TABLE 5 DESIGN LOAD CALCULATION FOR DN 250mmES

DATA: Crushing strength = 65 kN/m;   Unit weight of backfill = 19.6 kN/m^3;   Ext. dia. = 318mm
Ku' = 0.13;   Ku = 0.19; r_{sd}p = 0.7;   Traffic load = 112.5 kN;   Factor of Safety = 1.25

Trench cover m	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor
0.6	43.93	0.84	43.93	0.84	43.93	0.84	43.93	0.84
0.7	39.51	0.76	39.51	0.76	39.51	0.76	39.51	0.76
0.8	36.69	0.71	36.69	0.71	36.69	0.71	36.69	0.71
0.9	28.30	0.54	28.30	0.54	28.30	0.54	28.30	0.54
1.0	33.26	0.64	33.26	0.64	33.26	0.64	33.26	0.64
1.1	32.31	0.62	32.31	0.62	32.31	0.62	32.31	0.62
1.2	31.68	0.61	31.68	0.61	31.68	0.61	31.68	0.61
1.3	31.34	0.60	31.34	0.60	31.34	0.60	31.34	0.60
1.4	31.19	0.60	31.19	0.60	31.19	0.60	31.19	0.60
1.5	31.16	0.60	31.16	0.60	31.16	0.60	31.16	0.60
1.6	31.26	0.60	31.26	0.60	31.26	0.60	31.26	0.60
1.7	31.46	0.60	31.46	0.60	31.46	0.60	31.46	0.60
1.8	31.75	0.61	31.75	0.61	31.75	0.61	31.75	0.61
1.9	32.07	0.62	32.07	0.62	32.07	0.62	32.07	0.62
2.0	32.46	0.62	32.46	0.62	32.46	0.62	32.46	0.62
2.1	32.91	0.63	32.91	0.63	32.91	0.63	32.91	0.63
2.2	33.36	0.64	33.36	0.64	33.36	0.64	33.36	0.64
2.3	33.87	0.65	33.87	0.65	33.87	0.65	33.87	0.65
2.4	34.39	0.66	34.39	0.66	34.39	0.66	34.39	0.66
2.5	34.95	0.67	34.95	0.67	34.95	0.67	34.95	0.67
2.6	35.51	0.68	35.51	0.68	35.51	0.68	35.51	0.68
2.7	36.12	0.69	36.12	0.69	36.12	0.69	36.12	0.69
2.8	36.73	0.71	36.73	0.71	36.73	0.71	36.73	0.71
2.9	37.39	0.72	37.39	0.72	37.39	0.72	37.39	0.72
3.0	38.04	0.73	38.04	0.73	38.04	0.73	38.04	0.73
3.1	38.72	0.74	38.72	0.74	38.72	0.74	38.72	0.74
3.2	39.05	0.75	39.39	0.76	39.39	0.76	39.39	0.76
3.3	39.31	0.76	40.09	0.77	40.09	0.77	40.09	0.77
3.4	39.55	0.76	40.80	0.78	40.80	0.78	40.80	0.78
3.5	39.81	0.77	41.53	0.80	41.53	0.80	41.53	0.80
3.6	40.05	0.77	42.27	0.81	42.27	0.81	42.27	0.81
3.7	40.29	0.77	43.02	0.83	43.02	0.83	43.02	0.83
3.8	40.51	0.78	43.78	0.84	43.78	0.84	43.78	0.84
3.9	40.75	0.78	44.56	0.86	44.56	0.86	44.56	0.86
4.0	40.98	0.79	45.35	0.87	45.35	0.87	45.35	0.87
4.1	41.26	0.79	46.19	0.89	46.19	0.89	46.19	0.89
4.2	41.53	0.80	47.05	0.90	47.05	0.90	47.05	0.90
4.3	41.79	0.80	47.91	0.92	47.91	0.92	47.91	0.92
4.4	42.05	0.81	48.78	0.94	48.78	0.94	48.78	0.94
4.5	42.03	0.81	49.38	0.95	49.38	0.95	49.38	0.95
4.6	42.28	0.81	49.75	0.96	50.26	0.97	50.26	0.97
4.7	42.52	0.82	50.11	0.96	51.15	0.98	51.15	0.98
4.8	42.76	0.82	50.45	0.97	52.04	1.00	52.04	1.00
4.9	42.99	0.83	50.79	0.98	52.94	1.02	52.94	1.02
5.0	42.98	0.83	50.89	0.98	53.60	1.03	53.60	1.03
5.1	43.20	0.83	51.22	0.98	54.51	1.05	54.51	1.05
Trench width,m	**0.8**		**0.9**		**1.0**		**1.1**	

☐ Narrow trench load   ▣ **Wide trench load**

DESIGN LOAD CALCULATION FOR DN 250mmES

Trench cover m	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor	Design load kN/m	Bedding factor
5.2	43.41	0.83	51.53	0.99	55.42	1.07	55.42	1.07
5.3	43.62	0.84	51.85	1.00	56.34	1.08	56.34	1.08
5.4	43.82	0.84	52.14	1.00	57.25	1.10	57.25	1.10
5.5	43.80	0.84	52.22	1.00	57.95	1.11	57.95	1.11
5.6	43.99	0.85	52.51	1.01	58.88	1.13	58.88	1.13
5.7	44.18	0.85	52.79	1.02	59.81	1.15	59.81	1.15
5.8	44.36	0.85	53.07	1.02	60.74	1.17	60.74	1.17
5.9	44.54	0.86	53.34	1.03	61.67	1.19	61.67	1.19
6.0	44.54	0.86	53.43	1.03	62.44	1.20	62.44	1.20
6.1	44.68	0.86	53.65	1.03	63.03	1.21	63.35	1.22
6.2	44.81	0.86	53.87	1.04	63.34	1.22	64.26	1.24
6.3	44.94	0.86	54.08	1.04	63.65	1.22	65.17	1.25
6.4	45.06	0.87	54.29	1.04	63.94	1.23	66.08	1.27
6.5	45.17	0.87	54.48	1.05	64.23	1.24	66.99	1.29
6.6	45.29	0.87	54.68	1.05	64.52	1.24	67.92	1.31
6.7	45.40	0.87	54.87	1.06	64.80	1.25	68.84	1.32
6.8	45.51	0.88	55.06	1.06	65.08	1.25	69.77	1.34
6.9	45.62	0.88	55.24	1.06	65.34	1.26	70.69	1.36
7.0	45.71	0.88	55.41	1.07	65.60	1.26	71.62	1.38
7.1	45.81	0.88	55.58	1.07	65.85	1.27	72.55	1.40
7.2	45.92	0.88	55.76	1.07	66.11	1.27	73.50	1.41
7.3	46.02	0.89	55.92	1.08	66.36	1.28	74.44	1.43
7.4	46.11	0.89	56.08	1.08	66.60	1.28	75.38	1.45
7.5	46.20	0.89	56.24	1.08	66.83	1.29	76.32	1.47
7.6	46.28	0.89	56.38	1.08	67.05	1.29	77.26	1.49
7.7	46.36	0.89	56.53	1.09	67.27	1.29	78.20	1.50
7.8	46.44	0.89	56.66	1.09	67.48	1.30	78.80	1.52
7.9	46.51	0.89	56.80	1.09	67.68	1.30	79.08	1.52
8.0	46.58	0.90	56.92	1.09	67.88	1.31	79.36	1.53
8.1	46.65	0.90	57.06	1.10	68.08	1.31	79.65	1.53
8.2	46.73	0.90	57.19	1.10	68.29	1.31	79.92	1.54
8.3	46.80	0.90	57.31	1.10	68.48	1.32	80.19	1.54
8.4	46.87	0.90	57.44	1.10	68.67	1.32	80.46	1.55
8.5	46.93	0.90	57.55	1.11	68.84	1.32	80.71	1.55
8.6	46.99	0.90	57.66	1.11	69.02	1.33	80.96	1.56
8.7	47.05	0.90	57.77	1.11	69.19	1.33	81.20	1.56
8.8	47.10	0.91	57.88	1.11	69.35	1.33	81.44	1.57
8.9	47.16	0.91	57.98	1.11	69.52	1.34	81.67	1.57
9.0	47.20	0.91	58.07	1.12	69.67	1.34	81.89	1.57
9.1	47.26	0.91	58.17	1.12	69.83	1.34	82.12	1.58
9.2	47.31	0.91	58.27	1.12	69.98	1.35	82.34	1.58
9.3	47.36	0.91	58.37	1.12	70.13	1.35	82.55	1.59
9.4	47.41	0.91	58.46	1.12	70.28	1.35	82.76	1.59
9.5	47.45	0.91	58.54	1.13	70.42	1.35	82.97	1.60
9.6	47.50	0.91	58.63	1.13	70.55	1.36	83.16	1.60
9.7	47.54	0.91	58.71	1.13	70.69	1.36	83.36	1.60
9.8	47.58	0.91	58.79	1.13	70.81	1.36	83.54	1.61
9.9	47.61	0.92	58.87	1.13	70.94	1.36	83.73	1.61
10.0	47.65	0.92	58.94	1.13	71.06	1.37	83.91	1.61
Trench width,m	0.8		0.9		1.0		1.1	

☐ Narrow trench load   ▨ Wide trench load