On horizontal Curves with radius up to 300 m width of pavement and roadway shall be increased as per Plan & Profile drawings given in Annexure-III of Schedule A
3	2.9.4	<b>Radius of Horizontal Curves:</b>	Radius of Horizontal Curves shall be as per the alignment plan shown in Plan & Profile drawings given in <b>Annexure-III of Schedule A</b> .
4	2.6	<b>Type of Shoulder in Open Country</b>	As given in <b>Schedule B</b>
5	5.1	<b>Pavement Crust thickness</b>	As given in Schedule B
6	7.3(ii)	<b>New Bridges:</b>	The minimum width of footpath clear of crash barrier and railings shall be 1.3 m as detailed in GAD drawings for Bridges as per <b>Annexure-III of Schedule A</b>

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

## Schedule - H

(See Clauses 10.1 (iv) and 19.3)

### Contract Price Weightages

1. The Contract Price for this Agreement is Rs \_\_\_\_\_ Crore rupees.

1.1 Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

Bill No	Weightage in percentage to the contract price	Description of Items	Percentage weightage	
1				
		A1.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	0.14%
		A1.2	Sub-Base Course	0.86%
		A1.3	Non - Bituminous Base Course	1.70%
		A1.4	Bituminous Base Course	2.77%
		A1.5	Wearing Coat	8.06%
		A1.6	Widening and repair of culverts	0.20%
		A1.7	Hard Shoulder	3.90%
2		<b>RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS (FLEXIBLE PAVEMENT)</b>		
	31.53%	A2.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	0.42%
		A2.2	Sub-Base Course	0.57%
		A2.3	Non - Bituminous Base Course	1.19%
		A2.4	Bituminous Base Course	1.55%
		A2.5	Wearing Coat	3.61%
		A2.6	Hard Shoulder	1.72%
3		<b>RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS (RIGID PAVEMENT)</b>		
		A3.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	0.00%
		A3.2	Sub-Base Course	0.00%
		A3.3	Dry Lean Concrete(DLC) Course	0.00%
		A3.4	Pavement Quality Control(PQC) Course	0.00%
4		<b>RECONSTRUCTION/NEW SERVICE ROAD (FLEXIBLE PAVEMENT)</b>		0.00%

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

		A4.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	0.00%
		A4.2	Sub-Base Course	0.00%
		A4.3	Non-Bituminous Base Course	0.00%
		A4.4	Bituminous Base Course	0.00%
		A4.5	Wearing Coat	0.00%
5		<b>RECONSTRUCTION/NEW SERVICE ROAD (RIGID PAVEMENT)</b>		
		A5.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	0.00%
		A5.2	Sub-Base Course	0.00%
		A5.3	Dry Lean Concrete (DLC) Course	0.00%
		A5.4	Pavement Quality Control (PQC) Course	0.00%
6		<b>RECONSTRUCTION AND NEW CULVERTS ON EXISTING ROAD, REALIGNMENTS, BYPASSES</b>		
		A6.1	Culverts and associated Protection Works (Length< 6m)	1.22%
		A6.2	Balance work of existing Culverts and associated Protection Works (Length< 6m)	3.63%
7		<b>WIDENING AND REPAIR OF MINOR BRIDGES (Length &gt; 6 m and &lt; 60 m)</b>		
		A7.1	Minor Bridges	0.00%
8	11.44%	<b>NEW MINOR BRIDGES (Length &gt; 6 m and &lt; 60 m)</b>		
		A8.1	<b>Foundation + Sub Structures:</b> On completion of the foundation work including foundations for wing wall and return walls, abutments, piers up to the abutment/pier cap.	6.71%
		A8.2	<b>Super-structure:</b> On completion of the super structure in all respect including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect.	3.40%
		A8.3	<b>Approaches:</b> On completion of approaches including retaining wall, stone pitching, protection works complete in all respect and fit for use.	1.32%
		A8.4	<b>Guide Bunds and River Training Works:</b> On completion of Guide bunds and river training works complete in all respects.	0.00%
9		<b>WIDENING AND REPAIRS OF UNDERPASSES/ OVERPASSES</b>		
		A9.1	Underpasses/ Overpasses	0.00%
10		<b>NEW UNDERPASSES/ OVERPASSES</b>		

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

		A10.1	<b>Foundation + Sub Structures:</b> On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.	0.00%	
		A10.2	<b>Super-structure:</b> On completion of the super structure in all respect including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect. Wearing Coat (a) in case of overpass- wearing coat including expansion joint complete in all respects as specified and (b) in case of underpass- Rigid pavement including drainage facility complete in all respects as specified.	0.00%	
		A10.3	<b>Approaches:</b> On completion of approaches including retaining walls/ Reinforced earth walls, stone pitching, protection works complete in all respect and fit for use.	0.00%	
<b>11</b>	<b>0.000%</b>	<b>WIDENING AND REPAIRS OF MAJOR BRIDGES</b>			
		A11.1	Foundation	0.00%	
		A11.2	Sub-structure	0.00%	
		A11.3	Super-structure (including bearings)	0.00%	
		A11.4	Wearing Coat including expansion joints	0.00%	
		A11.5	Miscellaneous items like handrails, crash barriers, road markings etc.	0.00%	
		A11.6	Wing walls/ Return walls	0.00%	
		A11.7	Guide Bunds, River Training Works etc	0.00%	
		A11.8	Approaches (including Retaining walls, stone pitching and protection works)	0.00%	
<b>12</b>		<b>NEW MAJOR BRIDGES</b>			
		A12.1	Foundation	0.00%	
		A12.2	Sub-structure	0.00%	
		A12.3	Super-structure (including bearings)	0.00%	
		A12.4	Wearing Coat including expansion joints	0.00%	
		A12.5	Miscellaneous items like handrails, crash barriers, road markings etc.	0.00%	
		A12.6	Wing walls/ Return walls	0.00%	
		A12.7	Guide Bunds, River Training Works etc	0.00%	
		A12.8	Approaches (including Retaining walls, stone pitching and protection works)	0.00%	
<b>13</b>		<b>WIDENING AND REPAIR OF ROB/RUB</b>			
		A13.1	<b>(a) ROB</b>	0.00%	
		(i)	Foundation	-	0.00%
		(ii)	Sub-structure	-	0.00%
		(iii)	Super-structure (including bearings)	-	0.00%

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

		(iv)	Wearing Coat in case of ROB- wearing coat including expansion joint complete in all respects as specified.	-	0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		(vi)	Wing walls/ Return walls		0.00%
		(vii)	Approaches (including Retaining walls, stone pitching and protection works)	-	0.00%
	A13.2	<b>(b)</b>	<b>RUB</b>		
		(i)	Foundation	-	0.00%
		(ii)	Sub-structure	-	0.00%
		(iii)	Super-structure (including bearings)	-	0.00%
		(iv)	Wearing Coat in case of RUB- Rigid pavement under RUB including drainage facility complete in all respects as specified.	-	0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		(vi)	Wing walls/ Return walls		0.00%
		(vii)	Approaches (including Retaining walls, stone pitching and protection works)	-	0.00%
<b>14</b>	<b>NEW ROB/RUB</b>				
	A14.1	<b>(a)</b>	<b>ROB</b>		
		(i)	Foundation	-	0.00%
		(ii)	Sub-structure	-	0.00%
		(iii)	Super-structure (including bearings)	-	0.00%
		(iv)	Wearing Coat in case of ROB- wearing coat including expansion joint complete in all respects as specified.	-	0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		(vi)	Wing walls/ Return walls		0.00%
		(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-	0.00%
	A14.2	<b>(b)</b>	<b>RUB</b>		

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

		(i)	Foundation	-	0.00%
		(ii)	Sub-structure	-	0.00%
		(iii)	Super-structure (including bearings)	-	0.00%
		(iv)	Wearing Coat in case of RUB- Rigid pavement under RUB including drainage facility complete in all respects as specified.	-	0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		(vi)	Wing walls/ Return walls		0.00%
		(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-	0.00%
<b>15</b>	<b>WIDENING AND REPAIR OF ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS</b>				
	A.15.1	(i)	Foundation	-	0.00%
		(ii)	Sub-structure	-	0.00%
		(iii)	Super-structure (including bearings)	-	0.00%
		(iv)	Wearing Coat including expansion joint.	-	0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		(vi)	Wing walls/ Return walls		0.00%
		(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-	0.00%
<b>16</b>	<b>NEW ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS</b>				
	A.16.1	(i)	Foundation	-	0.00%
		(ii)	Sub-structure	-	0.00%
		(iii)	Super-structure (including bearings)	-	0.00%
		(iv)	Wearing Coat including expansion joint.	-	0.00%
		(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		0.00%
		(vi)	Wing walls/ Return walls		0.00%
		(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-	0.00%

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

<b>17</b>	<b>57.03%</b>	<b>OTHER WORKS</b>				
		A17.1	Toll Plaza		0.00%	
		A17.2	Road side drain		9.74%	
		A17.3	Road signs, marking, Km stones, Safety devices etc.			0.00%
			(a)	Pavement Marking		0.75%
			(b)	Crash barrier/W metal crash barrier		1.52%
			(c)	Traffic Sign		0.78%
			(d)	Road Boundary stone, km Stone,5th km stone and hectometre stone		0.05%
			(e)	Traffic blinker LED delineator, stud, reflective payment marker, tree reflector		1.12%
			(f)	Traffic impact Attenuators at Abutments and Piers traffic island		0.00%
			(g)	Road furniture (overhead signboard etc.)		0.00%
			(h)	Others including construction of median & median kerb with channel & paint and rumble strip		0.00%
			A17.4	Project facilities		
		(a)		Truck lay-byes		0.00%
		(b)		Bus bays and Bus Shelter		0.15%
		(c)		Junctions (Major & Minor)		0.00%
		(d)		Others including Cable duct & Lighting on Bridges, etc.		0.00%
		(e)		Rest areas (viewpoint/recreational areas)		0.00%
		A17.5	Road Side Plantation, Median plantation & Turfing of the embankment slope			0.00%
		A17.6	Repair of protection works other than approaches to the bridges, elevated sections/ fly-overs/ grade separator and ROB's/ RUBs.			0.00%
		A17.7	Traffic diversion, Safety and traffic management during construction			0.00%
		A17.8	Slope Protection Works as special requirement for hill road			0.00%
			(a)	Hydro Seeding of Cut Slopes in Soil		0.07%
			(b)	Seeding and Mulching with Jute net all along the perpetual slide locations		0.71%
			(c)	Catch water Drain		0.18%
			(d)	Gabion Structure on hill side/valley side of varying height between 1 to 6 metre depending upon the slope		24.89%
			(e)	Reinforced earth wall		11.46%
			(f)	Breast wall		5.24%
			(g)	Sub Surface drain with perforated pipe for collection of seepage water to avoid sinking of pavement		0.34%
			(h)	Gabion Parapet Wall		0.02%
			<b>100.000%</b>			<b>100%</b>

## 1.2 Procedure of estimating the value of work done

### 1.1.1 Roadworks

Procedure for estimating the value of road work done shall be as follows:

Table 1.3.1

STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
<b>Table 1.3.1</b>		
<b>A-Widening and Strengthening of existing road</b>		
(1) Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock, removal of unserviceable soil etc.	0.142	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m. In case of Hill Cutting, the payment procedure will be as under: Hill Cutting: 40% of weightage of A (1) Preparation of Sub-Grade: 60% of weightage of A (1)
(2) Sub Base courses	0.863	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Non-Bituminous Base Course	1.697	
(4) Bituminous Base Course	2.772	
(5) Wearing coat	8.061	
(6) Widening and repair of culverts	0.196	Cost of completed culverts shall be determined on pro rata basis with respect to the total no. of culverts. The payment shall be made on the completion of at least two culverts.
(6) Hard Shoulder	3.903	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
<b>B 1- Reconstruction / New two-lane alignment / bypass (Flexible pavement)</b>		
(1) Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock, removal of unserviceable soil etc.	0.415	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m. In case of Hill Cutting, the payment procedure will be as under: Hill Cutting: 40% of weightage of A (1) Preparation of Sub-Grade: 60% of weightage of A (1)
(2) Sub Base Course	0.566	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Non-Bituminous Base Course	1.185	
(4) Bituminous Base Course	1.554	
(5) Wearing coat	3.610	
(6) Hard Shoulder	1.717	

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STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
<b>B 2- Reconstruction / New two lane alignment / bypass (Rigid pavement)</b>		
(1) Earthwork up to top of the sub-grade	[Nil]	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m. In case of Hill Cutting, the payment procedure will be as under : Hill Cutting : 40% of weightage of A (1) Preparation of Sub-Grade: 60% of weightage of A (1)
(2) Earthwork in shoulders	[Nil]	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Sub Base Course	[Nil]	
(4) Dry Lean Concrete (DLC) Course	[Nil]	
(5) Pavement Quality Control (PQC) course	[Nil]	
<b>C 1- Reconstruction / New Service road/ Slip Road (Flexible pavement)</b>		
(1) Earthwork up to top of the sub-grade including shoulder	[Nil]	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m. In case of Hill Cutting, the payment procedure will be as under : Hill Cutting : 40% of weightage of A (1) Preparation of Sub-Grade: 60% of weightage of A (1)
(2) Sub Base Course	[Nil]	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Non Bituminous Base Course	[Nil]	
(4) Bituminous Base Course	[Nil]	
(5) Wearing coat	[Nil]	
<b>C 2- Reconstruction / New Service road (Rigid pavement)</b>		
(1) Earthwork up to top of the sub-grade	[Nil]	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m. In case of Hill Cutting, the payment procedure will be as under : Hill Cutting : 40% of weightage of A (1) Preparation of Sub-Grade: 60% of weightage of A (1)
(2) Sub Base Course	[Nil]	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Dry Lean Concrete (DLC)	[Nil]	

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STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
Course		
(4) Pavement Quality Control (PQC) course	[Nil]	
D - Reconstruction and New culverts on existing road, Realignment, bypasses:		
(1) Hume Pipe Culverts (length <6m)	[Nil]	Cost of each culvert shall be determined on pro rata basis with respect to the total no. of culverts. Payment shall be made on the completion of at least 01 (One) culvert.
(2) Box Culverts New / Reconstruction (length <6m)	1.222	
3) Box Culverts (Balance work in existing culvert (length <6m)	3.629	

@ For example, if the total length of bituminous work to be done is 100 km, the cost per km of bituminous work shall be determined as follows:

Cost per km = P x weightage for road work x weightage for bituminous work x (1/L)

Were,

P = Contract Price

L = Total length in km

Similarly, the rates per km for other stages shall be worked out accordingly.

**Note: The length affected due to law and order problems or litigation during execution due to which the Contractor is unable to execute the work, may be deducted from the total project length for payment purposes. The total length calculated here is only for payment purposes and will not affect and referred in other clauses of the Contract Agreement.**

### 1.1.2 Minor Bridges and Underpasses/Overpasses.

Procedure for estimating the value of Minor bridge and underpasses/Overpasses shall be as stated in table 1.3.2:

Table 1.3.2

STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
<b>Table 1.3.2 Minor Bridges and Under Pass/Over Pass</b>		
<b>A 1- Widening and repairs of Minor Bridges (length &gt;6m and &lt;60m)</b>	[Nil]	Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length of the minor bridges. Payment shall be made on completion of widening and repair works of a minor bridge.
<b>A 2- New Minor Bridges (length &gt;6m and &lt;60m)</b>		Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length of the minor bridges.
(1) Foundation : on completion of foundation work including foundation for wing and return wall	6.714	(1) Foundation: Payment against Foundation shall be made on pro rata basis on completion of atleast two foundations. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure: on completion of abutments, piers upto the abutment/pier cap.		(2) Sub Structure: Payment against Sub Structure shall be made on pro rata basis on completion of atleast two sub structures upto abutment / pier cap level of each bridge.
(3) Superstructure: on completion of super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect.	3.400	(3) Super structure: Payment shall be made on pro rata basis on completion of a stage i.e. completion of super structure of atleast one span in all respect as specified in the column of " Stage of Payment" in this Sub-clause.
(4) Approaches: on completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use.	1.324	(4) Approaches: Payment shall be made on pro rata basis on completion of a stage ie. completion of approaches in all respect as specified in the column of " Stage of Payment" in this Sub-clause.
(5) Guide bunds and river training works: on completion of guide bunds and repair training works complete in all respects.	[Nil]	(5) Guide bunds and river training works: Payment shall be made on pro rata basis on completion of a stage ie. completion of guide bunds and river training works in all respect as specified.
<b>B 1 - Widening and repair of underpasses / overpasses</b>	[Nil]	Cost of each underpass / overpass shall be determined on pro rata basis with respect to the total linear length of the underpass / overpass. Payment shall be made on completion of widening and repair works of a underpass / overpass.

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STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
B 2 - New Underpasses / Overpasses		Cost of each underpass / overpass shall be determined on pro rata basis with respect to the total linear length of the underpass / overpass.
(1) Foundation: on completion of foundation work including foundation for wing and return wall.	[Nil]	(1) Foundation: Payment against Foundation shall be made on pro rata basis on completion of atleast two foundations. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure: on completion of abutments, piers upto the abutment/pier cap.	[Nil]	(2) Sub Structure: Payment against Sub Structure shall be made on pro rata basis on completion of atleast two sub structures upto abutment / pier cap level of each underpass / overpass.
(3) Superstructure: on completion of super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect.	[Nil]	(3) Super structure: Payment shall be made on pro rata basis on completion of a stage ie. completion of super structure of atleast one span in all respect as specified in the column of " Stage of Payment" in this Sub-clause.
(4) Approaches: on completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use.	[Nil]	(4) Approaches: Payment shall be made on pro rata basis on completion of a stage ie. completion of approaches in all respect as specified in the column of " Stage of Payment" in this Sub-clause.

### 1.1.3 Major Bridge works, ROB/RUB and Structures.

Procedure for estimating the value of Major Bridge works, ROB/RUB and Structures shall be as stated in table 1.3.3:

**Table 1.3.3**

STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
<b>Table 1.3.3</b>		
<b>A.1 Widening and repair of Major Bridge</b>		

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
(1) Foundation	[Nil]	(i) Foundation: Cost of each Major Bridge shall be determined on prorata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge subject to completion of atleast two foundations of the major bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also were specified.
(2) Sub-structure	[Nil]	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the major bridge subject to completion of atleast two sub structures of abutment / pier cap level of the major bridge..
(3) Super-structure (including bearings)	[Nil]	Payment shall be made on pro rata basis on completion of a stage i.e. completion of super structure including bearings of atleast one span in all respects as specified.
(4) Wearing Coat including expansion joints	[Nil]	(iv)Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barrier, road markings etc.	[Nil]	(v) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls upto top	[Nil]	(vi) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Guide bunds, River Training works etc.	[Nil]	(vii) Guide Bonds, River Training works: Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.
(8) Approaches (including Retaining walls, stone pitching and protection works)	[Nil]	(viii) Approaches: Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
A 2 - New Major bridges		Cost of each structure shall be determined on pro rata basis in respect to the total liner length (m) of all the structures. Payments shall be made on completion of each stage of structures as per weightage given in this table.
(1) Foundation: Foundation for abutment, piers	[Nil]	(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of a bridge as per weightage given in this table, subject to completion of at least two foundations in all respect.

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STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
		In case load testing is required for foundation, the trigger for first payment shall include load testing also where specified.
(2) Sub-Structure: Sub-Structure for abutment, piers up to abutment/pier cap level	[Nil]	(2) Sub-Structure: Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of a bridge as per weightage given in this table, subject to completion of atleast two sub-structure upto abutment/pier cap level of a bridge.
(3) Super-structure: including girder, deck slab, bearings (excluding wearing coat and expansion joints)		
a) Super Structure : casting of girder/fabrication of girders (Steel)	[Nil]	(a) Super – structure (casting of girder) : Unit of measurement is numbers. Payment against casting of girders shall be made on pro rata basis with respect to total numbers of girders required in the structure on completion of a stage i.e. not less than completion of casting of at least five girders of the structure.
(b) Super structure : Casting of segments	[Nil]	(b) Super structure (Casting of segments): Unit measurement is numbers. Payment against casting of segments shall be made on pro rata basis with respect of total numbers of segments required in the structure on completion of a stage i.e. not less than completion of casting at least 10 (ten) segments of the structure.
(c) Super structure : erection of girders, deck slab and bearings	[Nil]	(c) Super structure (Erection of girders, deck slab and bearing) : Payment shall be made on pro rata basis on completion of a stage i.e. completion of supers structure including bearings of at least one span in all respects as specified.
(4) Other Ancillary works : wearing coat, expansion joints hand rails, crash barriers, tests on completion etc. completion in all respect.	[Nil]	Payment shall be made on pro-rata basis on completion of the stage in all respect as specified, for each structure.
(5) Miscellaneous Works : stone pitching, protection works, excluding retaining walls/reinforced earth walls etc.	[Nil]	Payment shall be made on pro-rata basis on completion of the stage in all respect as specified, for each structure.
(6) Wing/Return wall up to full height	[Nil]	Wing/Return wall up to full height: Payment shall be made on completion of all wing wall/return walls for a bridges as per weightage given in this table, completion in all respect as specified.

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
(7) Guide bunds, River Trainings works etc.	[Nil]	Payment shall be made on pro rata basis on completion of the stage in all respect as specified, for each structure.
(8) Retaining walls/Reinforced earth walls etc.	[Nil]	
a) Panel Casting	[Nil]	a) Panel Casting : Unit of measurement is area in Sqm. Payment against casting of panels shall be made on pro rata basis with respect to total area panels required for the structure on completion of a stage i.e. not less than completion of casting of 25% of scope of the RE wall panel of each bridge.
b) Erection of panel / construction of retaining wall	[Nil]	b) Erection of Panel / Construction of Retaining wall : Unit of measurement is area in Sqm. Payment shall be made on pro rata basis on completion of stage i.e. completion of erection of panels/ Construction of retaining wall complete in all respect for atleast 25% scope of work for each structure.
B 1 - Widening and repair of		
a) ROB b) RUB		
1) Foundation	[Nil]	(i) Foundation: Cost of each RoB / RuB shall be determined on pro rata basis with respect to the total linear length (m) of the RoB / RuB. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the RoB / RuB subject to completion of atleast two foundations of the RuB/ROB. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
2) Sub Structure	[Nil]	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the RoB / RuB subject to completion of atleast two sub structure of abutments / pier cap level of the RuB/ROB.
3) Super Structure (Including bearings)	[Nil]	(iii) Super-structure: Payment shall be made on pro rata basis on completion of a stage i.e. completion of super structure including bearings of atleast one span in all respects as specified.

Balance Work Construction of two-Lane with hard shoulders of Merangkong – Tamlu – Mon Road on EPC basis from existing Km 20.456 to Km 41.065 [Design Km. 20+000 to Km. 40+000] (Design Length – 20.000 Km) in the state of Nagaland under SARDP-NE Phase A”

STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
4) Wearing coat (a) in case of RoB - wearing coat including expansion joints complete in all respect as specified and (b) in case of RuB - rigid pavement under RuB including drainage facility complete in all respect as specified	[Nil]	(iv) Wearing Coat: Payment shall be made on completion of (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
5) miscellaneous items like hand rails, crash barrier, road markings etc	[Nil]	(v) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
6) wing walls / return walls	[Nil]	(vi) Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
7) Approaches (including Retaining walls, stone pitching and protection works)	[Nil]	(vii) Approaches: Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
B 2 - New ROB / RUB		Cost of each structure shall be determined on pro rata basis in respect to the total liner length (m) of all the structures. Payments shall be made on completion of each stage of a structures as per weightage given in this table.
(1) Foundation: Foundation for abutment, piers	[Nil]	(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of a ROB/RUB as per weightage given in this table, subject to completion of at least two foundations in all respect. In case load testing is required for foundation, the trigger for first payment shall include load testing also where specified.
(2) Sub-Structure: Sub-Structure for abutment, piers up to abutment/ pier cap level	[Nil]	(2) Sub-Structure: Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of a ROB/RUB as per weightage given in this table, subject to completion of atleast two sub-structure upto abutment/pier cap level of a ROB/RUB.
(3) Super-structure: including girder, deck slab, bearings (excluding wearing coat and expansion joints)		

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STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
a) Super Structure : casting of girder/fabrication of girders (Steel)	[Nil]	(a) Super – structure (casting of girder): Unit of measurement is numbers. Payment against casting of girders shall be made on pro rata basis with respect to total numbers of girders required in the structure on completion of a stage i.e. not less than completion of casting of at least five girders of the structure.
(b) Super structure : Casting of segments	[Nil]	(b) Super structure (Casting of segments): Unit measurement is numbers. Payment against casting of segments shall be made on pro rata basis with respect of total numbers of segments required in the structure on completion of a stage i.e. not less than completion of casting at least 10 (ten) segments of the structure.
(c) Super structure : erection of girders, deck slab and bearings	[Nil]	(c) Super structure (Erection of girders, deck slab and bearing): Payment shall be made on pro rata basis on completion of a stage i.e. completion of supers structure including bearings of at least one span in all respects as specified.
(4)Other Ancillary works : wearing coat, expansion joints hand rails, crash barriers, tests on completion etc. completion in all respect.	[Nil]	Payment shall be made on pro-rata basis on completion of the stage in all respect as specified, for each structure.
(5) Miscellaneous Works : stone pitching, protection works, excluding retaining walls/reinforced earth walls etc.	[Nil]	Payment shall be made on pro-rata basis on completion of the stage in all respect as specified, for each structure.
(6) Wing/Return wall up to full height	[Nil]	Wing/Return wall up to full height: Payment shall be made on completion of all wing wall/return walls for each ROB/RUB as per weightage given in this table, completion in all respect as specified.
(7) Retaining walls/Reinforced earth walls etc.	[Nil]	
a) Panel Casting	[Nil]	a) Panel Casting : Unit of measurement is area in Sqm. Payment against casting of panels shall be made on pro rata basis with respect to total area panels required for the structure on completion of a stage i.e. not less than completion of casting of 25% of scope of the RE wall panel of each ROB/RUB.

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STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
b) Erection of panel / construction of retaining wall	[Nil]	b) Erection of Panel / Construction of Retaining wall : Payment shall be made on pro rata basis on completion of stage i.e. completion of erection of panels/ Construction of retaining wall complete in all respect for atleast 25% scope of work for each ROB/RUB.
C 1 - Widening and repair of Elevated sections / Fly overs / Grade Separators		
1) Foundation	[Nil]	(i) Foundation: Cost of each structure shall be determined on pro rata basis with respect to the total linear length (m) of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure subject to completion of atleast two foundations of the structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
2) Sub Structure	[Nil]	(ii) Sub-Structure: Payment against Sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the structure subject to completion of atleast two sub structure of abutments / pier cap level of the structure.
3) Super Structure (Including bearings)	[Nil]	(iii) Super-structure: Payment shall be made on pro rata basis on completion of a stage i.e. completion of super structure including bearings of atleast one span in all respects as specified.
4) Wearing coat including expansion joints	[Nil]	(iv) Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
5) Miscellaneous items like hand rails, crash barrier, road markings etc	[Nil]	(v) Miscellaneous: Payments shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
6) wing walls / return walls	[Nil]	(vi) Wing walls/return walls: Payments shall be made on completion of all wing walls / return walls complete in all respects as specified.
7) Approaches (including Retaining walls, stone pitching and protection works)	[Nil]	(vii) Approaches: Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
C 2 - New Elevated sections / Fly overs / Grade Separators		Cost of each structure shall be determined on pro rata basis in respect to the total liner length (m) of all the structures. Payments shall be made on completion of each stage of a

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STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
		structures as per weightage given in this table.
(1) Foundation: Foundation for abutment, piers	[Nil]	(1) Foundation: Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each structure as per weightage given in this table, subject to completion of at least two foundations in all respect. In case load testing is required for foundation, the trigger for first payment shall include load testing also where specified.
(2) Sub-Structure: Sub-Structure for abutment, piers up to abutment/ pier cap level	[Nil]	(2) Sub-Structure: Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of each structure as per weightage given in this table, subject to completion of atleast two sub-structure upto abutment/ pier cap level of each structure.
(3) Super-structure: including girder, deck slab, bearings (excluding wearing coat and expansion joints)		
a) Super Structure : casting of girder/fabrication of girders (Steel)	[Nil]	(a) Super – structure (casting of girder) : Unit of measurement is numbers. Payment against casting of girders shall be made on pro rata basis with respect to total numbers of girders required in the structure on completion of a stage i.e. not less than completion of casting of at least five girders of the structure.
(b) Super structure : Casting of segments	[Nil]	(b) Super structure (Casting of segments): Unit measurement is numbers. Payment against casting of segments shall be made on pro rata basis with respect of total numbers of segments required in the structure on completion of a stage i.e. not less than completion of casting at least 10 (ten) segments of the structure.
(c) Super structure : erection of girders, deck slab and bearings	[Nil]	(c) Super structure (Erection of girders, deck slab and bearing) : Payment shall be made on pro rata basis on completion of a stage i.e. completion of supers structure including bearings of at least one span in all respects as specified.
(4)Other Ancillary works : wearing coat, expansion joints hand rails, crash barriers, tests on completion etc. completion in all respect.	[Nil]	Payment shall be made on pro-rata basis on completion of the stage in all respect as specified, for each structure.

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STAGE FOR PAYMENT	PERCENTAGE WEIGHTAGE	PAYMENT PROCEDURE
(5) Miscellaneous Works : stone pitching, protection works, excluding retaining walls/reinforced earth walls etc.	[Nil]	Payment shall be made on pro-rata basis on completion of the stage in all respect as specified, for each structure.
(6) Wing/Return wall up to full height	[Nil]	Wing/Return wall up to full height: Payment shall be made on completion of all wing wall/return walls for each structure as per weightage given in this table, completion in all respect as specified.
(7) Retaining walls/Reinforced earth walls etc.	[Nil]	
a) Panel Casting	[Nil]	a) Panel Casting : Unit of measurement is area in Sqm. Payment against casting of panels shall be made on pro rata basis with respect to total area panels required for the structure on completion of a stage i.e. not less than completion of casting of 25% of scope of the RE wall panel of each structure.
b) Erection of panel / construction of retaining wall	[Nil]	b) Erection of Panel / Construction of Retaining wall : Unit of measurement is area in Sqm. Payment shall be made on pro rata basis on completion of stage i.e. completion of erection of panels/ Construction of retaining wall complete in all respect for atleast 25% scope of work for each structure.

**Note:** (1) In case of innovate Major Bridge projects like cable suspension/cable stayed/ Extra Dozed and exceptionally long span bridges, the schedule may be modified as per site requirements before bidding with due approval of Competent Authority.

(2) The Schedule for exclusive tunnel projects may be prepared as per site requirements before bidding with due approval of Competent Authority.

#### 1.1.4 Other works.

Procedure for estimating the value of other works done shall be as stated in table 1.3.4.

**Table 1.3.4**

Table 1.3.4		
Other Works	**]	
(i) Toll Plaza	[Nil]	Payment of Toll Plaza shall be made on Pro rata basis as per following completed stages:
		(i) Rigid pavement upto DLC (LHS) -12.5 %
		(ii) Rigid pavement upto DLC (RHS)- 12.5 %
		(iii) PQC (LHS)-25 %

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		(iv) PQC (RHS)-25 %	Unit of measurement is linear length in km. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5% (five percent) of the total length.
		(v) Admin Building, Maintenance Building & Misc. Works-10% %	
		(vi) Canopy, Toll Booth, Safety Items & Miscellaneous Works-12.5 %	
		(vii) Toll Plaza Tunnel-2.5 %	
(ii) Road side drains	9.738		
(iii) Pavement Marking	0.750		
(iv) Crash Barrier/ W metal Crash barrier	1.520		
(v) Traffic Sign	0.783		
(vi) Road Boundary stone, KM stone, 5 <sup>th</sup> Km Stone & Hectometer stone	0.051		
(vii) Traffic blinker LED delineator, stud, reflective payment marker, tree reflector	1.125		
(viii) Bus Bays& Bus Shelter	0.154		
(ix) Hydro seeding	0.072		
(x) Seeding and Mulching through Jute net	0.707		
(xi) Catch water Drain	0.178		
(xii) Gabion Structure/ Retaining wall	24.885		
(Xiii) Reinforced earth wall	11.461		
(xiv) Breast Wall	5.243		
(xv) Sub Surface drain with perforated pipe for collection of seepage water to avoid sinking of pavement	0.343		
(xvi) Gabion Parapet wall	0.020		

## 2. Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated in Clause14.1.1.

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2.2 Payment for Maintenance shall be made in quarterly instalments in accordance with the provisions of Clause 19.7.

## Schedule - J

(See Clause 10.3(ii))

### Project Completion Schedule

#### 1. Project Completion Schedule

During Construction period, the Contractor shall comply with the requirements set forth in this Schedule-J for each of the Project Milestones and the **Scheduled Completion Date**. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

#### 2. Project Milestone-I

- (i) Project Milestone-I shall occur on the date falling on the [255<sup>th</sup>] day from the Appointed Date (the “**Project Milestone-I**”).
- (ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 10% (ten per cent) of the Contract Price.

#### 3. Project Milestone-II

- (i) Project Milestone-II shall occur on the date falling on the [438<sup>th</sup>] day from the Appointed Date (the “**Project Milestone-II**”).
- (ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 35% (thirty five per cent) of the Contract Price and should have started construction of all bridges

#### 4. Project Milestone-III

- (i) Project Milestone-III shall occur on the date falling on the [621<sup>st</sup>] day from the Appointed Date (the “**Project Milestone-III**”).
- (ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 70% (seventy per cent) of the Contract Price and should have started construction of all project facilities.

#### 5. Scheduled Completion Date

- (i) The Scheduled Completion Date shall occur on the [730<sup>th</sup>] day from the Appointed Date.
- (ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

#### 6. Extension of time

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Upon extension of any or all of the aforesaid Project Milestones or the Scheduled Completion Date, as the case may be, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.