

## DAFTAR PUSTAKA

- Absi, E. (1965). *Stabilite Au Flambage Des Structures Tridimensionnelles*. Comptes Rendus Hebdomadaires Des Seances De L Academie Des Sciences, 260(8), 2125.
- Ardana, M. D., & Mochtar, I. B. (1999). Pengaruh Tegangan Overburden Efektif dan Plastisitas Tanah terhadap Kekuatan Geser Undrained Tanah Lempung Berkonsistensi Sangat Lunak Sampai Kaku yang Terkonsolidasi Normal. Surabaya: Thesis Jurusan Teknik Sipil FTSP-ITS.
- Barron, R. A. (1948). "Consolidation of Fine-Grained Soils by Drain Wells," Transactions, American Society of Civil Engineers, Vol. 113, pp. 718–754.
- Biarez, J., & Chambon, R. (1973). Introduction au rôle de l'eau sur la stabilité des barrages. *La Houille Blanche*, (5-6), 449-459.
- Bishop, A.W. (1955). "The Use of Slip Circle in the Stability Analysis of Ear Slopes," *Geotechnique*, Vol.5, No. 1, 7- 17.
- Bowles, Joseph E. *Foundation Analysis And Design Fifth Edition*. (1996).
- Buisman, A. S. K. (1940). *Grondmechanica*, Waltman, Delft, the Netherlands.
- Das, B. M., Endah, N., & Mochtar, I. B. (1993). *Mekanika Tanah (Prinsip-prinsip Rekayasa Geoteknis) Jilid 1 dan 2*. PenerbitErlangga. Jakarta.
- Das, B. M. (2014). *Principles of Foundation Engineering, Cengage Learning, 2016: Principles of Foundation Engineering (Vol. 8)*
- Lastiasih, Y., & Tantri, P. (2015). Analysis of Increasing Shear Strength of Soil to Slope Stability After Consolidation Settlement Completed With Various Method. 2. *Proceedings of Slope*, 27(30th).
- Mandel, J. and Salencon, J. (1972). "Force portante d'un sol sur une assise rigide (étude théorique)," *Geotechnique*, Vol. 22, No. 1: 79–93.
- Mesri, G. (1975). Discussion: new design procedure for the stability of soft clays. *ASCE J. Geotech. Engng* 101, No. 4, 409–412.

Mochtar, I. B. (2000). Teknologi Perbaikan Tanah dan Alternatif Perencanaan pada Tanah Bermasalah (Problematic Soils). Penerbit Jurusan Teknik Sipil FTSP-ITS, Surabaya.

SNI 8460:2017 Persyaratan Perencanaan Geoteknik

Lampiran 1 Hasil dari derajat konsolidasi ( $\bar{U}$ ) pada pola segitiga dengan variasi jarak pemasangan PVD

t minggu	$T_v$	$U_v$ %	1 m			1.2 m			1.4 m			1.6 m			1.8 m			2 m		
			$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %
0	0.000	0	0.000	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0.000	0	0
1	0.004	7.16	0.296	69.11	71.32	0.206	52.73	56.11	0.151	40.24	44.52	0.116	31.14	36.07	0.091	24.54	29.94	0.074	19.69	25.44
2	0.008	10.13	0.592	90.46	91.42	0.411	77.65	79.92	0.302	64.28	67.90	0.231	52.59	57.39	0.183	43.06	48.83	0.148	35.50	42.03
3	0.012	12.41	0.888	97.05	97.42	0.617	89.44	90.75	0.453	78.65	81.30	0.347	67.35	71.40	0.274	57.03	62.36	0.222	48.20	54.62
4	0.016	14.33	1.184	99.09	99.22	0.822	95.01	95.72	0.604	87.24	89.07	0.463	77.52	80.74	0.366	67.58	72.22	0.296	58.39	64.35
5	0.020	16.02	1.480	99.72	99.76	1.028	97.64	98.02	0.755	92.38	93.60	0.578	84.52	87.00	0.457	75.53	79.45	0.370	66.58	71.94
6	0.024	17.55	1.776	99.91	99.93	1.234	98.88	99.08	0.906	95.44	96.24	0.694	89.34	91.21	0.548	81.54	84.78	0.444	73.16	77.87
7	0.028	18.95	2.073	99.97	99.98	1.439	99.47	99.57	1.057	97.28	97.79	0.810	92.66	94.05	0.640	86.07	88.71	0.518	78.45	82.53
8	0.032	20.26	2.369	99.99	99.99	1.645	99.75	99.80	1.208	98.37	98.70	0.925	94.95	95.97	0.731	89.49	91.62	0.592	82.69	86.20
9	0.036	21.49	2.665	100	100	1.850	99.88	99.91	1.360	99.03	99.24	1.041	96.52	97.27	0.822	92.07	93.77	0.666	86.10	89.08
10	0.040	22.65	2.961	100	100	2.056	99.94	99.96	1.511	99.42	99.55	1.157	97.60	98.15	0.914	94.01	95.37	0.740	88.83	91.36
11	0.044	23.76	3.257	100	100	2.262	99.97	99.98	1.662	99.65	99.74	1.272	98.35	98.74	1.005	95.48	96.56	0.814	91.03	93.16
12	0.048	24.81	3.553	100	100	2.467	99.99	99.99	1.813	99.79	99.84	1.388	98.86	99.15	1.097	96.59	97.44	0.888	92.80	94.58
13	0.052	25.83	3.849	100	100	2.673	99.99	100	1.964	99.88	99.91	1.504	99.22	99.42	1.188	97.43	98.09	0.962	94.22	95.71
14	0.056	26.80	4.145	100	100	2.879	100	100	2.115	99.93	99.95	1.619	99.46	99.61	1.279	98.06	98.58	1.036	95.35	96.60
15	0.060	27.74	4.441	100	100	3.084	100	100	2.266	99.96	99.97	1.735	99.63	99.73	1.371	98.54	98.94	1.110	96.27	97.30
16	0.064	28.65	4.737	100	100	3.290	100	100	2.417	99.97	99.98	1.850	99.74	99.82	1.462	98.89	99.21	1.184	97.00	97.86
17	0.069	29.53	5.033	100	100	3.495	100	100	2.568	99.98	99.99	1.966	99.82	99.88	1.553	99.17	99.41	1.258	97.59	98.30
18	0.073	30.39	5.329	100	100	3.701	100	100	2.719	99.99	99.99	2.082	99.88	99.92	1.645	99.37	99.56	1.332	98.07	98.65
19	0.077	31.22	5.625	100	100	3.907	100	100	2.870	99.99	100	2.197	99.92	99.94	1.736	99.53	99.67	1.406	98.45	98.93
20	0.081	32.03	5.922	100	100	4.112	100	100	3.021	100	100	2.313	99.94	99.96	1.828	99.64	99.76	1.480	98.75	99.15
21	0.085	32.83	6.218	100	100	4.318	100	100	3.172	100	100	2.429	99.96	99.97	1.919	99.73	99.82	1.554	99.00	99.33
22	0.089	33.60	6.514	100	100	4.523	100	100	3.323	100	100	2.544	99.97	99.98	2.010	99.80	99.86	1.628	99.20	99.47
23	0.093	34.35	6.810	100	100	4.729	100	100	3.474	100	100	2.660	99.98	99.99	2.102	99.85	99.90	1.702	99.35	99.58
24	0.097	35.09	7.106	100	100	4.935	100	100	3.625	100	100	2.776	99.99	99.99	2.193	99.88	99.92	1.776	99.48	99.66
25	0.101	35.82	7.402	100	100	5.140	100	100	3.777	100	100	2.891	99.99	99.99	2.285	99.91	99.94	1.850	99.58	99.73

Lampiran 2 Hasil dari derajat konsolidasi ( $\bar{U}$ ) pada pola segiempat dengan variasi jarak pemasangan PVD

t minggu	$T_v$	$U_v$ %	1 m			1.2 m			1.4 m			1.6 m			1.8 m			2 m		
			$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %	$T_r$	$U_r$ %	$U_{total}$ %
0	0.000	0	0.000	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0.000	0	0	0.000	0	0
1	0.004	7.16	0.257	62.60	65.28	0.178	46.68	50.50	0.131	35.14	39.79	0.100	26.97	32.20	0.079	21.14	26.79	0.064	16.90	22.85
2	0.008	10.13	0.513	86.01	87.43	0.356	71.57	74.45	0.262	57.94	62.20	0.200	46.67	52.07	0.158	37.81	44.11	0.128	30.94	37.93
3	0.012	12.41	0.770	94.77	95.42	0.534	84.85	86.73	0.393	72.72	76.10	0.301	61.05	65.88	0.238	50.95	57.04	0.192	42.61	49.73
4	0.016	14.33	1.026	98.04	98.32	0.713	91.92	93.08	0.524	82.31	84.84	0.401	71.56	75.63	0.317	61.32	66.86	0.257	52.30	59.14
5	0.020	16.02	1.283	99.27	99.39	0.891	95.69	96.38	0.654	88.52	90.36	0.501	79.23	82.55	0.396	69.50	74.38	0.321	60.36	66.71
6	0.024	17.55	1.539	99.73	99.77	1.069	97.70	98.11	0.785	92.56	93.86	0.601	84.83	87.49	0.475	75.94	80.16	0.385	67.06	72.84
7	0.028	18.95	1.796	99.90	99.92	1.247	98.78	99.01	0.916	95.17	96.09	0.701	88.92	91.02	0.554	81.03	84.62	0.449	72.63	77.81
8	0.032	20.26	2.052	99.96	99.97	1.425	99.35	99.48	1.047	96.87	97.50	0.802	91.91	93.55	0.633	85.04	88.07	0.513	77.25	81.86
9	0.036	21.49	2.309	99.99	99.99	1.603	99.65	99.73	1.178	97.97	98.41	0.902	94.09	95.36	0.713	88.20	90.74	0.577	81.09	85.16
10	0.040	22.65	2.565	99.99	100	1.782	99.81	99.86	1.309	98.68	98.98	1.002	95.69	96.66	0.792	90.70	92.80	0.641	84.29	87.85
11	0.044	23.76	2.822	100	100	1.960	99.90	99.92	1.440	99.15	99.35	1.102	96.85	97.60	0.871	92.66	94.41	0.706	86.94	90.05
12	0.048	24.81	3.079	100	100	2.138	99.95	99.96	1.571	99.45	99.58	1.203	97.70	98.27	0.950	94.21	95.65	0.770	89.15	91.84
13	0.052	25.83	3.335	100	100	2.316	99.97	99.98	1.702	99.64	99.73	1.303	98.32	98.75	1.029	95.44	96.61	0.834	90.98	93.31
14	0.056	26.80	3.592	100	100	2.494	99.99	99.99	1.832	99.77	99.83	1.403	98.77	99.10	1.109	96.40	97.37	0.898	92.51	94.51
15	0.060	27.74	3.848	100	100	2.672	99.99	99.99	1.963	99.85	99.89	1.503	99.10	99.35	1.188	97.16	97.95	0.962	93.77	95.50
16	0.064	28.65	4.105	100	100	2.851	100	100	2.094	99.90	99.93	1.603	99.35	99.53	1.267	97.76	98.40	1.026	94.82	96.31
17	0.069	29.53	4.361	100	100	3.029	100	100	2.225	99.94	99.96	1.704	99.52	99.66	1.346	98.23	98.76	1.090	95.70	96.97
18	0.073	30.39	4.618	100	100	3.207	100	100	2.356	99.96	99.97	1.804	99.65	99.76	1.425	98.61	99.03	1.154	96.43	97.51
19	0.077	31.22	4.874	100	100	3.385	100	100	2.487	99.97	99.98	1.904	99.75	99.82	1.504	98.90	99.24	1.219	97.03	97.96
20	0.081	32.03	5.131	100	100	3.563	100	100	2.618	99.98	99.99	2.004	99.81	99.87	1.584	99.13	99.41	1.283	97.53	98.32
21	0.085	32.83	5.387	100	100	3.741	100	100	2.749	99.99	99.99	2.104	99.86	99.91	1.663	99.32	99.54	1.347	97.95	98.62
22	0.089	33.60	5.644	100	100	3.919	100	100	2.880	99.99	100	2.205	99.90	99.93	1.742	99.46	99.64	1.411	98.30	98.87
23	0.093	34.35	5.901	100	100	4.098	100	100	3.011	100	100	2.305	99.93	99.95	1.821	99.58	99.72	1.475	98.58	99.07
24	0.097	35.09	6.157	100	100	4.276	100	100	3.141	100	100	2.405	99.95	99.97	1.900	99.67	99.78	1.539	98.82	99.24
25	0.101	35.82	6.414	100	100	4.454	100	100	3.272	100	100	2.505	99.96	99.98	1.980	99.74	99.83	1.603	99.02	99.37

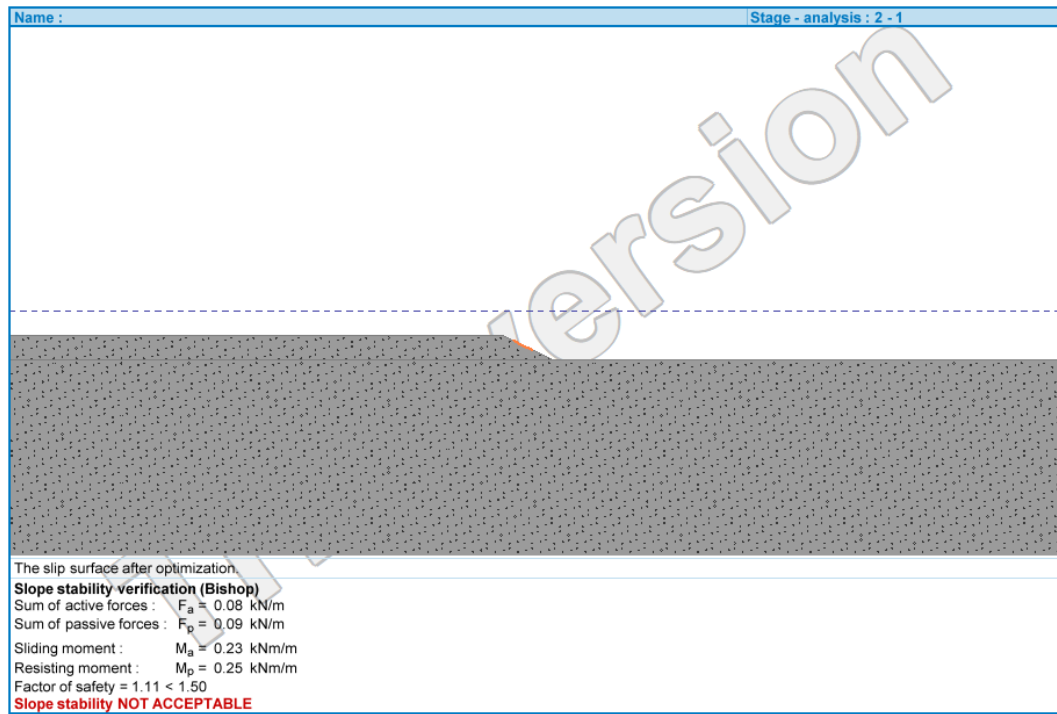
Lampiran 3 Hasil dari Hubungan Waktu dengan Penurunan Konsolidasi Pola Segitiga

Waktu	Faktor T	U <sub>v</sub>	Penurunan	1 m		1,2 m		1,4 m		1,6 m		1,8 m		2 m	
				U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan
0	0	0.00	0	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
1	0.0040	7.16	6.293	71.321	62.657	56.112	49.296	44.518	39.110	36.075	31.692	29.945	26.307	25.439	22.349
2	0.0081	10.13	8.900	91.424	80.317	79.916	70.207	67.902	59.653	57.390	50.418	48.826	42.894	42.032	36.925
3	0.0121	12.41	10.900	97.418	85.583	90.746	79.722	81.303	71.426	71.403	62.729	62.362	54.786	54.623	47.987
4	0.0161	14.33	12.586	99.220	87.166	95.721	84.093	89.071	78.250	80.740	70.932	72.220	63.447	64.355	56.537
5	0.0201	16.02	14.072	99.764	87.644	98.017	86.110	93.597	82.227	87.000	76.431	79.451	69.799	71.937	63.198
6	0.0242	17.55	15.415	99.928	87.789	99.080	87.043	96.243	84.551	91.211	80.131	84.776	74.477	77.872	68.412
7	0.0282	18.95	16.650	99.978	87.833	99.572	87.476	97.793	85.913	94.052	82.626	88.708	77.931	82.531	72.505
8	0.0322	20.26	17.799	99.993	87.846	99.801	87.677	98.702	86.712	95.970	84.311	91.616	80.487	86.197	75.725
9	0.0363	21.49	18.879	99.998	87.850	99.907	87.770	99.236	87.181	97.268	85.452	93.771	82.380	89.085	78.263
10	0.0403	22.65	19.900	99.999	87.851	99.957	87.814	99.550	87.457	98.147	86.224	95.369	83.784	91.363	80.264
11	0.0443	23.76	20.871	100	87.852	99.980	87.834	99.735	87.619	98.742	86.747	96.556	84.826	93.163	81.845
12	0.0484	24.81	21.799	100	87.852	99.991	87.843	99.844	87.715	99.146	87.101	97.437	85.600	94.585	83.094
13	0.0524	25.83	22.690	100	87.852	99.996	87.848	99.908	87.771	99.420	87.342	98.092	86.175	95.710	84.082
14	0.0564	26.80	23.546	100	87.852	99.998	87.850	99.946	87.804	99.606	87.505	98.579	86.603	96.599	84.864
15	0.0604	27.74	24.373	100	87.852	99.999	87.851	99.968	87.824	99.732	87.616	98.942	86.922	97.304	85.483
16	0.0645	28.65	25.172	100	87.852	100	87.851	99.981	87.835	99.818	87.692	99.211	87.159	97.862	85.973
17	0.0685	29.53	25.947	100	87.852	100	87.852	99.989	87.842	99.876	87.743	99.412	87.335	98.304	86.362
18	0.0725	30.39	26.699	100	87.852	100	87.852	99.993	87.846	99.916	87.778	99.562	87.467	98.655	86.670
19	0.0766	31.22	27.430	100	87.852	100	87.852	99.996	87.848	99.943	87.801	99.673	87.565	98.932	86.914
20	0.0806	32.03	28.143	100	87.852	100	87.852	99.998	87.850	99.961	87.817	99.756	87.638	99.153	87.107
21	0.0846	32.83	28.838	100	87.852	100	87.852	99.999	87.851	99.973	87.828	99.818	87.692	99.327	87.261
22	0.0887	33.60	29.517	100	87.852	100	87.852	99.999	87.851	99.982	87.836	99.864	87.733	99.466	87.383
23	0.0927	34.35	30.180	100	87.852	100	87.852	100	87.851	99.988	87.841	99.899	87.763	99.576	87.479
24	0.0967	35.09	30.829	100	87.852	100	87.852	100	87.851	99.992	87.844	99.925	87.785	99.663	87.556
25	0.1007	35.82	31.465	100	87.852	100	87.852	100	87.852	99.994	87.847	99.944	87.802	99.733	87.617

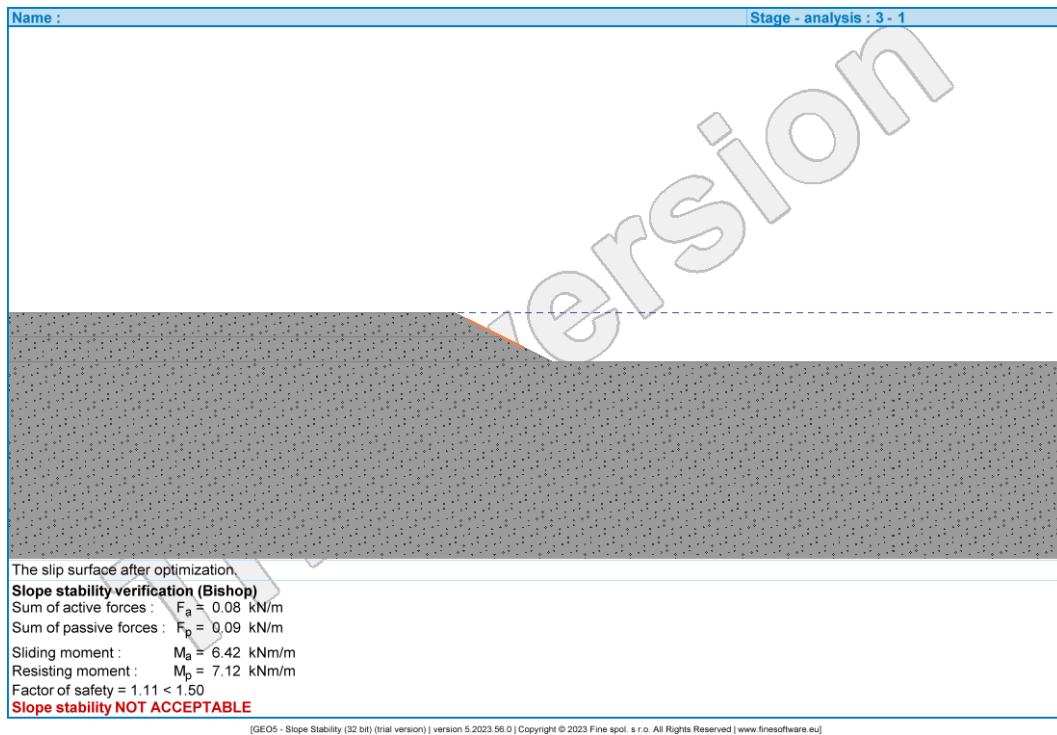
Lampiran 4 Hasil dari Hubungan Waktu dengan Penurunan Konsolidasi Pola Segiempat

Waktu	Faktor T	Uv	Penurunan	1 m		1,2 m		1,4 m		1,6 m		1,8 m		2 m	
				U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan	U <sub>total</sub>	Penurunan
0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.0040	7.16	6.293	65.281	57.351	50.504	44.368	39.789	34.955	32.202	28.290	26.786	23.532	22.849	20.073
2	0.0081	10.13	8.900	87.431	76.810	74.454	65.409	62.197	54.641	52.070	45.744	44.107	38.749	37.934	33.326
3	0.0121	12.41	10.900	95.419	83.827	86.725	76.190	76.103	66.858	65.884	57.880	57.038	50.109	49.727	43.686
4	0.0161	14.33	12.586	98.324	86.380	93.078	81.770	84.841	74.534	75.631	66.443	66.861	58.739	59.137	51.953
5	0.0201	16.02	14.072	99.386	87.312	96.382	84.673	90.362	79.385	82.555	72.526	74.382	65.346	66.712	58.607
6	0.0242	17.55	15.415	99.774	87.654	98.106	86.188	93.863	82.460	87.492	76.863	80.165	70.426	72.840	63.991
7	0.0282	18.95	16.650	99.917	87.779	99.008	86.980	96.088	84.415	91.021	79.964	84.624	74.344	77.814	68.361
8	0.0322	20.26	17.799	99.969	87.825	99.479	87.394	97.503	85.658	93.549	82.184	88.070	77.371	81.860	71.915
9	0.0363	21.49	18.879	99.989	87.842	99.727	87.612	98.406	86.451	95.361	83.777	90.737	79.714	85.157	74.812
10	0.0403	22.65	19.900	99.996	87.848	99.856	87.726	98.981	86.957	96.663	84.920	92.803	81.529	87.848	77.176
11	0.0443	23.76	20.871	99.998	87.850	99.925	87.785	99.349	87.280	97.598	85.741	94.405	82.937	90.045	79.106
12	0.0484	24.81	21.799	99.999	87.851	99.960	87.817	99.583	87.486	98.270	86.332	95.649	84.029	91.842	80.685
13	0.0524	25.83	22.690	100	87.852	99.979	87.833	99.733	87.618	98.753	86.757	96.615	84.878	93.312	81.976
14	0.0564	26.80	23.546	100	87.852	99.989	87.842	99.829	87.702	99.102	87.062	97.365	85.537	94.515	83.033
15	0.0604	27.74	24.373	100	87.852	99.994	87.847	99.891	87.756	99.352	87.283	97.949	86.050	95.500	83.899
16	0.0645	28.65	25.172	100	87.852	99.997	87.849	99.930	87.790	99.533	87.441	98.403	86.449	96.308	84.608
17	0.0685	29.53	25.947	100	87.852	99.998	87.850	99.955	87.812	99.663	87.556	98.756	86.759	96.969	85.189
18	0.0725	30.39	26.699	100	87.852	99.999	87.851	99.971	87.827	99.757	87.638	99.031	87.000	97.512	85.666
19	0.0766	31.22	27.430	100	87.852	100	87.851	99.982	87.836	99.825	87.698	99.245	87.188	97.957	86.057
20	0.0806	32.03	28.143	100	87.852	100	87.852	99.988	87.841	99.873	87.741	99.412	87.335	98.322	86.378
21	0.0846	32.83	28.838	100	87.852	100	87.852	99.992	87.845	99.909	87.771	99.541	87.449	98.622	86.641
22	0.0887	33.60	29.517	100	87.852	100	87.852	99.995	87.847	99.934	87.794	99.642	87.538	98.868	86.857
23	0.0927	34.35	30.180	100	87.852	100	87.852	99.997	87.849	99.952	87.810	99.721	87.607	99.070	87.035
24	0.0967	35.09	30.829	100	87.852	100	87.852	99.998	87.850	99.966	87.822	99.783	87.661	99.236	87.180
25	0.1007	35.82	31.465	100	87.852	100	87.852	99.999	87.851	99.975	87.830	99.830	87.703	99.372	87.300

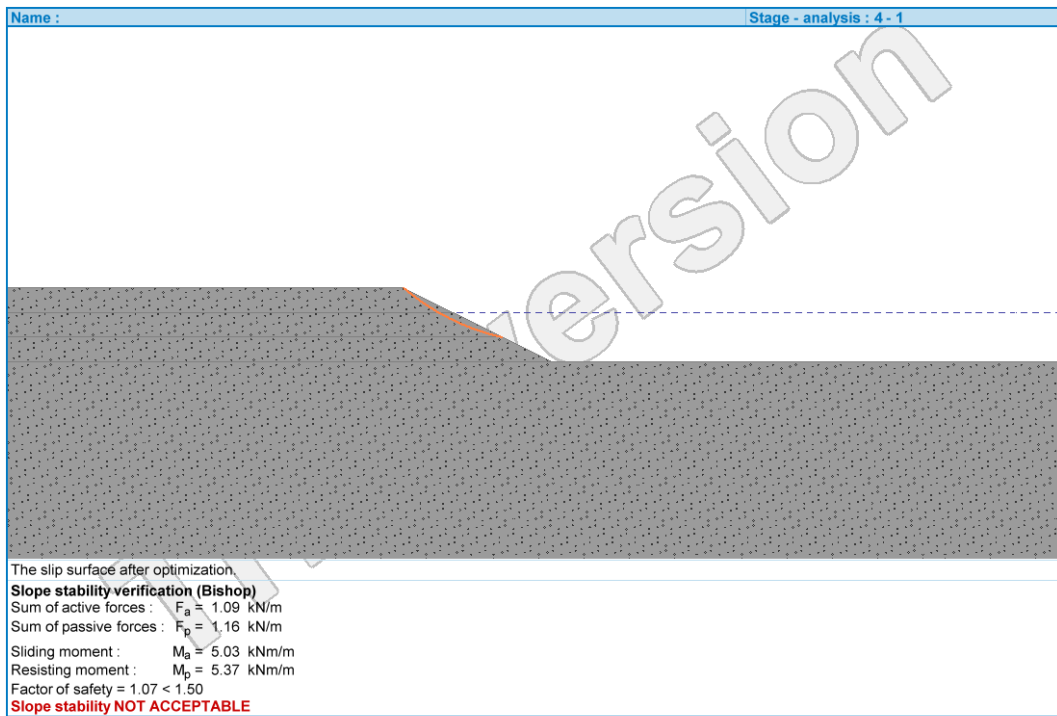
## Lampiran 5 Bidang Gelincir untuk Kemiringan 1 : 2



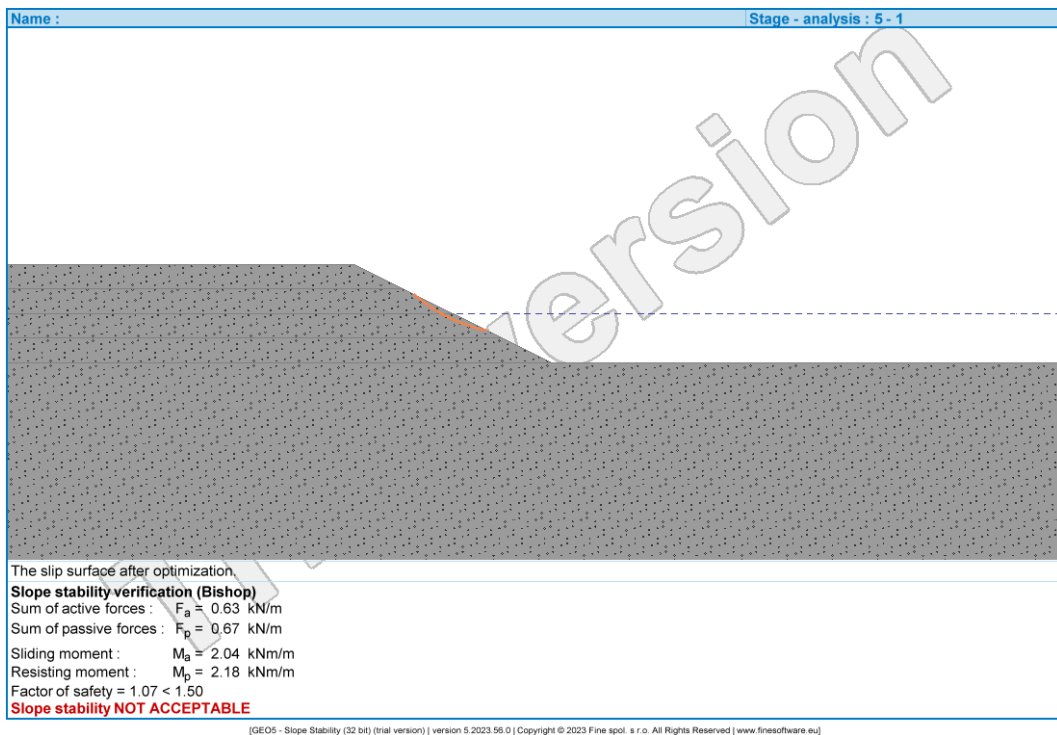
## Bidang Gelincir Timbunan 1



## Bidang Gelincir Timbunan 2

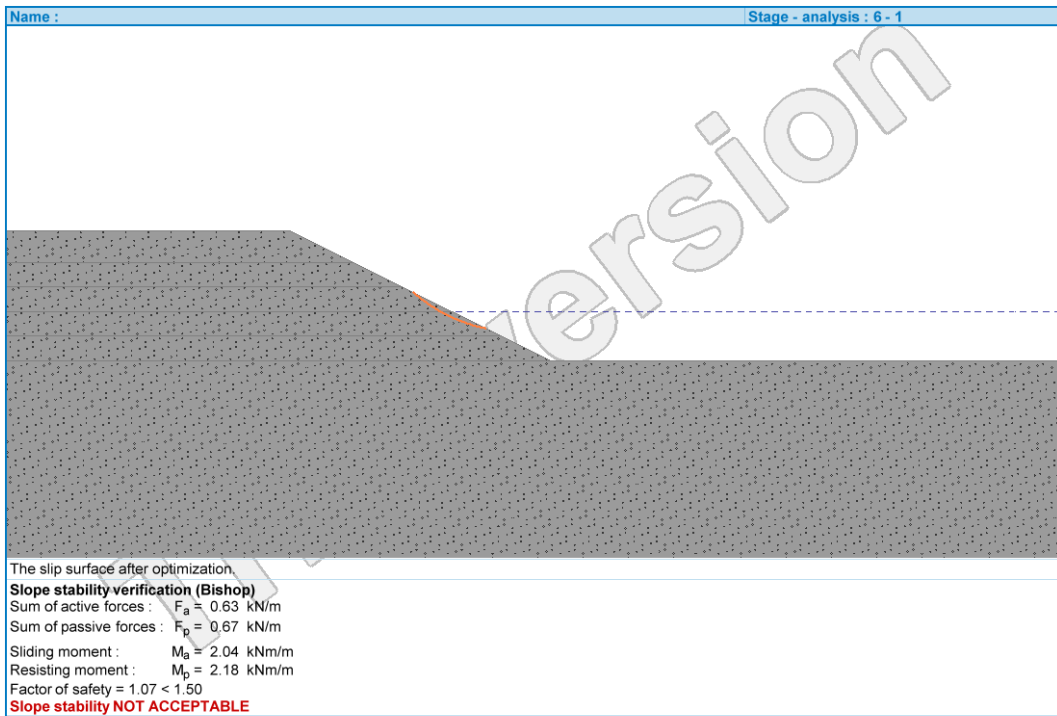


### Bidang Gelincir Timbunan 3



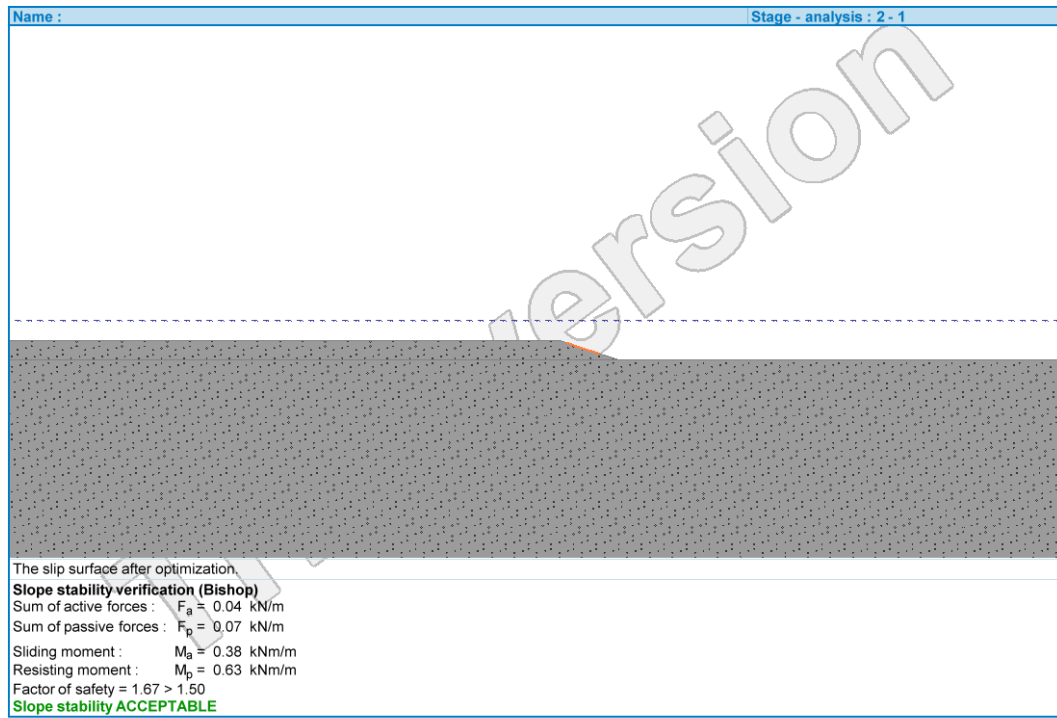
### Bidang Gelincir Timbunan 4



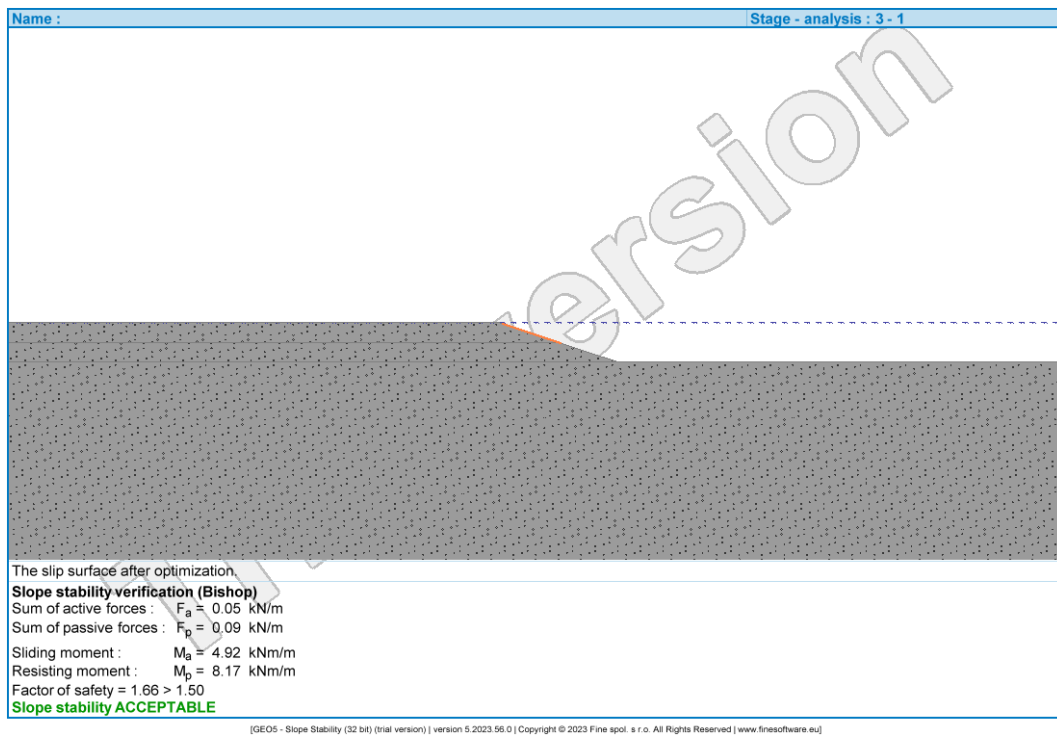


## Bidang Gelincir Timbunan 5

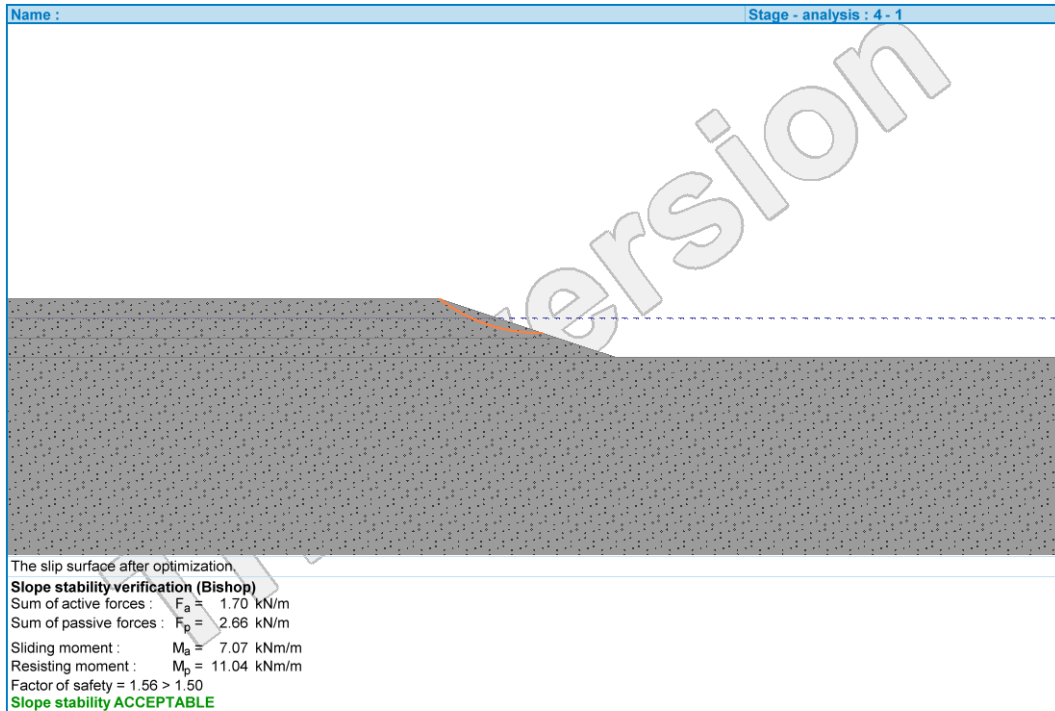
## Lampiran 6 Bidang Gelincir untuk Kemiringan 1 : 3



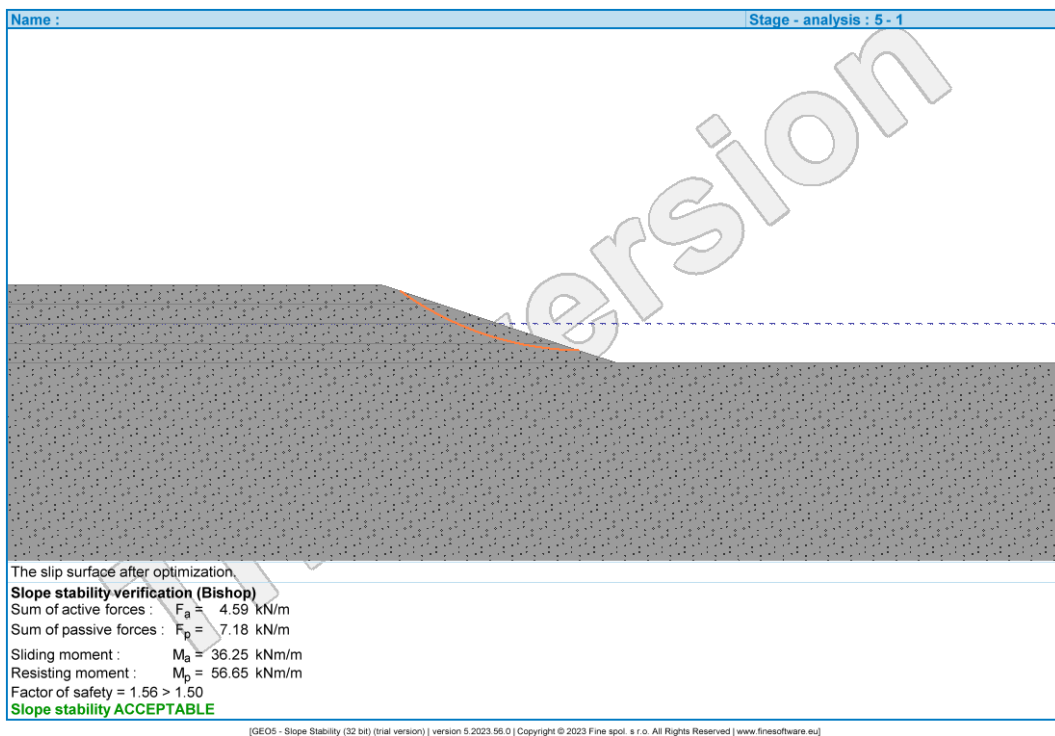
## Bidang Gelincir Timbunan 1



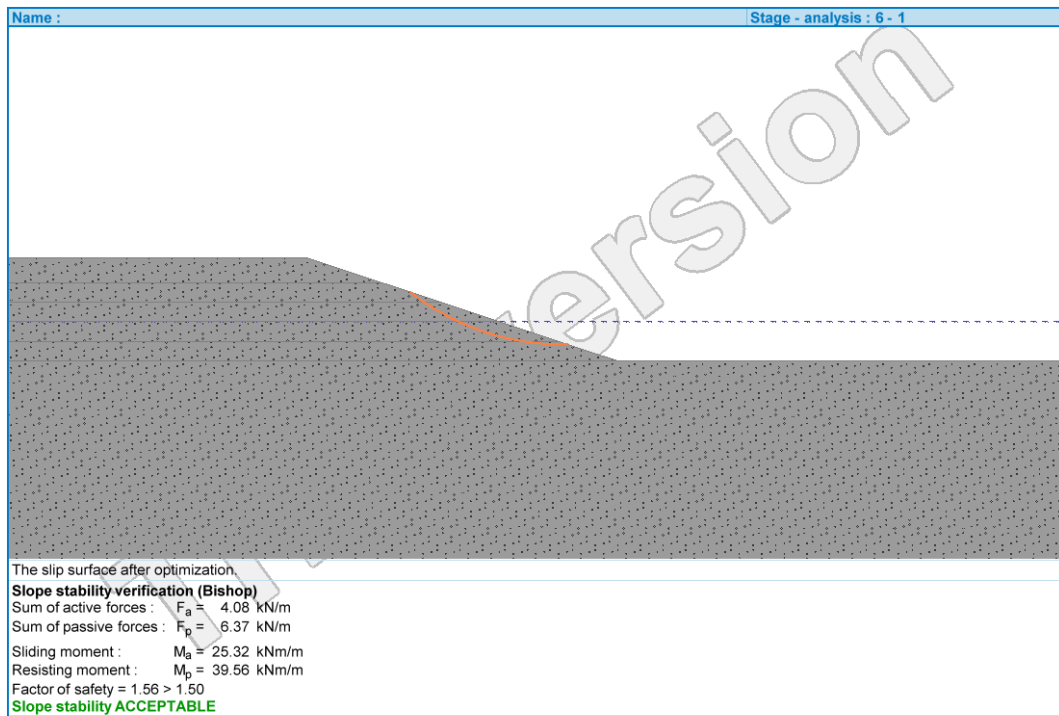
## Bidang Gelincir Timbunan 2



### Bidang Gelincir Timbunan 3

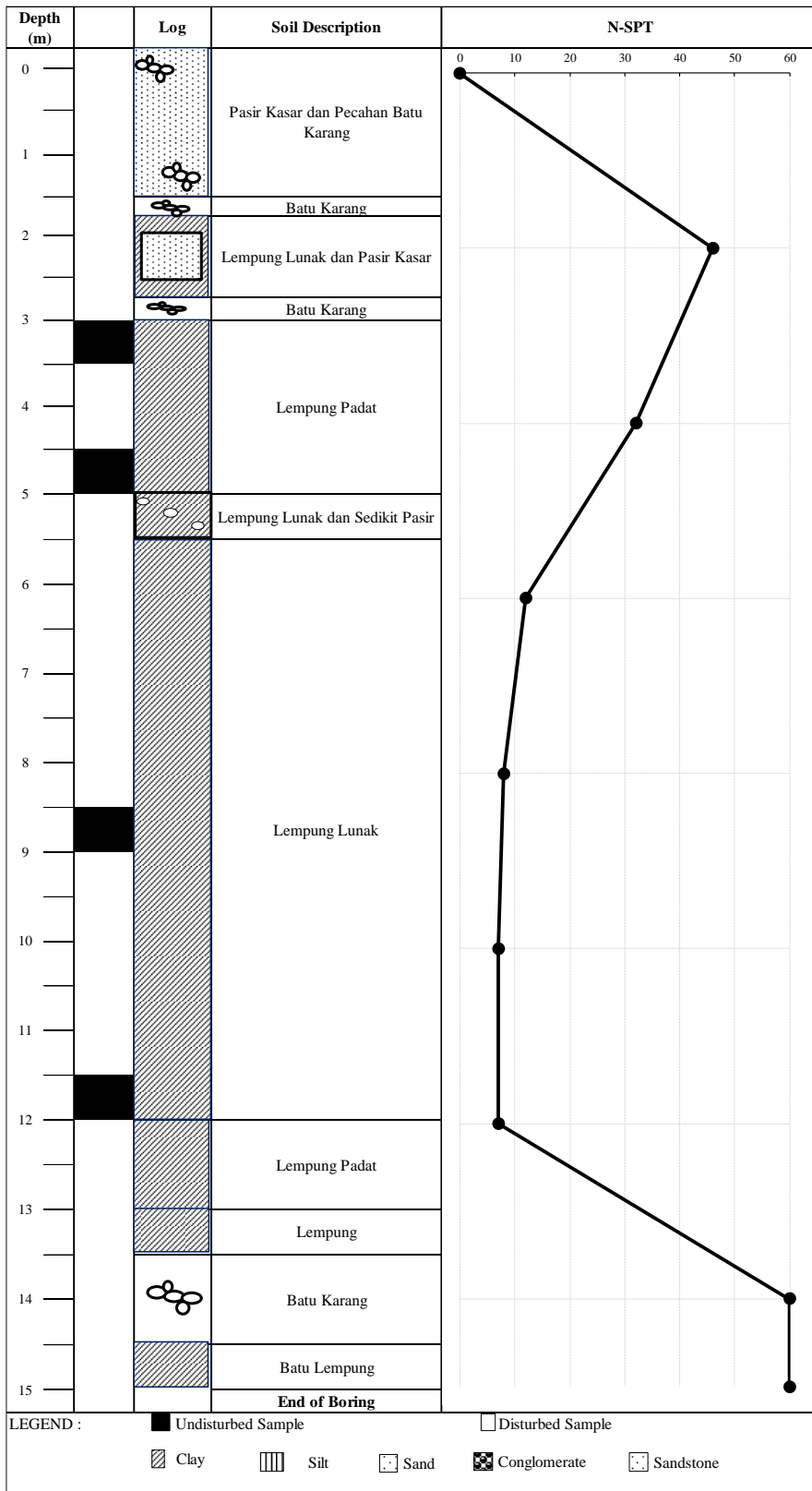


### Bidang Gelincir Timbunan 4



## Bidang Gelincir Timbunan 5

### Lampiran 7 Pengujian *Standard Penetration Test (SPT)*



Lampiran 8 Data pemeriksaan kadar air

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
<b>WATER CONTENT</b>	
ASTM D2216	

Titik Test			BH-03(P-02)	
			11,50-12,00	
No Container			B7	B2
Weight of container	(W1)	gram	36,54	32,27
Weight of container + wet soil	(W2)	gram	93,10	95,70
Weight container + dry soil	(W3)	gram	75,60	78,40
Weight of water	( $W_w = W_2 - W_3$ )	gram	17,50	17,30
Weight of dry sample	( $W_s = W_3 - W_1$ )	gram	39,06	46,13
Water content	(w)	(%)	44,80	37,50
Average water content	(w)	(%)	41,15	

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
<b>WATER CONTENT</b>	
ASTM D2216	

Titik Test			BH-03(P-02)	
			14,00-14,50	
No Container			B4	B5
Weight of container	(W1)	gram	32,24	5,08
Weight of container + wet soil	(W2)	gram	71,70	22,80
Weight container + dry soil	(W3)	gram	62,40	17,20
Weight of water	( $W_w = W_2 - W_3$ )	gram	9,30	5,60
Weight of dry sample	( $W_s = W_3 - W_1$ )	gram	30,16	12,12
Water content	(w)	(%)	30,84	46,20
Average water content	(w)	(%)	38,52	

Lampiran 9 Data pemeriksaan berat isi

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
UNIT WEIGHT	
ASTM C29, AASHTO T19	

Bore Hole		BH-03(P-02)
Depth (m)		11,50-12,00
Water content	(w) (%)	41,15
Weight of mould	(W1) gram	113,5
Weight of soil + ring	(W2) gram	367,2
Weight of wet	(Wt) gram	253,7
Volume of ring	cm <sup>3</sup>	126,63
Unit weight	(Y) gram/cm <sup>3</sup>	2,003
Dry unit weight	(Yd) gram/cm <sup>3</sup>	1,419

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
UNIT WEIGHT	
ASTM C29, AASHTO T19	

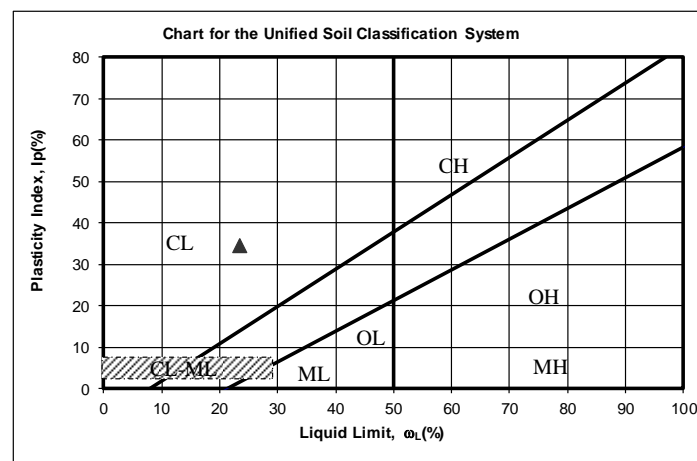
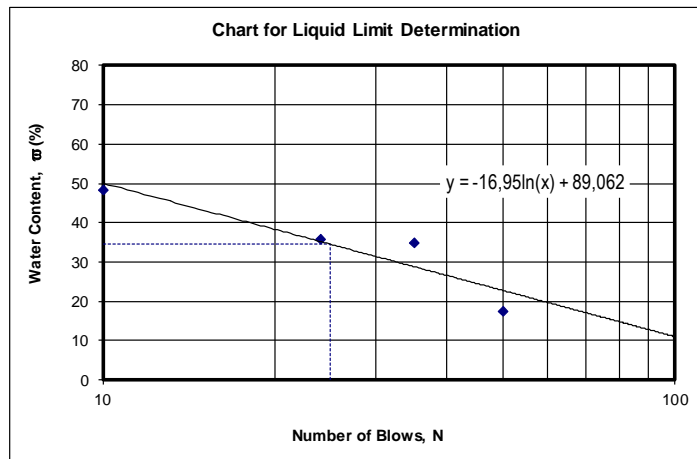
Bore Hole		BH-03(P-02)
Depth (m)		14,00-14,50
Water content	(w) (%)	38,52
Weight of mould	(W1) gram	113,5
Weight of soil + ring	(W2) gram	341,2
Weight of wet	(Wt) gram	227,7
Volume of ring	cm <sup>3</sup>	126,63
Unit weight	(Y) gram/cm <sup>3</sup>	1,798
Dry unit weight	(Yd) gram/cm <sup>3</sup>	1,298

## Lampiran 10 Pemeriksaan batas-batas

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
<b>ATTERBERG LIMITS</b>	
ASTM D4318, D421, D423, D424, D2217, AASHTO T87, T89, T90, T416	

Liquid Limit (LL)		10	24	35	50	Plastic Limit (PL)	
Container		A4	A15	A22	A2	A4	A15
Mass of wet soil+container	gram	16,22	12,83	16,54	17,66	14,98	13,99
Mass of dry soil+container	gram	12,55	10,75	13,54	15,76	13,96	13,11
Mass of moisture	gram	3,67	2,08	3,00	1,90	1,02	0,88
Mass of container	gram	4,96	4,96	4,96	4,96	4,96	4,92
Mass of dry soil	gram	7,59	5,79	8,58	10,80	9,00	8,19
Moisture content	(%)	48,35	35,92	34,97	17,59	11,33	10,74

Liquid Limit (%)	Plastic Limit (%)	Plasticity Index
34,50	11,04	23,46
USCS Classification		CL



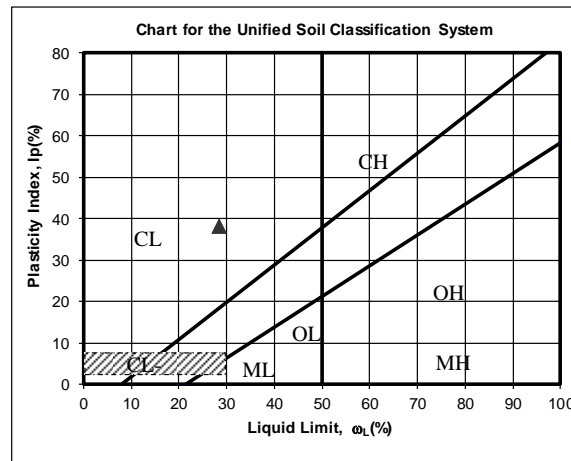
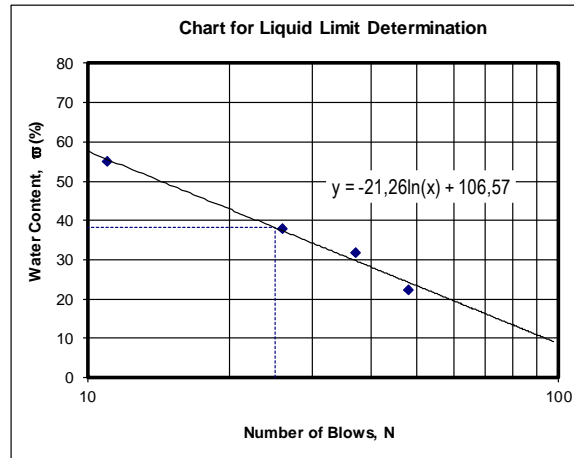


Tested By : TIM CV. KONSULTAN ENJINIRING MULIADI  
 Checked By : FADRIA HANDAYANI, ST  
 Date : OKT 2020

**ATTERBERG LIMITS**

ASTM D4318, D421, D423, D424, D2217, AASHTO T87, T89, T90, T416

Liquid Limit (LL)	11	26	37	48	Plastic Limit (PL)	
Container	A4	A15	A22	A2	A4	A15
Mass of wet soil+con gram	17,22	15,44	16,44	15,4	13,44	13,22
Mass of dry soil+cont gram	12,87	12,56	13,67	13,5	12,54	12,64
Mass of moisture gram	4,35	2,88	2,77	1,90	0,90	0,58
Mass of container gram	4,96	4,96	4,98	4,96	4,96	4,96
Mass of dry soil gram	7,91	7,60	8,69	8,54	7,58	7,68
Moisture content (%)	54,99	37,89	31,88	22,25	11,87	7,55
	Liquid Limit (%)		Plastic Limit (%)		Plasticity Index	
	38,14		9,71		28,42	
	USCS Classification				CL	



Lampiran 11 Pemeriksaan berat jenis

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
<b>SPECIFIC GRAVITY</b>	
ASTM D854, C127, C128, AASHTO T84, T85, T100	

Bore Hole			BH-03(P-02)	
Depth (m)			11,50-12,00	
No. Piknometer			8	5
Weight of piknometer	(W1)	gram	33,1	21
Weight of piknometer + soil	(W2)	gram	36,85	33,82
Weight of soil	(Wt=W2-W1)	gram	3,75	12,82
Temperature		°C	28	28
Weight of piknometer + water at T°C	(W4)	gram/cm <sup>3</sup>	72,8	75,4
W5 = W2-W1+W4		gram	76,55	88,22
Weight of piknometer+water+soil	(W3)	gram	75,11	83,22
Volume of soil	(W6=W5-W3)	gram	1,44	5,00
Specific gravity	(W7=Wt/W6)	gram	2,604	2,564
Average			2,584	

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
<b>SPECIFIC GRAVITY</b>	
ASTM D854, C127, C128, AASHTO T84, T85, T100	

Bore Hole			BH-03(P-02)	
Depth (m)			14,00-14,50	
No. Piknometer			1	3
Weight of piknometer	(W1)	gram	21,4	31
Weight of piknometer + soil	(W2)	gram	36,23	35,89
Weight of soil	(Wt=W2-W1)	gram	14,83	4,89
Temperature		°C	29	28
Weight of piknometer + water at T°C	(W4)	gram/cm <sup>3</sup>	70,5	81,7
W5 = W2-W1+W4		gram	85,33	86,59
Weight of piknometer+water+soil	(W3)	gram	79,45	84,73
Volume of soil	(W6=W5-W3)	gram	5,88	1,86
Specific gravity	(W7=Wt/W6)	gram	2,522	2,629
Average			2,576	

## Lampiran 12 Analisa saringan dan hirdrometer

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
<b>SIEVE ANALYSIS &amp; HYDROMETER</b>	

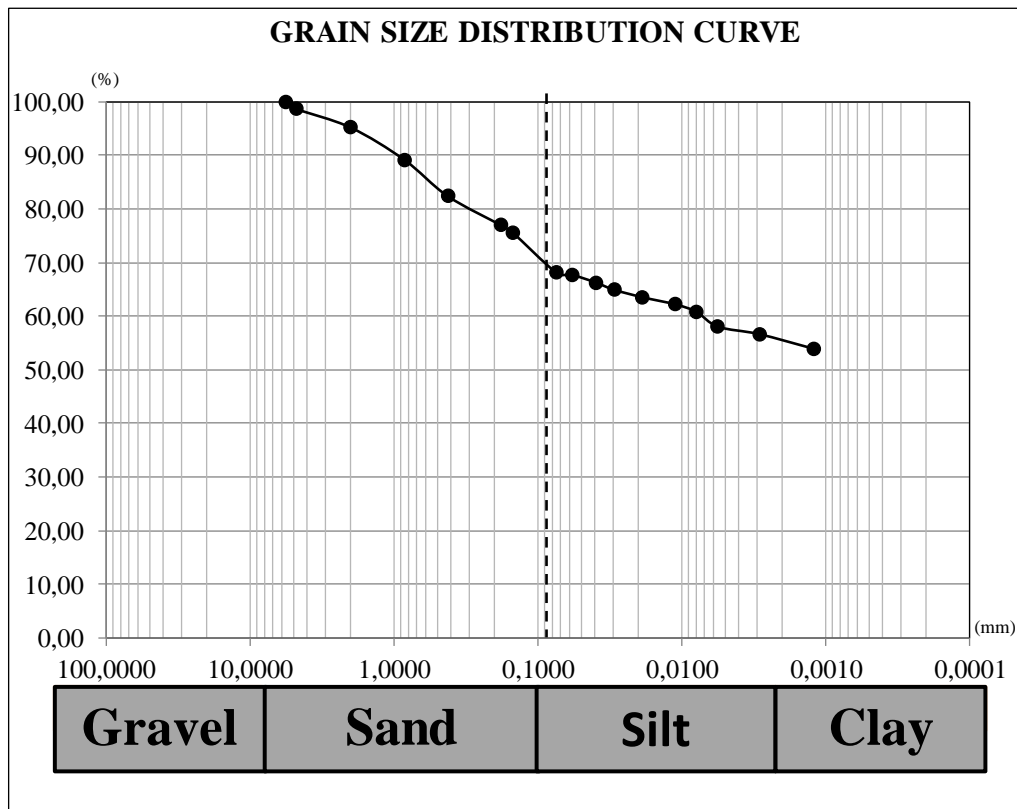
Sieve Analysis									
Weight of soil :		338,00 gram			Titik Test :		BH-03(P-02)		
					Depth :		11,50-12,00 m		
Sieve No	Size (mm)	Mass Retained		$\Sigma$ Mass Retained (gram)	Percent Cummulative				
		(gram)	%		Retained	Finer			
3/8	5,660	0,00	0,00	0,00	0,00	100,00			
4	4,750	4,66	1,38	4,66	1,38	98,62			
10	2,000	11,67	3,45	16,33	4,83	95,17			
20	0,850	31,94	9,45	36,60	10,83	89,17			
40	0,425	22,90	6,78	59,50	17,60	82,40			
80	0,180	18,50	5,47	78,00	23,08	76,92			
100	0,150	4,50	1,33	82,50	24,41	75,59			
200	0,075	25,10	7,43	107,60	31,83	68,17			
Hydrometer Analysis									
					Gs	:	2,599		
					Hydrometer No	:	151 H		
N' = % lolos saringan No. 200 X N					0,682				
Berat tanah kering :					50 gram				
Time (min.)	RH	Tm	Temp. C	R-Rw	N %	Zr (cm)	Zr t	D (mm)	N' (%)
0,5	46	1	28	47	99,280	10,60	4,604	0,0575	67,6751
1	45	1	28	46	97,256	10,20	3,194	0,0399	66,2954
2	44	1	28	45	95,232	11,20	2,366	0,0296	64,9157
5	43	1	28	44	93,208	11,40	1,510	0,0189	63,536
15	42	1	28	43	91,184	11,70	0,883	0,0110	62,1563
30	41	1	28	42	89,160	12,00	0,632	0,0079	60,7765
60	39	1	28	40	85,112	12,20	0,451	0,0056	58,0171
240	38	1	28	39	83,088	12,50	0,228	0,0029	56,6374
1440	36	1	28	37	79,040	12,90	0,095	0,0012	53,8779

Tested By : TIM CV. KONSULTAN ENJINIRING MULIADI  
Checked By : FADRIA HANDAYANI, ST  
Date : OKT 2020

SIEVE ANALYSIS & HYDROMETER

Titik Test : BH-03(P-02)  
Depth : 11,50-12,00 m

Grafik



Tested By : TIM CV. KONSULTAN ENJINIRING MULIADI  
 Checked By : FADRIA HANDAYANI, ST  
 Date : OKT 2020

SIEVE ANALYSIS & HYDROMETER

Sieve Analysis

Weight of soil : 140,70 gram Titik Test : BH-03(P-02)  
 Depth : 14,00-14,50 m

Sieve No	Size (mm)	Mass Retained		Σ Mass Retained (gram)	Percent Cummulative	
		(gram)	%		Retained	Finer
3/8	5,660	0,00	0,00	0,00	0,00	100,00
4	4,750	1,50	1,07	1,50	1,07	98,93
10	2,000	2,06	1,46	3,56	2,53	97,47
20	0,850	3,84	2,73	5,34	3,80	96,20
40	0,425	2,99	2,13	8,33	5,92	94,08
80	0,180	2,52	1,79	10,85	7,71	92,29
100	0,150	0,70	0,5	11,55	8,21	91,79
200	0,075	3,85	2,74	15,40	10,95	89,05

Hydrometer Analysis

Gs : 2,599  
 Hydrometer No : 151 H

N' = % lolos saringan No. 200 X N 0,891  
 Berat tanah kering : 50 gram

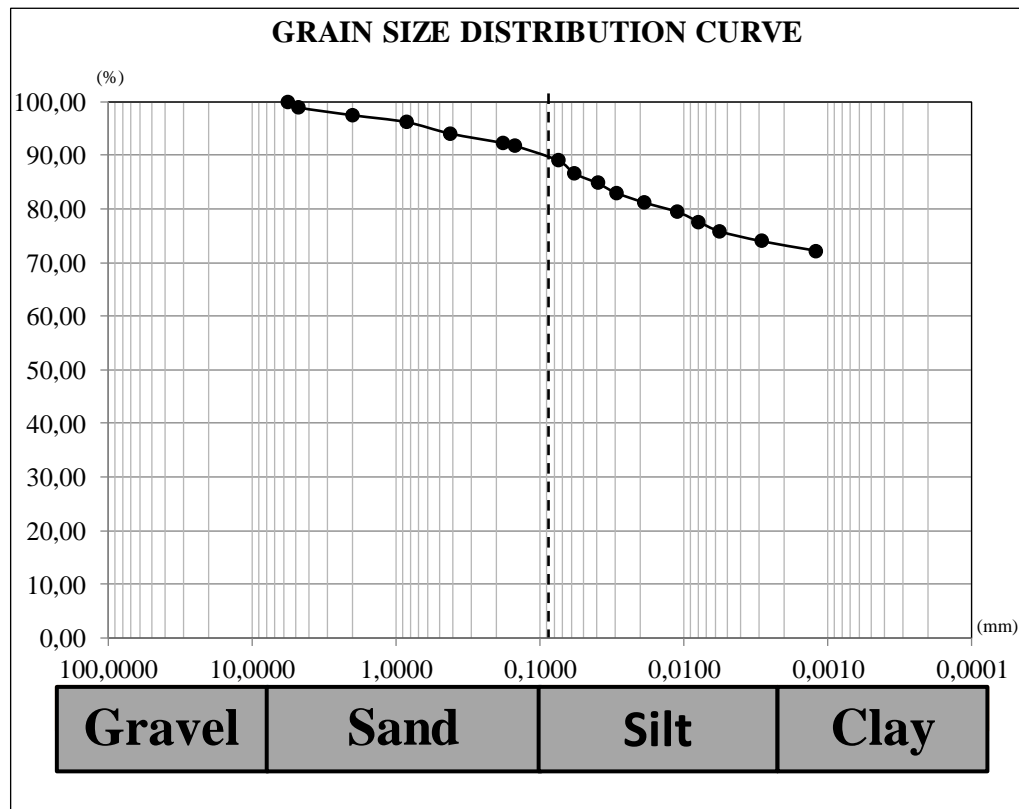
Time (min.)	RH	Tm	Temp. C	R-Rw	N %	Zr (cm)	Zr t	D (mm)	N' (%)
0,5	45	1	28	46	97,256	10,60	4,604	0,0575	86,6113
1	44	1	28	45	95,232	10,20	3,194	0,0399	84,8088
2	43	1	28	44	93,208	11,20	2,366	0,0296	83,0063
5	42	1	28	43	91,184	11,40	1,510	0,0189	81,2037
15	41	1	28	42	89,160	11,70	0,883	0,0110	79,4012
30	40	1	28	41	85,112	12,00	0,632	0,0079	77,5987
60	39	1	28	40	83,088	12,20	0,451	0,0056	75,7962
240	38	1	28	39	81,064	12,50	0,228	0,0029	73,9936
1440	37	1	28	38	79,040	12,90	0,095	0,0012	72,1911

Tested By : TIM CV. KONSULTAN ENJINIRING MULIADI  
Checked By : FADRIA HANDAYANI, ST  
Date : OKT 2020

SIEVE ANALYSIS & HYDROMETER

Titik Test : BH-03(P-02)  
Depth : 14,00-14,50 m

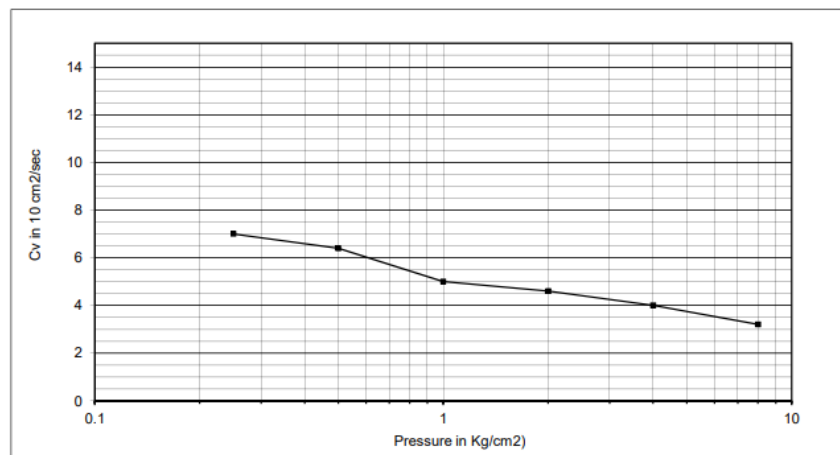
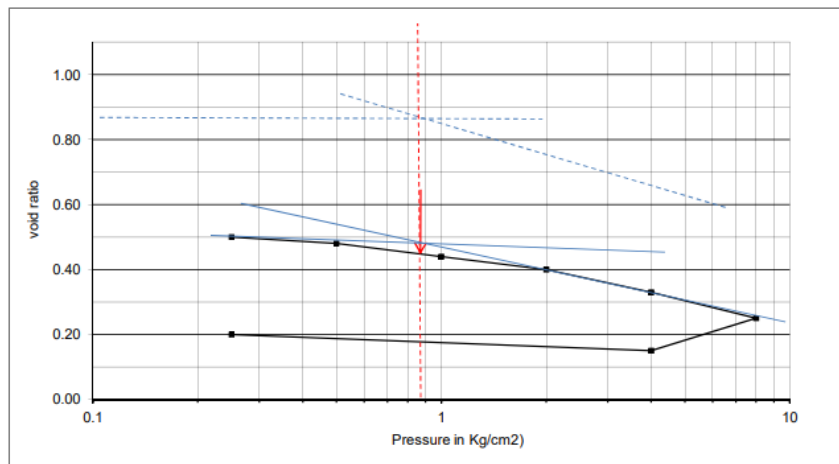
Grafik



### Lampiran 13 Pengujian konsolidasi

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
<b>CONSOLIDATION TEST</b>	

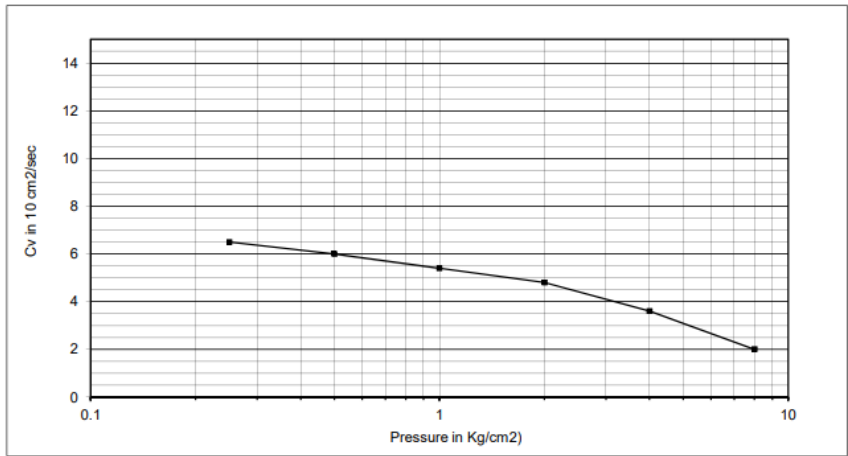
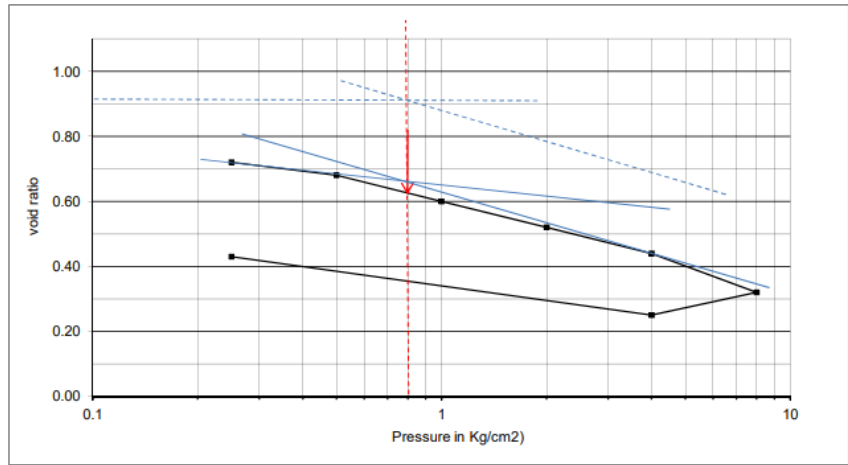
Borehole No	: BH-03(P-02)	Sample Type	: Undisturbed
Sample No	: 3	Depth	: 11,50-12,00 m



Max Precompression	0,89	Sample Area	19,28 cm <sup>2</sup>
Insitu Void Ratio ( e )	0,45	Sample Height	2 cm
Coef Consolidation, $C_v$	0,0053		
Compression Index, $C_c$	0,073		

Tested By	: TIM CV. KONSULTAN ENJINIRING MULIADI
Checked By	: FADRIA HANDAYANI, ST
Date	: OKT 2020
<b>CONSOLIDATION TEST</b>	

Borehole No	: BH-03(P-02)	Sample Type	: Undisturbed
Sample No	: 4	Depth	: 14,00-14,50 m



Max Precompression	0,81	Sample Area	19,28 cm <sup>2</sup>
Insitu Void Ratio ( e )	0,63	Sample Height	2 cm
Coef Consolidation, Cv	0,0056		
Compression Index, Cc	0,13		