

Annexure 2-1

AADT FOR BASANT-JAHANABAD LOCATION OF KISHANGANJ TO BAHADURGANJ ROAD PROJECT

Year	Traffic Type								Growth Rate (in %)							
	Cars	4WD	Small Buses	Large Bus	Small Truck (2 Axle - <3.5T)	Medium Truck (2 Axle - 3.5 to 7.5T)	Heavy Truck (3 Axle)	Tractor & Trailer (4 Axle & more)	Cars	4WD	Small Buses	Large Bus	Small Truck (2 Axle - <3.5T)	Medium Truck (2 Axle - 3.5 to 7.5T)	Heavy Truck (3 Axle)	Tractor & Trailer (4 Axle & more)
2019	2200	0	0	157	1833	803	187	239								
2020	2350	0	0	165	1925	860	199	267	6.81		5.00	5.00	5.00	7.15	6.63	11.61
2021	2510	0	0	173	2021	922	213	298	6.81		5.00	5.00	5.00	7.15	6.63	11.61
2022	2681	0	0	182	2122	988	227	332	6.81		5.00	5.00	5.00	7.15	6.63	11.61
2023	2863	0	0	191	2228	1058	242	371	6.81		5.00	5.00	5.00	7.15	6.63	11.61
2024	3016	0	0	200	2339	1114	255	402	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2025	3177	0	0	210	2456	1172	269	435	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2026	3346	0	0	221	2579	1234	284	472	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2027	3524	0	0	232	2708	1298	299	511	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2028	3712	0	0	244	2844	1366	316	554	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2029	3898	0	0	256	2986	1435	331	590	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2030	4093	0	0	269	3135	1506	348	629	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2031	4297	0	0	282	3292	1582	365	670	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2032	4512	0	0	296	3456	1661	384	715	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2033	4738	0	0	311	3629	1744	403	762	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2034	4975	0	0	326	3811	1831	423	804	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2035	5223	0	0	343	4001	1923	444	848	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2036	5485	0	0	360	4201	2019	466	895	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2037	5759	0	0	378	4411	2120	490	945	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2038	6047	0	0	397	4632	2226	514	997	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2039	6349	0	0	417	4863	2337	540	1047	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2040	6667	0	0	437	5107	2454	567	1100	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2041	7000	0	0	459	5362	2577	595	1154	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2042	7350	0	0	482	5630	2705	625	1212	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2043	7717	0	0	506	5912	2841	656	1273	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2044	8103	0	0	532	6207	2983	689	1336	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2045	8508	0	0	558	6518	3132	723	1403	5.00		5.00	5.00	5.00	5.00	5.00	5.00

DESIGN LANE MSA CALCULATION FOR BASANT-JAHANABAD LOCATION OF BAKARPUR TO MANIKPUR ROAD PROJECT												
Vehicle Type	Cars	4WD	Small Buses	Large Bus	Small Truck (2 Axle - <3.5T)	Medium Truck (2 Axle - 3.5 to 7.5T)	Heavy Truck (3 Axle)	Tractor & Trailer (4 Axle & more)			Directional Distribution Factor	Lane Distribution Factor
VDF	0.00	0.00	0.00	1.490	0.810	3.920	10.010	15.200			0.500	0.750
	Total AADT								Total MSA	Design Lane Yearly MSA	Cummulative Design Lane MSA	REMARKS
Year	Cars	4WD	Small Buses	Large Bus	Small Truck (2 Axle - <3.5T)	Medium Truck (2 Axle - 3.5 to 7.5T)	Heavy Truck (3 Axle)	Tractor & Trailer (4 Axle & more)				
2019	2200	0	0	157	1833	803	187	239	3.79	1.42		Base Year Count Data
2020	2350	0	0	165	1925	860	199	267	4.10	1.54		
2021	2510	0	0	173	2021	922	213	298	4.44	1.66		
2022	2681	0	0	182	2122	988	227	332	4.81	1.80		
2023	2863	0	0	191	2228	1058	242	371	5.22	1.96		The tentative construction traffic during construction period of 3 years (2023-2025)
2024	3016	0	0	200	2339	1114	255	402	5.56	2.08		
2025	3177	0	0	210	2456	1172	269	435	5.92	2.22	2.22	
2026	3346	0	0	221	2579	1234	284	472	6.30	2.36	4.6	The project shall be opened to traffic in Year 2026. Considering design period of 20 years till Year 2045 design lane traffic loading is estimated accordingly
2027	3524	0	0	232	2708	1298	299	511	6.71	2.52	7.1	
2028	3712	0	0	244	2844	1366	316	554	7.15	2.68	9.8	
2029	3898	0	0	256	2986	1435	331	590	7.56	2.84	12.6	
2030	4093	0	0	269	3135	1506	348	629	7.99	3.00	15.6	
2031	4297	0	0	282	3292	1582	365	670	8.44	3.17	18.8	
2032	4512	0	0	296	3456	1661	384	715	8.93	3.35	22.1	
2033	4738	0	0	311	3629	1744	403	762	9.43	3.54	25.7	
2034	4975	0	0	326	3811	1831	423	804	9.93	3.72	29.4	
2035	5223	0	0	343	4001	1923	444	848	10.45	3.92	33.3	
2036	5485	0	0	360	4201	2019	466	895	11.00	4.12	37.4	
2037	5759	0	0	378	4411	2120	490	945	11.57	4.34	41.8	
2038	6047	0	0	397	4632	2226	514	997	12.18	4.57	46.3	
2039	6349	0	0	417	4863	2337	540	1047	12.79	4.80	51.1	
2040	6667	0	0	437	5107	2454	567	1100	13.43	5.04	56.2	
2041	7000	0	0	459	5362	2577	595	1154	14.10	5.29	61.5	
2042	7350	0	0	482	5630	2705	625	1212	14.81	5.55	67.0	
2043	7717	0	0	506	5912	2841	656	1273	15.55	5.83	72.8	
2044	8103	0	0	532	6207	2983	689	1336	16.32	6.12	79.0	
2045	8508	0	0	558	6518	3132	723	1403	17.14	6.43	85.4	

AADT FOR AMRITPUR LOCATION OF KISHANGANJ TO BAHADURGANJ ROAD PROJECT

Year	Traffic Type								Growth Rate (in %)							
	Cars	4WD	Small Buses	Large Bus	Small Truck (2 Axle - <3.5T)	Medium Truck (2 Axle - 3.5 to 7.5T))	Heavy Truck (3 Axle)	Tractor & Trailer (4 Axle & more)	Cars	4WD	Small Buses	Large Bus	Small Truck (2 Axle - <3.5T)	Medium Truck (2 Axle - 3.5 to 7.5T)	Heavy Truck (3 Axle)	Tractor & Trailer (4 Axle & more)
2019	1435	0	0	135	1377	542	151	206								
2020	1533	0	0	142	1446	581	161	230	6.81		5.00	5.00	5.00	7.15	6.63	11.61
2021	1637	0	0	149	1518	622	172	257	6.81		5.00	5.00	5.00	7.15	6.63	11.61
2022	1749	0	0	156	1594	667	183	286	6.81		5.00	5.00	5.00	7.15	6.63	11.61
2023	1868	0	0	164	1674	714	195	320	6.81		5.00	5.00	5.00	7.15	6.63	11.61
2024	1967	0	0	172	1757	752	206	346	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2025	2072	0	0	181	1845	791	217	375	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2026	2183	0	0	190	1938	833	229	407	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2027	2299	0	0	199	2034	876	242	441	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2028	2421	0	0	209	2136	922	255	477	5.33		5.00	5.00	5.00	5.24	5.48	8.35
2029	2542	0	0	220	2243	968	268	509	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2030	2670	0	0	231	2355	1017	281	542	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2031	2803	0	0	242	2473	1068	295	578	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2032	2943	0	0	255	2597	1121	310	616	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2033	3090	0	0	267	2726	1177	325	656	5.00		5.00	5.00	5.00	5.00	5.00	6.58
2034	3245	0	0	281	2863	1236	342	693	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2035	3407	0	0	295	3006	1298	359	731	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2036	3577	0	0	309	3156	1363	377	772	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2037	3756	0	0	325	3314	1431	395	814	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2038	3944	0	0	341	3480	1502	415	860	5.00		5.00	5.00	5.00	5.00	5.00	5.54
2039	4141	0	0	358	3654	1577	436	903	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2040	4348	0	0	376	3836	1656	458	948	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2041	4566	0	0	395	4028	1739	481	995	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2042	4794	0	0	415	4229	1826	505	1045	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2043	5034	0	0	435	4441	1917	530	1097	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2044	5286	0	0	457	4663	2013	556	1152	5.00		5.00	5.00	5.00	5.00	5.00	5.00
2045	5550	0	0	480	4896	2114	584	1210	5.00		5.00	5.00	5.00	5.00	5.00	5.00

DESIGN LANE MSA CALCULATION FOR AMRITPUR LOCATION OF BAKARPUR TO MANIKPUR ROAD PROJECT												
Vehicle Type	Cars	4WD	Small Buses	Large Bus	Small Truck (2 Axle - <3.5T)	Medium Truck (2 Axle - 3.5 to 7.5T)	Heavy Truck (3 Axle)	Tractor & Trailer (4 Axle & more)			Directional Distribution Factor	Lane Distribution Factor
VDF	0.00	0.00	0.00	1.490	0.810	3.920	10.010	15.200			0.500	0.750
	Total AADT								Total MSA	Design Lane Yearly MSA	Cummulative Design Lane MSA	REMARKS
Year	Cars	4WD	Small Buses	Large Bus	Small Truck (2 Axle - <3.5T)	Medium Truck (2 Axle - 3.5 to 7.5T)	Heavy Truck (3 Axle)	Tractor & Trailer (4 Axle & more)				
2019	1435	0	0	135	1377	542	151	206	2.95	1.11		Base Year Count Data
2020	1533	0	0	142	1446	581	161	230	3.20	1.20		
2021	1637	0	0	149	1518	622	172	257	3.47	1.30		
2022	1749	0	0	156	1594	667	183	286	3.77	1.41		
2023	1868	0	0	164	1674	714	195	320	4.09	1.53		The tentative construction traffic during construction period of 3 years (2023-2025)
2024	1967	0	0	172	1757	752	206	346	4.36	1.64		
2025	2072	0	0	181	1845	791	217	375	4.65	1.74	1.74	
2026	2183	0	0	190	1938	833	229	407	4.96	1.86	3.6	The project shall be opened to traffic in Year 2026. Considering design period of 20 years till Year 2045 design lane traffic loading is estimated accordingly
2027	2299	0	0	199	2034	876	242	441	5.29	1.98	5.6	
2028	2421	0	0	209	2136	922	255	477	5.64	2.12	7.7	
2029	2542	0	0	220	2243	968	268	509	5.97	2.24	9.9	
2030	2670	0	0	231	2355	1017	281	542	6.31	2.37	12.3	
2031	2803	0	0	242	2473	1068	295	578	6.67	2.50	14.8	
2032	2943	0	0	255	2597	1121	310	616	7.06	2.65	17.5	
2033	3090	0	0	267	2726	1177	325	656	7.47	2.80	20.3	
2034	3245	0	0	281	2863	1236	342	693	7.86	2.95	23.2	
2035	3407	0	0	295	3006	1298	359	731	8.27	3.10	26.3	
2036	3577	0	0	309	3156	1363	377	772	8.71	3.27	29.6	
2037	3756	0	0	325	3314	1431	395	814	9.17	3.44	33.0	
2038	3944	0	0	341	3480	1502	415	860	9.65	3.62	36.6	
2039	4141	0	0	358	3654	1577	436	903	10.13	3.80	40.4	
2040	4348	0	0	376	3836	1656	458	948	10.64	3.99	44.4	
2041	4566	0	0	395	4028	1739	481	995	11.17	4.19	48.6	
2042	4794	0	0	415	4229	1826	505	1045	11.73	4.40	53.0	
2043	5034	0	0	435	4441	1917	530	1097	12.32	4.62	57.6	
2044	5286	0	0	457	4663	2013	556	1152	12.93	4.85	62.5	
2045	5550	0	0	480	4896	2114	584	1210	13.58	5.09	67.6	

Annexure 2-2

Axle Load Survey for Bakarpur Manikpur Road Project

Name of road: SH74 Bakarpur Manikpur Road Project
 Location: Amritpur
 Direction of traffic flow: Both Side

Date: 19-06-2019
 Weather: Summer
 Direction : Both

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
1	3T	27.85	55.12	51.49				N
2	1	10.00	12.65					Y
3	3T	43.05	70.33	18.68				N
4	1	6.42	10.00					Y
5	1	5.59	7.36					Y
6	3T	48.54	58.50	76.94				N
7	2	28.64	50.36					Y
8	1B	12.50	29.86					Y
9	1	5.79	5.54					Y
10	1B	29.72	39.77					Y
11	1B	16.67	30.74					Y
12	1	5.84	8.68					Y
13	2	39.62	42.71					Y
14	1	5.98	12.80					Y
15	1	7.11	6.08					Y
16	1	5.88	24.08					Y
17	1B	19.12	30.40					Y
18	1	5.84	10.69					Y
19	1	15.35	19.66					Y
20	1	9.95	7.21					Y
21	1	4.95	2.94					Y
22	1	5.49	8.83					Y
23	1	4.07	2.89					Y
24	1	5.39	24.08					Y
25	1	7.01	10.35					Y
26	1	5.79	9.17					Y
27	1	5.69	12.45					Y
28	1	8.92	14.96					Y
29	1	5.54	7.21					Y
30	1	6.18	11.92					Y
31	1	5.30	7.94					Y
32	1	18.44	24.32					Y
33	1	5.44	7.88					Y
34	1	4.17	26.33					Y
35	1B	29.73	40.94					Y
36	1	7.75	10.98					Y
37	1	10.00	14.82					Y
38	1	7.45	16.72					Y
39	2B	29.72	58.89					Y
40	1	2.94	14.07					Y
41	1	3.53	4.51					Y
42	2	21.62	38.64					Y
43	2	19.03	41.29					Y
44	4T	63.75	15.20	76.49	74.44			N
45	2	30.25	62.37					Y
46	2	21.77	58.25					Y
47	3T	27.85	84.73	80.81				N
48	2	12.80	19.91					Y
49	3T	28.83	40.85	36.87				N
50	2	22.46	38.64					Y
51	2	23.05	45.60					Y
52	2	24.13	41.29					Y
53	2	28.83	55.80					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
54	2	31.97	63.26					Y
55	3T	28.54	41.29	38.64				N
56	2	28.83	42.07					Y
57	2	28.88	32.27					Y
58	2	22.07	48.35					Y
59	3T	28.54	55.31	51.09				N
60	2	28.83	65.12					Y
61	3T	41.97	82.38	84.98				N
62	4T	27.95	64.14	65.56	72.87			N
63	2	32.95	54.33					Y
64	2	28.83	58.45					Y
65	2	27.07	41.29					Y
66	2	20.99	30.60					Y
67	5T	34.23	32.76	85.12	81.30			N
68	2	41.29	87.67					Y
69	2	15.35	44.52					Y
70	2	19.03	55.80					Y
71	2	29.08	91.79					Y
72	2	28.83	63.26					Y
73	2	18.04	29.03					Y
74	2	18.39	48.64					Y
75	2	19.12	25.99					Y
76	2	19.07	31.82					Y
77	2	26.87	54.04					Y
78	3T	27.26	36.68	37.71				N
79	2	33.54	32.76					Y
80	2	35.40	84.63					Y
81	1	5.30	8.43					Y
82	3T	22.80	16.77	17.26				N
83	2	19.91	28.64					Y
84	3T	23.14	18.14	14.42				N
85	2	14.42	23.93					Y
86	2	21.97	31.77					Y
87	2	23.34	47.37					Y
88	2	22.16	49.23					Y
89	2	4.95	11.43					Y
90	2	8.63	13.93					Y
91	2	23.88	40.70					Y
92	2	19.71	33.83					Y
93	2	17.95	50.80					Y
94	2	25.30	43.84					Y
95	2	22.36	32.17					Y
96	2	20.69	44.33					Y
97	1	5.00	7.16					Y
98	1	3.33	6.96					Y
99	2	21.67	22.75					Y
100	2	19.37	27.70					Y
101	4T	21.28	14.86	29.03	25.79			N
102	2	18.39	22.90					Y
103	3T	20.99	18.78	21.82				N
104	3T	25.45	41.29	42.07				N
105	3T	21.28	44.08	45.31				N
106	2	33.49	43.40					Y
107	2	16.97	38.15					Y
108	2	30.60	38.64					Y
109	2	9.95	12.95					Y
110	1	13.97	11.67					Y
111	1	5.93	7.94					Y
112	1	18.14	30.60					Y
113	2	12.45	37.95					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
114	3T	20.69	43.35	41.68				N
115	1	9.86	17.26					Y
116	1	16.87	29.54					Y
117	3T	26.68	47.17	44.28				N
118	2	19.76	36.48					Y
119	3T	36.48	82.48	63.84				N
120	2	7.94	13.44					Y
121	2	47.56	49.23					Y
122	1	17.46	37.46					Y
123	2	16.77	25.41					Y
124	1	7.94	11.96					Y
125	4T	46.39	14.96	56.29	99.16			N
126	2	37.71	70.71					Y
127	2	21.67	41.34					Y
128	2	7.94	14.91					Y
129	2	27.56	47.22					Y
130	1	6.96	10.89					Y
131	3T	29.57	72.77	59.04				N
132	2	17.85	64.43					Y
133	2	28.54	47.22					Y
134	1	8.63	14.22					Y
135	2	26.63	73.70					Y
136	2	26.28	46.24					Y
137	2	28.24	49.72					Y
138	2	26.92	60.90					Y
139	2	19.32	23.68					Y
140	1	24.66	37.66					Y
141	2	18.34	41.97					Y
142	2	21.28	44.67					Y
143	2	34.13	49.18					Y
144	3T	45.16	78.55	66.83				N
145	3T	46.24	54.62	47.22				N
146	1	9.51	10.98					Y
147	1	8.04	10.00					Y
148	1	6.57	9.41					Y
149	2	14.81	22.16					Y
150	1	6.57	12.45					Y
151	2	20.69	36.09					Y
152	2	24.22	59.58					Y
153	1	6.67	9.61					Y
154	2	26.18	53.45					Y
155	1	7.06	9.95					Y
156	2	20.74	26.87					Y
157	2	18.39	27.75					Y
158	2	8.53	10.00					Y
159	3T	26.92	44.92	38.64				N
160	2	16.82	28.15					Y
161	2	17.36	34.52					Y
162	2	12.85	27.66					Y
163	5	42.42	47.76	30.30	72.38	66.88		N
164	2	26.18	44.82					Y
165	2	22.46	36.74					Y
166	2	17.46	33.54					Y
167	2	17.85	39.33					Y
168	1	15.89	30.70					Y
169	2	14.22	20.50					Y
170	2	14.81	20.74					Y
171	3T	17.85	59.63	51.29				N
172	2	27.56	37.41					Y
173	3T	25.65	37.71	53.10				N

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
174	2	27.56	54.67					Y
175	2	17.02	42.12					Y
176	4T	21.67	24.91	19.76	18.34			N
177	4T	21.38	24.32	18.83	18.83			N
178	4T	21.72	23.34	19.32	18.44			N
179	2	20.99	25.69					Y
180	2	24.13	26.87					Y
181	2	21.87	27.56					Y
182	4T	21.97	29.57	44.72	54.13			N
183	1	9.95	12.06					Y
184	2	19.07	28.54					Y
185	2	20.64	36.73					Y
186	2	13.78	15.50					Y
187	2	28.15	64.04					Y
188	2	28.73	68.75					Y
189	2	25.89	27.90					Y
190	2	27.95	56.68					Y
191	2	21.28	35.01					Y
192	2	27.36	32.90					Y
193	2	35.99	54.13					Y
194	2	33.83	44.82					Y
195	2	37.07	77.13					Y
196	2	29.62	61.20					Y
197	2	33.44	47.76					Y
198	2	17.16	39.03					Y
199	2	31.92	39.33					Y
200	2	36.58	44.82					Y
201	4T	18.34	27.85	31.73	29.60			N
202	2	34.42	63.30					Y
203	2	34.57	59.14					Y
204	2	25.30	44.43					Y
205	1	19.03	31.48					Y
206	2	37.41	6.37					Y
207	2	35.60	57.03					Y
208	2	29.52	41.88					Y
209	2	29.62	39.33					Y
210	1	16.38	16.97					Y
211	3T	29.52	31.77	29.57				N
212	2	23.00	95.32					Y
213	2	11.33	21.28					Y
214	2	29.52	40.01					Y
215	2	35.01	51.29					Y
216	2	25.79	26.58					Y
217	2	29.57	31.87					Y
218	2	19.76	28.54					Y
219	2	18.49	21.82					Y
220	2	11.23	11.47					Y
221	2	21.97	19.42					Y
222	2	15.10	19.91					Y
223	2	19.42	52.37					Y
224	1	5.69	17.55					Y
225	1	9.95	15.30					Y
226	2	24.32	21.97					Y
227	2	21.97	26.97					Y
228	2	24.71	47.17					Y
229	2	21.28	42.66					Y
230	2	26.43	43.25					Y
231	2	12.95	26.97					Y
232	2	30.45	34.42					Y
233	3T	29.52	55.51	54.33				N

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
234	2	25.69	48.35					Y
235	4T	58.94	63.84	66.59	67.28			N
236	1	4.90	10.49					Y
237	1	5.64	14.61					Y
238	2	25.89	103.37					Y
239	2	26.28	43.45					Y
240	2	16.48	24.62					Y
241	2	25.20	32.85					Y
242	2	22.26	31.77					Y
243	2	37.66	44.52					Y
244	1	6.42	15.25					Y
245	2	16.57	32.76					Y
246	2	16.48	13.24					Y
247	2	31.53	64.53					Y
248	3T	53.06	57.67	57.96				N
249	2	30.16	49.13					Y
250	2	33.83	49.13					Y
251	2	25.30	42.56					Y
252	2	11.67	20.10					Y
253	2	24.62	45.01					Y
254	3T	28.83	48.45	46.98				N
255	3T	29.52	52.96	51.09				N
256	2	22.07	45.01					Y
257	1	11.38	29.03					Y
258	2	12.16	31.48					Y
259	3T	31.48	84.73	72.87				N
260	1	5.30	10.98					Y
261	1	5.10	7.26					Y
262	4T	31.92	35.40	72.77	68.06			N
263	3T	28.98	64.19	60.90				N
264	2	28.83	64.82					Y
265	2	18.93	48.15					Y
266	2	24.03	55.31					Y
267	2	26.38	58.45					Y
268	3T	28.98	84.78	80.52				N
269	3T	28.73	70.71	68.06				N
270	2	26.38	65.22					Y
271	2	15.79	36.19					Y
272	3T	32.27	84.78	80.52				N
273	1	5.30	10.98					Y
274	2	26.92	64.82					Y
275	2	25.79	45.01					Y
276	2	28.88	64.14					Y
277	2	19.42	35.75					Y
278	2	26.38	44.92					Y
279	2	31.48	71.49					Y
280	2	17.85	19.71					Y
281	2	13.58	15.10					Y
282	1	4.90	6.57					Y
283	1	3.14	8.68					Y
284	2	25.79	36.19					Y
285	2B	25.89	31.48					Y
286	2	19.96	15.99					Y
287	1	4.27	3.09					Y
288	1	6.18	6.18					Y
289	1	4.22	6.28					Y
290	1	4.85	3.09					Y
291	2	13.39	14.81					Y
292	1	4.95	2.94					Y
293	1	4.36	3.29					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
294	1	4.51	5.44					Y
295	1	7.21	7.55					Y
296	1	4.76	5.15					Y
297	2	17.31	16.92					Y
298	2B	25.45	37.36					Y
299	1B	15.54	23.24					Y
300	2	19.71	23.24					Y
301	2	19.32	21.77					Y
302	2	17.16	19.42					Y
303	1B	18.88	27.07					Y
304	1	6.77	13.73					Y
305	1	5.30	7.55					Y
306	1B	25.11	27.85					Y
307	2	14.42	16.67					Y
308	1	22.16	22.02					Y
309	2	17.75	21.67					Y
310	1	5.39	7.45					Y
311	1	3.82	2.40					Y
312	2	22.46	28.34					Y
313	3T	24.13	18.73	17.06				N
314	2	17.41	19.96					Y
315	1	4.41	2.60					Y
316	2	18.04	25.20					Y
317	1	10.89	15.59					Y
318	3T	18.88	17.16	15.59				N
319	1	4.51	3.73					Y
320	3T	20.64	21.58	19.12				N
321	2	18.73	21.48					Y
322	2	21.18	25.60					Y
323	2	18.39	23.00					Y
324	1	4.41	3.33					Y
325	2	16.23	17.55					Y
326	2	18.04	19.22					Y
327	2	21.77	22.56					Y
328	4T	42.89	34.77	48.79	34.23			N
329	2	25.69	41.78					Y
330	1	5.93	10.44					Y
331	2	10.40	12.99					Y
332	2B	16.48	27.56					Y
333	2	18.83	17.06					Y
334	2	19.42	22.46					Y
335	1	4.17	8.38					Y
336	2	12.55	12.50					Y
337	1	4.02	2.55					Y
338	3T	17.90	22.02	14.51				N
339	1	5.30	6.67					Y
340	2	18.54	19.42					Y
341	2	17.55	19.32					Y
342	2	18.54	20.59					Y
343	2	12.95	15.45					Y
344	2	12.55	14.42					Y
345	2	18.78	20.01					Y
346	3T	17.85	18.49	14.91				N
347	2	18.44	19.42					Y
348	2	18.83	19.42					Y
349	2	9.46	12.60					Y
350	2	16.08	18.98					Y
351	2	19.07	18.44					Y
352	1	5.69	8.73					Y
353	2	18.04	20.99					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
354	1	4.71	6.23					Y
355	1	5.54	5.98					Y
356	2	18.09	22.02					Y
357	2	17.95	20.06					Y
358	2	21.04	28.93					Y
359	2	18.93	17.85					Y
360	1	4.51	4.02					Y
361	1	5.25	5.79					Y
362	1	3.92	3.73					Y
363	2	11.08	12.50					Y
364	1	4.22	3.43					Y
365	2	25.01	54.53					Y
366	1B	17.70	32.95					Y
367	3T	18.44	18.24	16.87				N
368	2B	16.38	27.85					Y
369	1	4.71	21.62					Y
370	2	17.75	19.32					Y
371	2B	20.25	38.30					Y
372	1	5.34	5.20					Y
373	1	4.61	5.88					Y
374	1	5.00	5.98					Y
375	1	3.87	3.48					Y
376	1	10.35	18.49					Y
377	2	14.12	15.40					Y
378	3T	20.64	15.64	15.40				N
379	1	3.82	2.01					Y
380	2	19.22	17.26					Y
381	4T	22.65	22.07	16.57	15.89			N
382	1	6.18	7.94					Y
383	3T	32.85	45.90	45.60				N
384	2	18.83	20.89					Y
385	1	8.24	7.36					Y
386	1	4.85	6.91					Y
387	2	19.03	17.46					Y
388	2	18.58	21.53					Y
389	2	15.94	15.79					Y
390	2	18.73	19.12					Y
391	3T	28.73	55.80	51.09				N
392	2	21.97	41.43					Y
393	2	12.11	14.12					Y
394	2	14.71	14.42					Y
395	4T	28.93	26.77	26.28	25.15			N
396	1	8.14	7.36					Y
397	2	11.33	14.91					Y
398	2	9.02	9.22					Y
399	2	16.28	15.89					Y
400	5	23.88	27.26	23.34	37.66	39.42		N
401	2	16.77	18.83					Y
402	3T	18.83	17.55	16.08				N
403	1	4.12	5.39					Y
404	1	4.95	6.77					Y
405	2	16.87	19.07					Y
406	4T	16.08	17.55	17.46	16.38			N
407	4T	14.81	17.06	18.83	18.14			N
408	3T	16.87	15.40	16.28				N
409	2	14.47	16.33					Y
410	2	9.22	7.55					Y
411	2	8.92	9.22					Y
412	1	6.86	7.06					Y
413	2	13.93	16.48					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
414	3T	13.93	25.99	26.68				N
415	2	8.92	8.73					Y
416	1	5.10	5.59					Y
417	2	19.17	15.10					Y
418	5T	31.77	43.59	10.25	39.13	38.74		N
419	2	19.03	16.77					Y
420	2	15.30	14.61					Y
421	3T	17.06	16.18	15.30				N
422	2	19.03	18.54					Y
423	2	17.11	15.10					Y
424	2	13.83	14.07					Y
425	2	27.26	46.53					Y
426	4T	13.97	12.85	15.89	13.93			N
427	2	19.03	16.97					Y
428	2	19.03	16.18					Y
429	2	16.08	11.13					Y
430	3T	15.10	16.87	18.14				N
431	3T	13.04	16.18	15.50				N
432	2	14.51	14.12					Y
433	3T	19.03	14.22	14.32				N
434	3T	28.88	35.11	33.25				N
435	2	10.05	13.39					Y
436	2	11.87	14.02					Y
437	2	13.19	15.50					Y
438	2	15.59	18.19					Y
439	2	12.45	13.83					Y
440	3T	16.57	18.04	17.16				N
441	2	19.03	15.10					Y
442	3T	17.16	13.73	13.93				N
443	2	15.74	15.54					Y
444	2	15.69	15.45					Y
445	2	12.21	13.44					Y
446	2	13.63	14.61					Y
447	1	6.57	5.88					Y
448	2	15.40	17.02					Y
449	2	14.22	17.75					Y
450	2	13.83	14.96					Y
451	2	12.99	15.40					Y
452	2	10.10	12.99					Y
453	1	4.95	5.05					Y
454	1	7.21	6.82					Y
455	2	9.91	10.74					Y
456	2	16.77	14.66					Y
457	2	11.28	10.05					Y
458	2	10.40	11.87					Y
459	2	14.32	12.99					Y
460	2	13.73	15.05					Y
461	2	13.39	13.24					Y
462	2	11.23	11.92					Y
463	1	4.81	6.47					Y
464	2	14.61	13.14					Y
465	2	8.73	6.37					Y
466	4T	15.20	11.23	14.81	12.99			N
467	2	12.01	13.53					Y
468	2	10.35	11.72					Y
469	5T	13.53	20.40	22.41	21.23	21.23		N
470	2	11.47	12.95					Y
471	2	12.85	16.23					Y
472	3T	19.12	17.95	16.67				N
473	2	16.62	18.58					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
474	2	15.50	28.15					Y
475	2	10.25	12.80					Y
476	2	9.91	12.31					Y
477	2	20.45	14.81					Y
478	2	14.17	16.97					Y
479	2	13.97	13.63					Y
480	2	14.81	15.79					Y
481	1	3.48	2.75					Y
482	4T	19.03	14.56	27.41	25.89			N
483	3T	17.11	19.03	15.15				N
484	2	9.22	13.34					Y
485	3T	19.07	14.22	12.31				N
486	2B	28.83	41.29					Y
487	1	7.06	7.65					Y
488	1	10.84	12.50					Y
489	2	13.34	13.44					Y
490	2	8.92	8.73					Y
491	2	20.99	35.50					Y
492	2	9.22	8.92					Y
493	2	12.95	13.68					Y
494	2	9.91	9.27					Y
495	2	13.14	12.16					Y
496	2	12.65	12.95					Y
497	2	11.87	15.50					Y
498	3T	18.73	17.75	16.87				N
499	2	13.83	13.53					Y
500	1	13.93	9.22					Y
501	3T	13.97	11.43	11.18				N
502	2	20.84	18.14					Y
503	1	4.56	3.09					Y
504	2	22.21	17.90					Y
505	1	7.11	20.25					Y
506	2	21.43	19.03					Y
507	2	21.23	23.19					Y
508	3T	21.23	18.98	17.90				N
509	3T	22.21	20.25	19.07				N
510	4T	34.77	18.73	51.34	45.46			N
511	3T	22.02	19.42	17.31				N
512	2	20.99	19.32					Y
513	4T	33.98	21.23	67.33	63.01			N
514	2	19.27	15.94					Y
515	3T	21.23	19.86	17.85				N
516	1	6.82	25.15					Y
517	5	38.49	36.92	28.83	66.93	59.09		N
518	2	19.27	16.92					Y
519	2	20.79	18.88					Y
520	1	4.36	3.38					Y
521	2	19.32	17.90					Y
522	2	19.07	20.01					Y
523	2	20.25	18.88					Y
524	2	19.37	17.11					Y
525	2	21.23	22.65					Y
526	3T	21.23	20.20	17.90				N
527	2	17.90	31.14					Y
528	2B	16.33	23.19					Y
529	2	18.29	16.92					Y
530	2	20.25	18.88					Y
531	2	19.42	19.71					Y
532	4T	20.20	25.74	23.83	27.75			N
533	2	21.23	19.27					Y

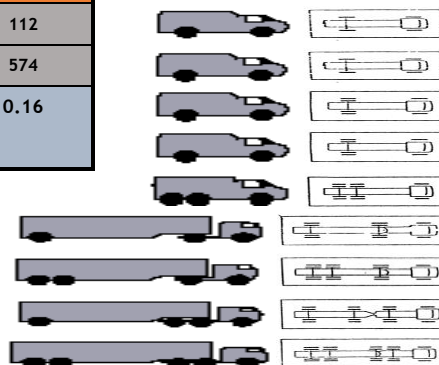
Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
534	2	13.39	25.40					Y
535	2	12.41	13.39					Y
536	2	23.19	39.96					Y
537	2	18.88	16.92					Y
538	2	24.17	56.15					Y
539	2	23.19	57.13					Y
540	2	9.66	20.30					Y
541	2	21.23	19.47					Y
542	2	18.98	18.44					Y
543	2	24.17	41.83					Y
544	2	17.31	15.99					Y
545	2	21.23	48.64					Y
546	3T	26.23	23.88	23.19				N
547	2	19.07	23.19					Y
548	2	23.19	20.74					Y
549	2	20.01	18.88					Y
550	2	20.10	23.19					Y
551	3T	40.85	73.80	76.15				N
552	2	28.10	55.75					Y
553	2	16.18	17.26					Y
554	2	13.34	18.14					Y
555	2	11.92	18.14					Y
556	2	11.28	13.88					Y
557	3T	16.18	14.17	15.10				N
558	1	16.57	18.98					Y
559	1	14.22	18.54					Y
560	4T	43.59	29.03	65.22	48.35			N
561	2	16.18	19.27					Y
562	2	15.10	16.92					Y
563	2	11.13	19.52					Y
564	4T	20.10	17.85	23.83	18.88			N
565	3T	13.24	20.64	17.02				N
566	2	14.07	15.59					Y
567	2	11.77	14.07					Y
568	2	12.26	14.42					Y
569	2	13.43	15.05					Y
570	1	13.34	12.01					Y
571	1	11.14	15.05					Y
572	4T	16.18	18.68	18.19	20.84			N
573	3T	25.11	14.10	17.16				N
574	2	13.63	15.05					Y
575	2	14.76	16.08					Y
576	2	20.58	22.46					Y
577	2	17.41	17.46					Y
578	4T	20.89	15.73	20.58	13.53			N
579	2	13.09	18.63					Y
580	2	16.18	18.14					Y
581	1	4.66	5.30					Y
582	2	21.97	25.01					Y
583	2	21.09	24.27					Y
584	2	9.22	13.93					Y
585	2	12.06	12.26					Y
586	2	10.74	12.60					Y
587	2	15.54	18.83					Y
588	4T	9.62	13.58	18.14	21.09			N
589	2	15.51	16.50					Y
590	2	17.31	19.12					Y
591	3T	22.21	28.70	25.99				N
592	3T	18.24	28.05	30.11				N
593	3T	20.42	30.23	31.71				N

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
594	3T	19.73	22.90	27.77				N
595	2	15.73	18.68					Y
596	2	17.55	15.05					Y
597	2	23.68	41.88					Y
598	1	10.84	24.03					Y
599	2	14.27	10.84					Y
600	1	20.10	19.96					Y
601	2	7.85	10.69					Y
602	2	9.86	14.22					Y
603	3T	22.70	14.12	19.12				N
604	2	18.04	14.61					Y
605	2	19.07	17.90					Y
606	2	20.06	20.74					Y
607	2	15.84	21.67					Y
608	2	18.34	17.31					Y
609	2	19.03	17.55					Y
610	2	13.34	15.79					Y
611	2	18.54	22.41					Y
612	2	19.07	17.85					Y
613	2	12.65	14.51					Y
614	2	13.93	20.99					Y
615	4T	22.02	18.04	19.37	18.04			N
616	2	27.02	49.23					Y
617	2	17.75	22.65					Y
618	3T	38.69	53.84	51.09				N
619	2	18.73	15.89					Y
620	2	20.01	18.98					Y
621	2	18.54	17.06					Y
622	2	19.07	22.46					Y
623	2	17.80	20.30					Y
624	2	16.97	19.07					Y
625	2	24.42	41.58					Y
626	2	16.77	15.15					Y
627	2	18.54	22.02					Y
628	2	17.95	19.27					Y
629	2	23.00	51.09					Y
630	2	22.02	19.61					Y
631	2	22.65	48.35					Y
632	2	19.22	18.83					Y
633	2	17.70	19.22					Y
634	2	18.73	17.55					Y
635	2	15.99	14.61					Y
636	2	21.23	35.94					Y
637	2	16.38	19.07					Y
638	2	18.44	16.13					Y
639	2	16.87	22.02					Y
640	2	20.50	41.58					Y
641	2	16.23	16.57					Y
642	2	17.41	17.16					Y
643	2	15.74	17.26					Y
644	2	12.41	14.12					Y
645	2	17.06	22.65					Y
646	2	16.28	17.51					Y
647	2	16.57	17.46					Y
648	2	15.89	18.34					Y
649	2	15.45	28.20					Y
650	2	17.06	18.93					Y
651	1	7.75	21.38					Y
652	2	16.57	19.17					Y
653	2	17.06	18.49					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
654	2	17.26	18.93					Y
655	3T	19.03	16.13	15.40				N
656	2	11.92	13.24					Y
657	2	17.46	19.07					Y
658	2	16.28	15.99					Y
659	2	17.06	16.52					Y
660	2	13.73	14.22					Y
661	2	16.03	14.61					Y
662	2	11.62	12.60					Y
663	2	10.10	9.27					Y
664	2	18.98	16.87					Y
665	2	14.61	11.18					Y
666	2	18.93	14.42					Y
667	4T	28.83	32.27	55.21	51.09			N
668	2	11.08	15.15					Y
669	2	18.09	21.97					Y
670	2	13.34	9.22					Y
671	2	18.04	15.10					Y
672	2	18.93	21.67					Y
673	2	15.15	16.57					Y
674	2	18.73	17.16					Y
675	2	12.26	9.27					Y
676	2	15.99	19.12					Y
677	1	4.32	3.14					Y
678	2	18.44	19.22					Y
679	3T	20.69	21.77	20.50				N
680	2	18.73	19.81					Y
681	2	18.54	19.32					Y
682	2	13.04	15.30					Y
683	3T	21.58	15.79	15.50				N
684	1	3.78	2.06					Y
685	3T	33.15	47.17	46.78				N
686	2	17.55	18.04					Y

ANALYSIS

Vehicle Type	No's	Axle Spacing	Total Nos.
1	130	< 4.5m	112
1B	9	> 4.5m	574
2	427	RATIO OF VEH. WITH SPACING LESS THAN 4.5m	0.16
2B	8		
3T	77		
3	0		
4T	29		
4	0		
5T	3		
5	3		
6T	0		
6	0		
4TT	0		
4TTT	0		
5TT	0		
5TTT	0		
TOTAL	686		



Vehicle Types:

- 1 - Single Axle Single Tyred LCV
- 1B - Single Axle Single Tyred Bus
- 2 - Single Axle Twin Tyred Trucks
- 2B - Single Axle Twin Tyred Bus
- 3T - Tandem Axle Twin Tyred Trucks
- 3 - 3 Axle Twin Tyred Trucks
- 4T - Multi Axle Twin Tyred Trucks
- 4 - Multi Axle Twin Tyred Trucks
- 5T, 5, 6T - Multi axle twin tyred Trucks

Axle Load Survey for Bakarpur Manikpur Road Project

Name of road: SH74 Bakarpur Manikpur Road Project

Date: 19-06-2019

Location: Basant, Jahanabad

Weather: Summer

Direction of traffic flow: Both Side

Direction : Both

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
1	1	5.25	7.11					Y
2	2	47.71	100.86					Y
3	2	40.65	93.41					Y
4	1	7.31	6.96					Y
5	2B	29.08	47.66					Y
6	2	44.77	78.80					Y
7	3T	25.74	15.54	18.04				N
8	2	47.71	93.31					Y
9	1	4.71	4.36					Y
10	2B	16.38	23.88					Y
11	2	21.23	57.17					Y
12	1	5.59	8.58					Y
13	1	8.88	7.45					Y
14	2	13.39	11.77					Y
15	1	11.28	34.28					Y
16	2	24.17	55.75					Y
17	2	40.85	71.25					Y
18	2	47.71	74.19					Y
19	2	38.64	8.78					Y
20	2	42.66	89.24					Y
21	2	27.36	51.93					Y
22	2	23.19	49.72					Y
23	2	27.12	55.26					Y
24	2	31.53	44.38					Y
25	2	25.69	44.62					Y
26	1	9.37	7.80					Y
27	2	35.80	71.05					Y
28	2	28.05	20.84					Y
29	2	37.90	82.04					Y
30	2	23.19	26.14					Y
31	2	40.80	69.09					Y
32	2	18.29	36.14					Y
33	2	41.78	70.27					Y
34	2	24.91	54.62					Y
35	2	24.09	49.67					Y
36	1	5.98	19.52					Y
37	5T	25.15	20.30	25.65	34.47	28.88		N
38	1	6.96	16.03					Y
39	4T	48.69	20.45	77.77	76.79			N
40	3T	29.27	61.54	59.23				N
41	2	18.00	35.50					Y
42	1	4.90	4.81					Y
43	2	25.15	48.40					Y
44	1	5.54	7.75					Y
45	2	14.37	28.10					Y
46	2	37.71	58.35					Y
47	2	12.75	62.03					Y
48	1	10.25	24.96					Y
49	2	19.42	20.45					Y
50	1	14.02	28.10					Y
51	2	32.61	66.44					Y
52	1	8.92	16.18					Y
53	2	21.23	55.02					Y
54	2	35.17	72.82					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
55	1	8.14	9.86					Y
56	2	29.27	55.16					Y
57	2	28.69	50.26					Y
58	2	27.70	66.20					Y
59	2	26.28	30.79					Y
60	2	26.72	34.91					Y
61	2	16.28	30.06					Y
62	3T	30.99	49.53	47.07				N
63	4T	24.13	14.81	19.12	15.50			N
64	2	32.76	53.35					Y
65	2	28.10	57.76					Y
66	2	34.96	59.48					Y
67	2	42.12	65.46					Y
68	2	9.76	11.62					Y
69	4T	19.61	15.94	19.12	16.23			N
70	2	28.59	51.63					Y
71	4T	23.24	19.61	18.49	15.30			N
72	2	35.89	58.99					Y
73	2	17.90	26.14					Y
74	2	23.19	51.63					Y
75	2	21.82	52.86					Y
76	3T	24.17	21.53	16.48				N
77	2	20.89	60.51					Y
78	2	26.87	65.41					Y
79	2	21.87	35.70					Y
80	3T	58.11	61.78	59.33				N
81	1	12.65	17.06					Y
82	4T	51.39	21.09	109.35	110.82			N
83	2	45.41	97.78					Y
84	2	28.83	52.57					Y
85	1	5.74	10.89					Y
86	2	37.27	93.26					Y
87	4T	46.58	28.44	102.97	98.07			N
88	3T	42.17	121.61	113.37				N
89	1	5.30	9.61					Y
90	4T	48.05	13.73	104.93	101.01			N
91	1	5.84	17.06					Y
92	2	35.80	8.34					Y
93	1	10.59	21.09					Y
94	1	5.00	8.73					Y
95	1	6.03	18.39					Y
96	1	6.67	10.10					Y
97	2	18.39	21.53					Y
98	1	6.18	10.79					Y
99	2	24.22	46.34					Y
100	1	6.57	6.72					Y
101	1	7.75	16.82					Y
102	1	7.16	13.58					Y
103	2	15.54	34.62					Y
104	1	6.13	7.01					Y
105	2	48.40	109.35					Y
106	1	5.30	14.32					Y
107	3T	66.54	143.18	123.76				N
108	1	5.30	10.59					Y
109	1	5.30	6.08					Y
110	1	5.00	5.84					Y
111	4T	43.45	22.75	68.31	61.44			N
112	1	5.44	5.69					Y
113	1	4.17	3.14					Y
114	5	31.04	62.18	87.67	102.97			N

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
115	4T	63.99	29.27	82.62	81.15			N
116	2	41.83	94.39					Y
117	3T	47.71	90.86	84.59				N
118	2	39.03	93.41					Y
119	2	37.90	63.01					Y
120	1	6.28	19.76					Y
121	1	5.49	24.71					Y
122	2	42.27	72.82					Y
123	2	35.50	94.78					Y
124	2	32.12	55.16					Y
125	1	12.65	17.90					Y
126	3T	24.17	19.07	17.75				N
127	1	5.88	3.97					Y
128	1	3.97	3.09					Y
129	2	48.69	108.22					Y
130	2	43.10	104.44					Y
131	2	44.13	101.75					Y
132	3T	21.23	19.86	18.88				N
133	3T	28.39	38.35	37.51				N
134	2	29.57	68.55					Y
135	2	42.02	122.24					Y
136	1	5.39	18.54					Y
137	1	8.38	17.65					Y
138	1	44.67	93.80					Y
139	1	6.13	7.80					Y
140	1	6.13	13.83					Y
141	1	6.72	16.03					Y
142	1	4.90	10.40					Y
143	1	5.59	6.91					Y
144	1	5.30	7.21					Y
145	1	5.69	7.55					Y
146	2	21.23	58.60					Y
147	1	5.54	21.53					Y
148	2	40.85	73.21					Y
149	2B	24.17	36.68					Y
150	2	18.29	32.02					Y
151	2	24.17	66.93					Y
152	2	22.16	54.53					Y
153	4T	46.73	47.42	87.63	86.01			N
154	1	6.33	21.87					Y
155	3T	63.01	87.23	72.82				N
156	2	23.88	27.66					Y
157	3T	55.16	45.36	38.49				N
158	1	6.72	18.29					Y
159	2	43.98	85.57					Y
160	2	23.78	53.20					Y
161	5	22.21	19.27	19.03	24.17	17.11		N
162	3T	46.73	89.49	85.96				N
163	1	6.13	22.65					Y
164	3T	46.88	107.19	104.25				N
165	2	42.42	80.37					Y
166	3T	44.97	69.14	64.97				N
167	2	34.96	62.62					Y
168	1	6.52	21.23					Y
169	2	23.19	51.09					Y
170	1	6.13	5.59					Y
171	1	9.51	8.29					Y
172	2	46.34	72.57					Y
173	2	41.68	67.91					Y
174	2	41.97	81.05					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
175	2	27.70	21.09					Y
176	2	40.45	72.82					Y
177	2	23.63	57.13					Y
178	2	34.91	58.11					Y
179	1	5.34	22.41					Y
180	1	6.77	15.64					Y
181	1	6.33	15.89					Y
182	1	5.54	8.38					Y
183	1	8.97	8.83					Y
184	1	5.74	8.73					Y
185	2	42.95	81.74					Y
186	2	42.17	92.23					Y
187	1	5.30	21.58					Y
188	1	5.64	7.31					Y
189	3T	35.55	50.90	46.34				N
190	2	33.98	72.82					Y
191	5T	43.40	47.71	27.12	66.49	63.99		N
192	1	7.01	22.41					Y
193	2B	33.00	44.38					Y
194	1	7.65	12.36					Y
195	4T	26.87	18.88	16.33	19.27			N
196	2B	27.12	33.98					Y
197	1	4.07	6.72					Y
198	2	19.91	38.74					Y
199	2	21.33	44.13					Y
200	2	20.01	42.76					Y
201	2	18.63	41.19					Y
202	2	32.46	99.05					Y
203	2	31.48	47.56					Y
204	2	35.31	70.12					Y
205	2	35.55	84.34					Y
206	4T	19.86	23.14	18.44	20.59			N
207	4T	19.37	21.58	17.16	20.10			N
208	3T	19.17	21.97	18.63				N
209	2	32.85	91.21					Y
210	2	18.14	28.20					Y
211	2	21.58	46.58					Y
212	2	22.65	102.97					Y
213	2	20.59	67.37					Y
214	2	20.10	47.56					Y
215	1	20.79	16.18					Y
216	1	3.43	6.96					Y
217	2	20.10	46.88					Y
218	3T	46.63	103.37	85.03				N
219	2	33.54	50.60					Y
220	1	9.22	8.53					Y
221	3T	44.52	113.96	85.81				N
222	2	44.72	84.73					Y
223	4T	39.82	34.52	95.72	124.25			N
224	2	37.76	81.79					Y
225	2	45.31	73.36					Y
226	1	5.49	18.14					Y
227	3T	35.31	50.02	47.07				N
228	2	12.75	17.46					Y
229	2	16.48	43.15					Y
230	1	7.36	11.77					Y
231	2	6.03	21.09					Y
232	2	26.72	60.51					Y
233	1	6.77	12.45					Y
234	2	21.58	93.17					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
235	2	21.09	42.66					Y
236	2	25.50	39.23					Y
237	2	26.48	47.56					Y
238	1	12.95	47.76					Y
239	1	23.44	71.08					Y
240	2	26.97	56.29					Y
241	1	7.36	19.32					Y
242	2	12.26	64.14					Y
243	2	24.76	22.95					Y
244	2	19.48	20.41					Y
245	3T	39.38	44.00	42.76				N
246	2	20.01	48.30					Y
247	2	17.06	43.35					Y
248	2	27.07	45.70					Y
249	2	23.93	72.77					Y
250	2	32.95	77.08					Y
251	3T	18.88	49.38	45.85				N
252	2	34.81	91.99					Y
253	2	10.69	13.53					Y
254	1	16.57	30.30					Y
255	1	22.07	45.55					Y
256	1	24.13	48.59					Y
257	3T	24.71	20.10	20.69				N
258	1	4.61	9.81					Y
259	3T	27.90	52.52	28.73				N
260	2	27.26	67.47					Y
261	2	40.01	70.41					Y
262	2	21.82	48.50					Y
263	2	18.98	35.21					Y
264	2	16.67	43.05					Y
265	2	40.80	22.80					Y
266	2	29.27	79.68					Y
267	2	27.70	62.52					Y
268	2	24.08	56.10					Y
269	2	31.28	28.69					Y
270	4T	48.99	23.39	115.53	113.52			N
271	1	5.54	7.01					Y
272	2	21.43	48.69					Y
273	1	8.04	18.24					Y
274	2	33.98	79.53					Y
275	2	13.39	25.60					Y
276	2	8.88	12.16					Y
277	2	43.30	108.27					Y
278	5T	61.54	69.09	31.77	124.01	101.50		N
279	2	15.59	15.79					Y
280	1	5.59	7.45					Y
281	2	24.47	7.45					Y
282	2	20.55	27.46					Y
283	1	8.88	9.22					Y
284	3T	28.59	54.38	52.42				N
285	2	20.84	51.63					Y
286	5T	60.07	69.63	28.83	110.82	100.52		N
287	3T	47.32	106.90	102.48				N
288	1	5.59	4.27					Y
289	2	18.39	27.61					Y
290	1	9.41	8.09					Y
291	2	23.78	56.54					Y
292	2	40.85	89.49					Y
293	2	27.80	56.19					Y
294	1	5.15	11.43					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
295	3T	24.71	40.50	40.55				N
296	2	16.92	23.68					Y
297	1	6.96	8.97					Y
298	1	6.03	9.12					Y
299	3T	53.89	66.98	68.85				N
300	2	9.51	11.03					Y
301	1	7.16	9.02					Y
302	2	24.91	35.11					Y
303	1	7.40	9.41					Y
304	2	18.04	19.91					Y
305	1	8.14	19.03					Y
306	1	5.98	6.18					Y
307	2	21.97	23.63					Y
308	1	5.93	10.35					Y
309	2	22.26	22.85					Y
310	2	18.14	20.30					Y
311	2	19.32	20.40					Y
312	1	5.30	6.47					Y
313	2	9.27	8.04					Y
314	2	10.05	13.83					Y
315	1	8.14	10.05					Y
316	2	20.01	19.76					Y
317	2	21.92	22.02					Y
318	3T	39.57	69.09	63.50				N
319	3T	37.51	60.26	55.95				N
320	3T	33.79	69.29	66.79				N
321	2	14.42	19.27					Y
322	1	7.16	7.40					Y
323	1	5.25	6.52					Y
324	2	17.26	16.33					Y
325	1	9.61	12.45					Y
326	2	14.51	15.00					Y
327	2	10.05	10.64					Y
328	1	5.49	5.20					Y
329	2	16.97	21.43					Y
330	1	6.72	9.56					Y
331	2	12.16	23.24					Y
332	1	6.03	8.34					Y
333	2	16.72	14.02					Y
334	2	20.99	21.53					Y
335	3T	17.95	24.22	19.79				N
336	2	17.95	18.34					Y
337	2	12.45	13.83					Y
338	2	9.95	21.72					Y
339	2	12.99	14.96					Y
340	2	10.05	21.28					Y
341	2	13.78	16.97					Y
342	2	13.83	16.08					Y
343	2	18.73	20.89					Y
344	1	5.59	5.98					Y
345	2	16.77	17.75					Y
346	1	5.30	6.37					Y
347	1	7.16	16.18					Y
348	2	21.82	19.71					Y
349	2	13.83	14.91					Y
350	4T	17.85	20.84	27.26	29.81			N
351	3T	27.75	39.33	35.70				N
352	1	5.69	5.88					Y
353	3T	19.86	22.26	19.03				N
354	2	15.00	17.95					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
355	1	8.09	7.75					Y
356	2	18.88	20.01					Y
357	1	5.34	6.03					Y
358	2	10.54	12.06					Y
359	2	14.91	13.44					Y
360	2	13.39	15.94					Y
361	2	17.65	15.84					Y
362	1	4.51	3.33					Y
363	2	14.47	17.75					Y
364	2	18.34	20.01					Y
365	3T	23.93	20.20	18.78				N
366	3T	22.65	19.32	18.14				N
367	2	17.75	22.07					Y
368	2	16.97	20.50					Y
369	1	3.97	6.72					Y
370	2	22.60	24.91					Y
371	2	12.16	15.50					Y
372	2	37.66	100.28					Y
373	1	7.99	7.01					Y
374	3T	23.68	21.72	24.76				N
375	2	18.44	13.09					Y
376	3T	18.34	19.71	18.54				N
377	2	19.32	20.40					Y
378	2	18.73	22.95					Y
379	2	18.54	23.63					Y
380	2	17.26	17.95					Y
381	2	19.27	19.03					Y
382	3T	23.83	29.22	24.91				N
383	3T	27.70	30.60	26.28				N
384	2	10.05	9.61					Y
385	1	5.10	4.02					Y
386	1	5.30	6.28					Y
387	1	4.12	6.62					Y
388	2	18.54	22.31					Y
389	2	21.38	18.54					Y
390	1	4.02	6.37					Y
391	2	13.97	14.17					Y
392	1	10.98	16.38					Y
393	2	12.85	16.87					Y
394	2	12.60	12.45					Y
395	3T	23.24	18.14	17.85				N
396	3T	37.86	69.43	65.17				N
397	2	10.54	19.32					Y
398	2	21.67	15.45					Y
399	1	6.96	6.28					Y
400	2	20.10	18.04					Y
401	2	13.97	25.35					Y
402	2	19.37	20.89					Y
403	1	3.82	4.61					Y
404	2	19.96	26.09					Y
405	2	17.26	28.54					Y
406	2	25.40	36.48					Y
407	1	4.85	5.39					Y
408	1	7.60	7.36					Y
409	2	20.30	44.72					Y
410	3T	41.29	47.60	43.65				N
411	2	22.36	24.22					Y
412	2	21.28	26.68					Y
413	2	16.48	28.64					Y
414	2	18.93	11.82					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
415	4T	30.79	35.01	59.04	54.23			N
416	4T	29.22	31.77	57.27	52.08			N
417	2	17.70	18.68					Y
418	2	17.51	15.50					Y
419	3T	37.36	46.14	43.35				N
420	2	18.24	17.16					Y
421	2	18.04	28.15					Y
422	5T	52.08	43.45	72.87	75.61	70.61		N
423	1	5.69	6.86					Y
424	2	16.38	19.56					Y
425	2	18.98	15.00					Y
426	2	13.44	10.98					Y
427	2	8.53	8.24					Y
428	2	20.20	24.66					Y
429	2	7.16	9.76					Y
430	2	29.13	38.35					Y
431	4T	49.53	38.05	65.85	66.79			N
432	2	21.13	13.93					Y
433	2	16.97	15.45					Y
434	2	19.37	20.79					Y
435	2	18.00	18.83					Y
436	2	14.42	14.71					Y
437	2	20.35	18.73					Y
438	2	32.56	39.33					Y
439	4T	26.18	18.00	21.97	20.69			N
440	2	19.22	20.20					Y
441	4T	23.05	23.24	23.34	20.10			N
442	2	13.83	16.18					Y
443	2	14.42	15.45					Y
444	2	16.38	15.40					Y
445	2	17.46	15.30					Y
446	3T	58.30	75.32	53.15				N
447	1	6.28	12.21					Y
448	2	7.36	10.30					Y
449	2	19.86	21.09					Y
450	3T	19.37	17.75	17.16				N
451	1	6.57	5.98					Y
452	2	17.26	14.81					Y
453	1	5.44	10.89					Y
454	2	19.07	15.45					Y
455	2	14.96	16.48					Y
456	1	5.39	7.16					Y
457	2	18.44	17.16					Y
458	2	19.66	16.87					Y
459	2	16.87	15.79					Y
460	3T	25.01	20.40	16.03				N
461	1	4.32	18.34					Y
462	1	5.64	5.79					Y
463	1	15.50	14.96					Y
464	4T	27.07	19.86	23.39	19.42			N
465	2	16.87	16.57					Y
466	2	18.34	19.42					Y
467	2	19.12	18.54					Y
468	2	20.01	23.34					Y
469	2	11.57	12.36					Y
470	3T	21.58	17.46	16.18				N
471	2	18.54	16.18					Y
472	2	10.54	10.10					Y
473	2	18.93	22.26					Y
474	2	19.71	21.72					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
475	2	16.77	19.22					Y
476	2	18.34	16.97					Y
477	3T	23.24	20.89	17.46				N
478	2	17.95	17.75					Y
479	2	16.52	17.46					Y
480	2	23.83	23.49					Y
481	2	20.59	25.79					Y
482	2	8.73	7.65					Y
483	2	14.02	15.50					Y
484	5	29.52	56.43	51.09	57.96	47.47		N
485	2	14.51	19.27					Y
486	2	15.79	23.05					Y
487	4T	15.20	17.95	33.15	28.93			N
488	4T	20.84	24.88	23.83	17.75			N
489	2	20.40	23.14					Y
490	2	16.43	16.97					Y
491	3T	23.29	53.06	37.51				N
492	2	19.42	23.00					Y
493	2	19.76	22.65					Y
494	3T	25.30	40.45	37.66				N
495	2	13.93	14.76					Y
496	2	19.96	23.59					Y
497	2	19.42	22.31					Y
498	3T	19.12	48.53	43.59				N
499	2	18.81	34.50					Y
500	2	16.48	17.41					Y
501	2	21.67	29.32					Y
502	2	13.88	15.45					Y
503	3T	22.75	19.96	11.18				N
504	2	16.77	21.87					Y
505	1	8.92	9.91					Y
506	2	9.51	10.25					Y
507	3T	16.87	18.93	14.71				N
508	3T	25.99	20.50	18.34				N
509	3T	18.34	18.83	16.97				N
510	1	5.20	5.00					Y
511	2	18.93	20.69					Y
512	2	18.14	17.75					Y
513	2	17.46	47.17					Y
514	1	5.59	17.75					Y
515	1	4.85	19.96					Y
516	3T	16.97	23.49	20.69				N
517	3T	17.46	24.42	21.87				N
518	3T	47.56	76.59	68.16				N
519	3T	20.89	17.85	16.38				N
520	2	15.00	25.30					Y
521	2	14.51	16.77					Y
522	2	19.61	20.25					Y
523	2	18.83	18.14					Y
524	3T	23.34	19.79	18.83				N
525	3T	45.60	73.75	82.28				N
526	2	13.83	14.22					Y
527	2	17.75	25.55					Y
528	2	18.14	22.65					Y
529	2	20.40	23.59					Y
530	2	20.74	23.54					Y
531	3T	25.55	27.41	20.89				N
532	3T	26.58	24.47	20.25				N
533	3T	25.40	23.44	19.42				N
534	2	18.73	24.81					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
535	2	15.05	15.99					Y
536	2	20.69	31.25					Y
537	2	15.69	17.70					Y
538	2	18.93	23.83					Y
539	2	20.40	24.62					Y
540	2	22.16	22.02					Y
541	2	17.36	15.00					Y
542	2	17.55	19.32					Y
543	2	15.89	17.55					Y
544	2	13.48	14.07					Y
545	1	5.00	9.12					Y
546	1	6.77	20.50					Y
547	2	16.97	22.51					Y
548	2	18.73	23.14					Y
549	3T	28.93	26.04	22.07				N
550	3T	26.28	24.62	20.40				N
551	3T	22.16	21.87	18.34				N
552	2	15.00	20.40					Y
553	2	17.16	23.83					Y
554	3T	21.48	20.69	16.48				N
555	1	6.96	23.93					Y
556	2	15.99	21.58					Y
557	2	23.59	27.75					Y
558	2	22.85	25.11					Y
559	3T	17.21	26.18	19.40				N
560	2	23.14	29.52					Y
561	2	22.65	27.66					Y
562	2	21.67	24.81					Y
563	4	19.32	31.68	24.76	17.95			N
564	2	22.65	25.79					Y
565	2	14.42	20.35					Y
566	1	5.00	5.30					Y
567	2	17.85	16.38					Y
568	2	19.76	20.69					Y
569	3T	23.59	21.97	19.32				N
570	3T	23.83	23.34	19.71				N
571	3T	24.91	26.28	21.53				N
572	2	19.71	19.12					Y
573	3T	23.59	23.00	19.71				N
574	4T	24.91	22.17	29.52	19.76			N
575	2	19.32	19.71					Y
576	1	6.08	7.16					Y
577	2	22.31	19.17					Y
578	2	22.46	45.60					Y
579	2	23.63	24.13					Y
580	3T	26.87	24.91	17.75				N
581	3T	28.15	25.79	21.75				N
582	2	19.71	17.55					Y
583	4T	27.75	28.83	23.24	19.03			N
584	2	20.25	24.71					Y
585	2	29.13	51.68					Y
586	2	26.28	49.62					Y
587	2	19.66	50.60					Y
588	2	26.38	55.61					Y
589	2	12.45	15.50					Y
590	2	19.03	18.04					Y
591	2	24.91	19.86					Y
592	2	22.95	18.04					Y
593	2	12.06	9.95					Y
594	2	15.79	13.48					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
595	4	27.85	20.45	28.24	27.85			N
596	2	19.86	24.57					Y
597	2	14.56	14.42					Y
598	2	30.11	43.40					Y
599	2	21.28	31.53					Y
600	1	7.80	8.34					Y
601	2	22.70	34.72					Y
602	1	9.02	7.75					Y
603	2	19.42	38.64					Y
604	1	6.96	24.81					Y
605	1	6.57	8.14					Y
606	2	19.47	21.13					Y
607	4T	19.71	20.74	21.87	19.47			N
608	2	20.99	26.58					Y
609	3T	40.12	65.31	54.09				N
610	4T	34.13	31.97	51.44	44.33			N
611	2	17.46	15.99					Y
612	2	18.14	15.89					Y
613	2	19.03	42.66					Y
614	2	18.14	57.17					Y
615	3T	19.03	18.58	24.13				N
616	2	7.36	8.83					Y
617	2	18.83	20.10					Y
618	3T	24.47	16.18	18.04				N
619	2	18.34	31.87					Y
620	1	9.61	10.98					Y
621	2	20.79	18.14					Y
622	2	20.99	17.16					Y
623	2	22.95	18.34					Y
624	2	19.12	41.73					Y
625	2	18.04	25.40					Y
626	3T	16.77	20.01	27.56				N
627	3T	20.80	22.26	17.75				N
628	1	18.00	23.73					Y
629	1	7.26	23.24					Y
630	2	23.05	31.48					Y
631	2	29.81	41.48					Y
632	2	28.59	48.15					Y
633	2	36.48	50.11					Y
634	2	17.90	16.77					Y
635	1	5.30	12.06					Y
636	2	29.62	44.43					Y
637	2	21.67	18.34					Y
638	2	16.97	19.03					Y
639	2	15.40	16.87					Y
640	2	23.73	36.58					Y
641	2	19.47	20.40					Y
642	1	17.31	33.54					Y
643	2	19.76	48.35					Y
644	2	18.34	21.72					Y
645	3T	20.35	23.63	18.34				N
646	2	20.59	22.31					Y
647	2	23.68	19.17					Y
648	3T	18.09	54.23	48.48				N
649	2	19.07	22.56					Y
650	2	11.92	17.85					Y
651	2	14.91	19.12					Y
652	2	20.15	26.09					Y
653	2	14.12	18.83					Y

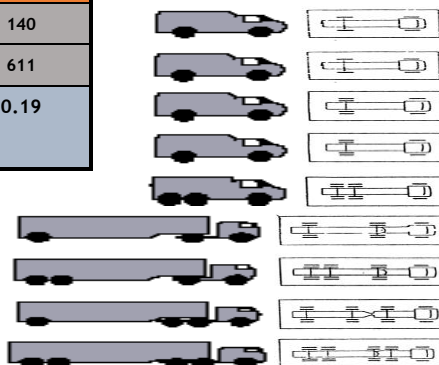
Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
654	2	21.87	26.53					Y
655	1	6.28	19.27					Y
656	4T	19.79	25.50	25.79	30.66			N
657	5T	44.43	41.78	23.39	26.48	32.27		N
658	2	11.31	19.27					Y
659	2	15.84	18.68					Y
660	2	16.57	22.61					Y
661	2	16.23	19.76					Y
662	2	12.21	18.14					Y
663	2	12.21	21.48					Y
664	3T	18.29	31.97	33.20				N
665	2	12.26	17.85					Y
666	2	21.48	25.79					Y
667	2	19.37	23.93					Y
668	2	12.65	17.70					Y
669	2	11.82	17.70					Y
670	2	10.87	13.68					Y
671	2	11.82	13.73					Y
672	2	16.67	16.48					Y
673	1	6.28	7.85					Y
674	2	17.80	20.64					Y
675	2	11.94	13.94					Y
676	2	26.63	42.27					Y
677	2	20.10	22.70					Y
678	2	11.82	16.20					Y
679	2	16.87	19.32					Y
680	4T	23.99	35.40	60.90	58.20			N
681	2	13.79	16.57					Y
682	2	21.92	25.20					Y
683	2	12.11	16.48					Y
684	2	12.15	17.02					Y
685	3T	22.07	18.09	17.06				N
686	3T	19.03	23.24	25.89				N
687	2	19.32	22.36					Y
688	2	16.72	20.00					Y
689	2	18.87	23.19					Y
690	2	21.28	23.79					Y
691	2	18.54	21.62					Y
692	2	15.84	23.24					Y
693	2	14.15	16.82					Y
694	2	11.82	16.38					Y
695	2	16.82	23.68					Y
696	2	14.18	21.87					Y
697	2	10.20	18.39					Y
698	2	17.95	24.17					Y
699	2	19.42	20.30					Y
700	2	19.37	25.89					Y
701	2	18.54	21.28					Y
702	2	19.76	26.58					Y
703	2	22.51	27.36					Y
704	2	15.94	19.03					Y
705	2	13.78	19.71					Y
706	2	16.57	19.76					Y
707	1	15.79	15.84					Y
708	2	19.47	20.69					Y
709	2	19.52	26.38					Y
710	2	15.94	13.09					Y
711	2	15.45	17.85					Y
712	2	22.70	24.13					Y
713	2	11.98	13.88					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	
714	2	14.91	18.54					Y
715	4T	13.89	13.34	24.91	18.54			N
716	4T	12.22	13.91	23.69	25.67			N
717	4T	18.54	23.57	41.32	45.34			N
718	2	23.44	43.74					Y
719	4T	28.15	23.95	19.73	38.39			N
720	3T	13.78	21.72	25.54				N
721	2	29.57	43.28					Y
722	2	30.89	42.86					Y
723	3T	20.84	16.89	19.76				N
724	2	12.45	26.58					Y
725	2	20.35	25.20					Y
726	2	23.19	27.55					Y
727	2	20.99	23.68					Y
728	3T	27.75	75.02	71.00				N
729	2	25.10	30.45					Y
730	3T	25.91	43.05	35.99				N
731	2	19.76	21.18					Y
732	2	21.09	23.15					Y
733	2	21.48	24.77					Y
734	2	16.73	24.71					Y
735	2	17.74	23.83					Y
736	2	19.57	23.57					Y
737	2	20.10	20.75					Y
738	3T	47.10	72.61	66.49				N
739	2	19.76	25.54					Y
740	2	21.43	23.79					Y
741	4T	17.55	31.77	26.28	32.40			N
742	4T	17.46	31.68	24.91	31.58			N
743	2	17.46	23.93					Y
744	2	17.46	20.45					Y
745	2	14.56	15.30					Y
746	2	13.24	14.32					Y
747	3T	14.22	15.10	15.50				N
748	2	17.46	18.24					Y
749	2	18.44	19.22					Y
750	2	23.68	36.09					Y
751	2	14.56	14.42					Y

Sr. No.	Vehicle type	Half of Axle Load (kN)						Spacing between front and front rear (<4.5 or > 4.5m)
		1st Axle	2nd Axle	3rd Axle	4th Axle	5th Axle	6th Axle	

ANALYSIS

Vehicle Type	No's	Axle Spacing	Total Nos.
1	149	< 4.5m	140
1B	0	> 4.5m	611
2	457	RATIO OF VEH. WITH SPACING LESS THAN 4.5m	0.19
2B	5		
3T	93		
3	0		
4T	36		
4	2		
5T	6		
5	3		
6T	0		
6	0		
4TT	0		
4TTT	0		
5TT	0		
5TTT	0		
TOTAL	751		



Vehicle Types:

- 1 - Single Axle Single Tyred LCV
- 1B - Single Axle Single Tyred Bus
- 2 - Single Axle Twin Tyred Trucks
- 2B - Single Axle Twin Tyred Bus
- 3T - Tandem Axle Twin Tyred Trucks
- 3 - 3 Axle Twin Tyred Trucks
- 4T - Multi Axle Twin Tyred Trucks
- 4 - Multi Axle Twin Tyred Trucks
- 5T, 5, 6T - Multi axle twin tyred Trucks

Annexure 2-2

Axle Load Spectrum Data for Bakarpur Manikpur Road Project

Name of road: SH74 Bakarpur Manikpur Road Project

Date: 19-06-2019

Location: Amritpur

Weather: Summer

Direction of traffic flow: Both Side

Direction : Both

Rear Single Axle			Rear Tandem Axle			Rear Tridem Axle		
Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)	Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)	Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)
390-400	395	0	760-780	770	0	1130-1160	1145	0
380-390	385	0	740-760	750	0	1100-1130	1115	0
370-380	375	0	720-740	730	0	1070-1100	1085	0
360-370	365	0	700-720	710	0	1040-1070	1055	0
350-360	355	0	680- 700	690	0	1010-1040	1025	0
340-350	345	0	660- 680	670	0	980-1010	995	0
330-340	335	0	640- 660	650	0	950-980	965	0
320-330	325	0	620- 640	630	0	920-950	935	0
310-320	315	0	600- 620	610	0	890-920	905	0
300-310	305	0	580- 600	590	0	860-890	875	0
290-300	295	0	560- 580	570	0	830-860	845	0
280-290	285	0	540- 560	550	0	800-830	815	0
270-280	275	0	520- 540	530	0	770-800	785	0
260-270	265	0	500- 520	510	0	740-770	755	0
250-260	255	0	480- 500	490	0	710-740	725	0
240-250	245	0	460- 480	470	0	680-710	695	0
230-240	235	0	440- 460	450	0	650-680	665	0
220-230	225	0	420- 440	430	0	620-650	635	0
210-220	215	0	400- 420	410	0	590-620	605	0
200-210	205	0.165	380 - 400	390	0	560-590	575	0
190-200	195	0.165	360 - 380	370	0	530-560	545	0
180-190	185	0.165	340 - 360	350	0	500-530	515	0
170-180	175	0.165	320 - 340	330	3.571	470-500	485	0
160-170	165	0.165	300 - 320	310	2.679	440-470	455	0
150-160	155	0.165	280 - 300	290	3.571	410-440	425	0
140-150	145	0.495	260 - 280	270	6.250	380-410	395	0
130-140	135	0.495	240 - 260	250	1.786	350-380	365	0
120-130	125	2.310	220 - 240	230	2.679	320-350	335	33.333
110-120	115	2.310	200 - 220	210	7.143	290-320	305	0.000
100-110	105	1.815	180 - 200	190	6.250	260-290	275	0.000
90-100	95	3.960	160- 180	170	5.357	230-260	245	0.000
80-90	85	5.776	140-160	150	4.464	200-230	215	0.000
<80	75	81.848	<140	130	56.250	< 200	185	66.667
Total %		100	Total %		100	Total %		100

Axle Load Spectrum Data for Bakarpur Manikpur Road Project

Name of road:			SH74 Bakarpur Manikpur Road Project			Date: 19-06-2019		
Location:			Basant, Jahanabad			Weather: Summer		
Direction of traffic flow:			Both Side			Direction : Both		
Rear Single Axle			Rear Tandem Axle			Rear Tridem Axle		
Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)	Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)	Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)
390-400	395	0	760-780	770	0	1130-1160	1145	0
380-390	385	0	740-760	750	0	1100-1130	1115	0
370-380	375	0	720-740	730	0	1070-1100	1085	0
360-370	365	0	700-720	710	0	1040-1070	1055	0
350-360	355	0	680- 700	690	0	1010-1040	1025	0
340-350	345	0	660- 680	670	0	980-1010	995	0
330-340	335	0	640- 660	650	0	950-980	965	0
320-330	325	0	620- 640	630	0	920-950	935	0
310-320	315	0	600- 620	610	0	890-920	905	0
300-310	305	0	580- 600	590	0	860-890	875	0
290-300	295	0	560- 580	570	0	830-860	845	0
280-290	285	0	540- 560	550	0	800-830	815	0
270-280	275	0	520- 540	530	0.741	770-800	785	0
260-270	265	0	500- 520	510	0	740-770	755	0
250-260	255	0	480- 500	490	0	710-740	725	0
240-250	245	0	460- 480	470	0.741	680-710	695	0
230-240	235	0	440- 460	450	1.481	650-680	665	0
220-230	225	0	420- 440	430	1.481	620-650	635	0
210-220	215	0	400- 420	410	2.222	590-620	605	0
200-210	205	0.759	380 - 400	390	0.741	560-590	575	0
190-200	195	0.303	360 - 380	370	0.741	530-560	545	0
180-190	185	1.669	340 - 360	350	2.222	500-530	515	16.667
170-180	175	0.455	320 - 340	330	1.481	470-500	485	16.667
160-170	165	1.062	300 - 320	310	1.481	440-470	455	0
150-160	155	0.607	280 - 300	290	2.222	410-440	425	16.667
140-150	145	2.276	260 - 280	270	5.185	380-410	395	0
130-140	135	1.821	240 - 260	250	2.963	350-380	365	0
120-130	125	1.062	220 - 240	230	2.963	320-350	335	0
110-120	115	2.883	200 - 220	210	4.444	290-320	305	16.667
100-110	105	2.428	180 - 200	190	5.926	260-290	275	0
90-100	95	3.642	160- 180	170	4.444	230-260	245	0
80-90	85	3.338	140-160	150	2.963	200-230	215	0
<80	75	77.086	<140	130	55.556	< 200	185	33.333
Total %		100	Total %		100	Total %		100

Annexure 2-3												
DDPR Bakarpur-Manikpur Road Project- Rigid Pavement for Toll Plaza Section												
Design of Slab Thickness for Rigid Pavement As Per IRC : 58 - 2015												
Type of Pavement Considered		Pavement Structural Details		Axle Load Spectrum Data								
Carriageway	4-lane divided	Modulus of Subgrade Reaction of Subgrade, MPa/m	48									
Project Zone (For Temperature)	3	Thickness of Granular Subbase, mm	150	Rear Single Axle			Rear Tandem Axle			Rear Tridem Axle		
Shoulders :- Tied Concrete Shoulders ? (Yes/No)	Yes	Thickness of Dry Lean Concrete Subbase, mm	150	Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)	Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)	Load Group (kN)	Mid-Point of Load Group (kN)	Frequency (%)
Transverse Joint Spacing (m)	4.5	Effective Modulus of Subgrade Reaction of Foundation (k), MPa/m	277	270-280	275	0.00	520- 540	530	0.74	770-810	785	0
Lane Width (m)	3.5	Unit weight of Concrete (γ), kN/m ³	24	260-270	265	0.00	500- 520	510	0.00	740-770	755	0
Transverse Joints with Dowel Bars? (Yes/No)	Yes	28-day Flexural Strength of Cement Concrete (F _{cr}), MPa	4.5	250-260	255	0.00	480- 500	490	0.00	710-740	725	0
Design Traffic Estimation		Max. day-time Temperature Differential in Slab, °C (for bottom-up cracking)	16.8	240-250	245	0.15	460- 480	470	0.74	680-710	695	0
Design Period (T), Years	30	Night-time Temperature Differential in Slab, °C (for top-down cracking) = day-time diff/2 + 5	13.4	230-240	235	0.00	440- 460	450	1.48	650-680	665	0
Total Two-way Commercial Traffic (cvpd) in the Year of Completion of Construction	4543	Trial Thickness of Concrete Slab (h), m	0.28	220-230	225	0.00	420- 440	430	1.48	620-650	635	0
Av. Annual Rate of Growth of Commercial Traffic (expressed as decimal)	As Estimated	Load Transfer Efficiency Factor for TDC analysis, Beta = 0.66 for dowel Joints, 0.90 for joints without dowels	0.66	210-220	215	0.46	400- 420	410	2.22	590-620	605	0
Cumulative No of Commercial Vehicles during Design Period (Two-Way), A	119860890	Elastic Modulus of Concrete (E _c), Mpa	30000	200-210	205	0.76	380 - 400	390	0.74	560-590	575	0
Average No of Axles per Commercial Vehicle, B	2.07	Poisson's Ratio of Concrete (μ),	0.15	190-200	195	0.30	360 - 380	370	0.74	530-560	545	0
Cumulative No of Commercial Axles during Design Period (Two-Way), C = A*B	248112042	Radius of Relative Stiffness (l), m	0.67097	180-190	185	1.67	340 - 360	350	2.22	500-530	515	16.67
Proportion of Traffic in Predominant Direction (For 2-lane 2-way highways use a value of 1.0), D	0.536	Design Axle Load Repetitions for Fatigue Analysis		170-180	175	0.46	320 - 340	330	1.48	470-500	485	16.67
Lateral Placement Factor (0.25 For 2-lane 2-way and For multilane highways the value is 0.25 X D), E	0.134	For Bottom-up Cracking Analysis		160-170	165	1.06	300 - 320	310	1.48	440-470	455	0.00
Factor for selection of Traffic for BUC analysis (for six-hour period during day), F	0.211	Front Single (Steering) Axles = H * K ₁	3398536	150-160	155	0.61	280 - 300	290	2.22	410-440	425	16.67
Factor for selection of Traffic for TDC analysis (for six-hour period during day), G	0.260	Rear single Axles = H * K ₂	2984252	140-150	145	2.28	260 - 280	270	5.19	380-410	395	0.00
Design Axle Repetitions for BUC analysis (for 6 hour day time traffic), H = C*E*F	7021769	Tandem Axles = H * K ₃	610894	130-140	135	1.82	240 - 260	250	2.96	350-380	365	0.00
Proportion of Vehicles with Spacing between front and the first rear axle less than the spacing of transverse joints, I	0.19	Tridem Axles = H * K ₄	28087	120-130	125	1.06	220 - 240	230	2.96	320-350	335	0.00
Design Axle Repetitions for TDC Analysis (for 6-hour night time traffic), J = C*E*G*I	1643034	For Top-Down Cracking Analysis		110-120	115	2.88	200 - 220	210	4.44	290-320	305	16.67
Proportion of Front Single (Steering) Axles, K ₁	0.484	Front Single (Steering) Axles = J * K ₁	795229	100-110	105	2.43	180 - 200	190	5.93	260-290	275	0.00
Proportion of Rear Single Axles, K ₂	0.425	Rear Single Axles = J * K ₂	698290	90-100	95	3.64	160- 180	170	4.44	230-260	245	0.00
Proportion of Tandem Axles, K ₃	0.087	Tandem Axles = J * K ₃	142944	80-90	85	3.34	140-160	150	2.96	200-230	215	0.00
Proportion of Tridem Axles, K ₄ = (1-K ₁ -K ₂ -K ₃)	0.004	Tridem Axles = J * K ₄	6572	<80	75	77.09	<140	130	55.56	< 200	185	33.33
							100.00		100			100
Front Single Axles and Rear Tridem axles not considered for bottom-up analysis												

DDPR Bakarpur-Manikpur Road Project- Rigid Pavement for Toll Plaza Section																									
Design of Slab Thickness for Rigid Pavement As Per IRC : 58 - 2015																									
Fatigue Analysis																									
Bottom-up Cracking Fatigue Analysis for Day-time (6 hour) traffic and Positive Temperature Differential										Top-Down Cracking Fatigue Analysis for Night-time (6 hour) traffic and Negative Temperature Differential															
Rear Single Axles					Rear Tandem Axles					Rear Single Axles					Rear Tandem Axles (Stess computed for 50% of Axle Load)					Rear Tridem Axles (Stress computed for 33% of Axle Load)					
Expected Repetitions (ni)	Flex Stress MPa	Stress Ratio (SR)	Allowable Repetitions (Ni)	Fatigue Damage (ni/Ni)	Expected Repetitions (ni)	Flex Stress MPa	Stress Ratio (SR)	Allowable Repetitions (Ni)	Fatigue Damage (ni/Ni)	Expected Repetitions (ni)	Flex Stress MPa	Stress Ratio (SR)	Allowable Repetitions (Ni)	Fatigue Damage (ni/Ni)	Expected Repetitions (ni)	Flex Stress MPa	Stress Ratio (SR)	Allowable Repetitions (Ni)	Fatigue Damage (ni/Ni)	Expected Repetitions (ni)	Flex Stress MPa	Stress Ratio (SR)	Allowable Repetitions (Ni)	Fatigue Damage (ni/Ni)	
0	3.190	0.644	8988	0.000	4525	2.62818744	0.531	222003.06	0.020	0	2.872	0.580	53538	0.000	1059	2.81682524	0.569	73124	0.014	0	2.798	0.565	81133	0.000	
0	3.109	0.628	14151	0.000	0	2.55537367	0.516	376745.657	0.000	0	2.817	0.569	73124	0.000	0	2.76132918	0.558	99877	0.000	0	2.743	0.554	110815	0.000	
0	3.028	0.612	22279	0.000	0	2.48255989	0.502	708312.381	0.000	0	2.761	0.558	99877	0.000	0	2.70583311	0.547	136938	0.000	0	2.687	0.543	152677	0.000	
4528	2.948	0.595	35077	0.129	4525	2.40974612	0.487	1550113.81	0.003	1060	2.706	0.547	136938	0.008	1059	2.65033704	0.535	191987	0.006	0	2.632	0.532	216653	0.000	
0	2.867	0.579	55227	0.000	9050	2.33693234	0.472	4351168.15	0.002	0	2.650	0.535	191987	0.000	2118	2.59484098	0.524	279873	0.008	0	2.576	0.520	320632	0.000	
0	2.786	0.563	86951	0.000	9050	2.26411857	0.457	19837926.4	0.000	0	2.595	0.524	279873	0.000	2118	2.53934491	0.513	428570	0.005	0	2.521	0.509	500597	0.000	
13585	2.705	0.547	137437	0.099	13575	2.19130479	0.443	infinite	0.000	3179	2.539	0.513	428570	0.007	3177	2.48384885	0.502	699650	0.005	0	2.465	0.498	838635	0.000	
22642	2.624	0.530	227719	0.099	4525	2.11849102	0.428	infinite	0.000	5298	2.484	0.502	699650	0.008	1059	2.42835278	0.491	1245647	0.001	0	2.410	0.487	1548081	0.000	
9057	2.544	0.514	413886	0.022	4525	2.04567724	0.413	infinite	0.000	2119	2.428	0.491	1245647	0.002	1059	2.37285671	0.479	2510794	0.000	0	2.354	0.476	3294234	0.000	
49813	2.463	0.498	860323	0.058	13575	1.97286347	0.399	infinite	0.000	11656	2.373	0.479	2510794	0.005	3177	2.31736065	0.468	6135749	0.001	1095	2.299	0.464	8810888	0.000	
13585	2.382	0.481	2211873	0.006	9050	1.90004969	0.384	infinite	0.000	3179	2.317	0.468	6135749	0.001	2118	2.26186458	0.457	21071406	0.000	1095	2.243	0.453	36240520	0.000	
31699	2.301	0.465	8391340	0.004	9050	1.82723591	0.369	infinite	0.000	7417	2.262	0.457	21071406	0.000	2118	2.20636851	0.446	infinite	0.000	0	2.188	0.442	infinite	0.000	
18114	2.220	0.449	infinite	0.000	13575	1.75442214	0.354	infinite	0.000	4238	2.206	0.446	infinite	0.000	3177	2.15087245	0.435	infinite	0.000	1095	2.132	0.431	infinite	0.000	
67927	2.140	0.432	infinite	0.000	31676	1.68160836	0.340	infinite	0.000	15894	2.151	0.435	infinite	0.000	7412	2.09537638	0.423	infinite	0.000	0	2.077	0.420	infinite	0.000	
54341	2.059	0.416	infinite	0.000	18101	1.60879459	0.325	infinite	0.000	12715	2.095	0.423	infinite	0.000	4235	2.03988031	0.412	infinite	0.000	0	2.021	0.408	infinite	0.000	
31699	1.978	0.400	infinite	0.000	18101	1.53598081	0.310	infinite	0.000	7417	2.040	0.412	infinite	0.000	4235	1.98438425	0.401	infinite	0.000	0	1.966	0.397	infinite	0.000	
86041	1.897	0.383	infinite	0.000	27151	1.46316704	0.296	infinite	0.000	20133	1.984	0.401	infinite	0.000	6353	1.92888818	0.390	infinite	0.000	1095	1.910	0.386	infinite	0.000	
72455	1.816	0.367	infinite	0.000	36201	1.39035326	0.281	infinite	0.000	16954	1.929	0.390	infinite	0.000	8471	1.87339212	0.378	infinite	0.000	0	1.855	0.375	infinite	0.000	
108683	1.736	0.351	infinite	0.000	27151	1.31753949	0.266	infinite	0.000	25431	1.873	0.378	infinite	0.000	6353	1.81789605	0.367	infinite	0.000	0	1.799	0.364	infinite	0.000	
99626	1.655	0.334	infinite	0.000	18101	1.24472571	0.251	infinite	0.000	23312	1.818	0.367	infinite	0.000	4235	1.76239998	0.356	infinite	0.000						
2300455	1.574	0.318	infinite	0.000	339386	1.17191193	0.237	infinite	0.000	538287	1.762	0.356	infinite	0.000	79413	1.70690392	0.345	infinite	0.000	2191	1.688	0.341	infinite	0.000	
2984252	Fat Dam from Sing. Axles =			0.417	610894	Fat Dam from Tand Axles =			0.026	698290	Fat Dam from Sing. Axles =			0.030	142944	Fat Dam from Tand Axles =			0.039	6572	Fat Dam from Tridem Axles =			0.000	
Total Bottom-up Fatigue Damage due to single and tandem axle loads =					0.417	+	0.026	=	0.443	Total Top-Down Fatigue Damage =					0.030	+	0.039	+	0.000	=	0.069				
Sum of CFD for BUC & TDC=					0.512					DESIGN IS SAFE SINCE SUM OF CFD FOR BUC AND TDC< OR EQ.1															

Annexure 2-4

DDPR Bakarpur-Manikpur Road Project- Rigid Pavement for Toll Plaza Section

DESIGN OF DOWEL BARS

Maximum Single Axle Load		265	KN
Maximum Single Wheel Load		132.5	KN
Wheel Load for Dowel Bar Design		66.25	KN
	Say	66.25	KN
Slab Thickness	h	0.29	m
Radius of Relative Stiffness	ℓ	670.972	mm
Percentage of load transfer		50	%
Joint width	z	5	mm
Dia of Dowel bar	b_d	36	mm
Assumed spacing between the dowel bars	Sd	300	mm
Assumed length of dowel bars	Ld	450	mm
Modulus of Elasticity of Steel	Es	200000	Mpa
Ratio of Modulus of Dowel to Concrete Interaction	K	415000	MPa/m
Charecterstic of Concrete	fck	40	MPa
Permissible bearing stress in concrete	Fb	27.55	MPa
No. of dowel bars required for load transfer		3	Nos
Load transferred by dowel system	Pt*	1.659	
Load carried by outer dowel bar	Pt	19.97	KN
Moment of Inertia of Dowel bar	MI	82447.96	cm4
Relative stiffness of Dowel bar	β	0.022	
Bearing stress in dowel bar		25.52	MPa
		Safe	

DESIGN OF TIE BARS

Slab Thickness	h	0.29	m
Lane Width	b	3.5	m
Coefficient of friction between pavement & Subbase / Base	f	1.5	
Diameter of Tie bar	dt	12	mm
Density of Concrete		24	kN/m3
Select type of tie bar		Deformed	
Allowable tensile stress in tie bars	Sst	200	MPa
Allowable bond stress for tie bars	B	2.46	MPa
Area of steel bar per unit length	As	182.700	mm2
Crosssectional area of Tie bar	Acs	113.097	mm2
Perimeter of Tie bar	Pt	37.699	mm
Spacing of Tie bars	St	619.0	mm
Say spacing of Tie bars	Say	610	mm
Length of Tie bar	Lt	487.805	mm
Say Length of Tie bar after allowing for loss of bond stress		640	mm