DAFTAR PUSTAKA

Ariani, Finna Widya, Muhammad Zainuri, dan Gentur Handoyo. (2013). Study Run-up Gelombang pada Offshore Breakwater di Pantai Slamaran Pekalongan. 2(1), 1-8.

Binumol, S., Rao, Subba., Hedge, Arkal Vital. (2015). Runup and Rundown Characteristics of an Emerged Seaside Perforated Quarter Circle Breakwater. Aquatic Procedia. 4, 234-239.

Departemen Kelautan dan Perikanan Direktorat Jenderal Perikanan Tangkap. (2001). Pedoman Kerjasama Operasional Pelabuhan Perikanan. Jakarta: Direktorat Prasarana Perikanan Tangkap Proyek Pengembangan danPemanfaatn Sumberdaya Perikanan Tangkap Pusat.

Hatta, M. P., Puspita, A.I.D., Thaha, M.A., Karamma., Pongmanda, S., Mustari,A.S., Ibrahim, M. (2020). Experimental study of wave Reflection in Breakwater Overtopping Catcher Model. In IOP Conferences Series : Materials Science and Engineering (Vol. 875, No.1, p. 012026). IOP Publishing.

Ibrahim, Mukhlis. (2020). Run-up dan Run-down Gelombang pada Dinding Kedap Kemiringan Ganda (105^{o} dan 45^{o}) secara Eksperimental. Universitas Hasanuddin. Makassar.

M. Furqon Azis. (2005). GERAK AIR DILAUT. Journal of Oceanography, 50(3), 205-207. Jakarta.

Meer, Jentsje van der., Stam, J. W. (1992).Wave Run-up on Smooth and Rock Slopes of Coastal Structures. Journal of Waterway, Port, Coastal, and Ocean Engineering 118 (5), 534-550.

Muliati, Yati. (2020). Rekayasa Pantai. Bandung: Itenas.

Nugroho, W. T. (2020) Pengaruh Kekasaran Dinding Lereng Revetment Terhadap Run-up dan Run-down Gelombang. Doktoral Dissertation. Universitas Hasanuddin. Makassar.

Parauba, R., Jasin, M.I., & Mamoto, J. D. (2016). Analisa karakteristik gelombang pecah di pantai niampak utara. Jurnal Sipil Statik, 4(10), 595-603. Manado.

Puspita, A. I. D., Thaha, M. A., Hatta, M. P., Mustari, A. S., Pongmanda, S., Karamma, R., & Ibrahim, M. (2022). Laboratory Investigation on Wave Run-up on a Dual-Function Breakwater. In AIP Conference Proceedings (Vol. 2543, No.1, p. 03002). AIP Publishing LLC.

Rohman, R. B., Salim, N., Irawati, I. (2021). Study Breakwater untuk Pelabuhan iliter di Situbondo. Jurnal Smart Teknologi, 3(1), 1-11.

Akbar., Nasrullah. (2017). Eksperimental Peredam Gelombang pada ruktur Breakwater Tenggelam. Universitas Muhammadiyah. Makassar.

Setyawan, R., Setiyono, H., & Rochaddi, B. (2017). Studi Rip Current Di Pantai Taman, Kabupaten Pacitan. Journal of Oceanography, 6 (4), 639-649. Semarang.

Thaha, M. A., Puspita, A. I. D., & Minggu, W., Haeruddin (2013). The Performance of Perforated Screen Seawall in Dissipating Waves, Minimizing Reflected Wave and Run-up/Run-down. in 4th Internasional Seminar of HATHI (pp6-8).

Thaha, M. A., Mukhsan, P. H., Subhan, A. M., & Dwipuspita, A. I. (2018). Single Slope Shore Protection as a Wave Energy Catcher. In MATEC web o Conferences (vo. 203, p. 01008). EDP Sciences.

Triatmodjo, Bambang. (1996). Pelabuhan. Yogyakarta: Beta Offset.

Triatmodjo, Bambang. (1999). Teknik Pantai. Yogyakarta: Beta Offset.

Triatmodjo, Bambang. (2008). Teknik Pantai. Yogyakarta: Beta Offset.

Viksburg, Mississippi. (1984). Shore Protection Manual vol.1. Whasington. Departmen of The Army US Army Corps of Engineer.

Yannovita, W., BEsperi, B., Gunawan, G. (2017). Desain Breakwater Sisi Miring sebagai Upaya Mengantisipasi Limpasan Air Laut pada Bangunan Revetment di Pantai Malabero Kota Bengkulu. Inersia: Jurnal Teknik Sipil, 9(2), 1-10.

Yuliamangesti, A. A. (2017). Evaluasi Kinerja Bangunan Pemecah Gelombang (Breakwater) di Pantai Puger Jember.

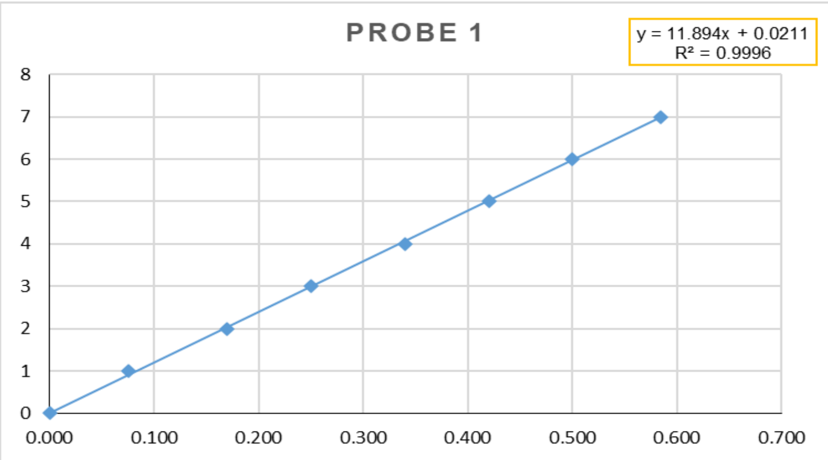
Yuwono, Nur. (1996). Perencanaan Model Hidraulik. Laboratorium Hidraulik dan Hidrologi Pusat Antar Universitas Ilmu Teknik Universitas Gadjah MAda. Yogyakarta.

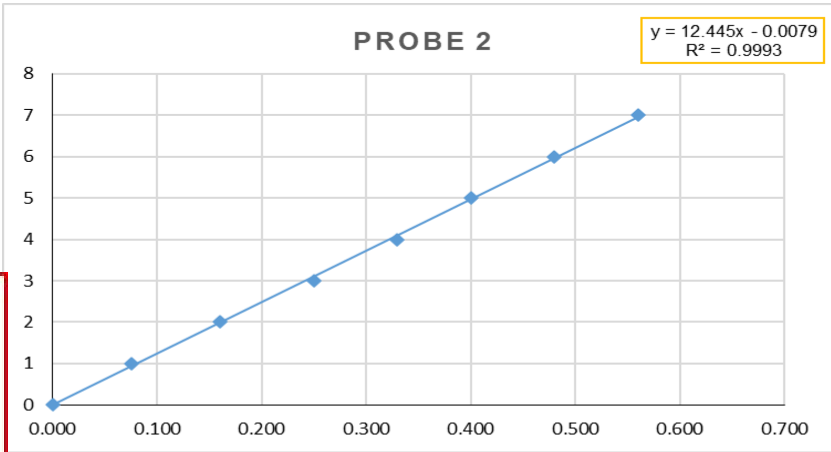
LAMPIRAN

Lampiran 1. Hasil Kalibrasi *Wave Probe*

a. Kalibrasi *wave probe* pada kedalaman 15 cm

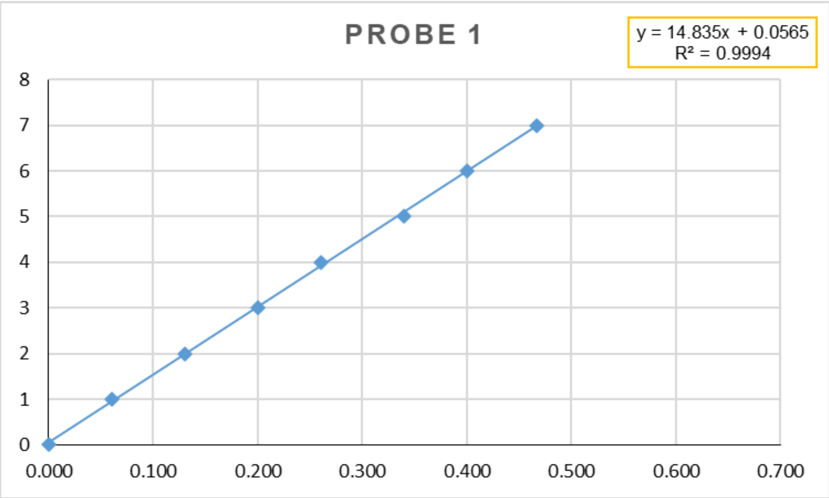
Elevasi *Wave Probe* (cm)	Konduktivitas (Volt)	
	Probe 1	**Probe 2**
0	0.000	0.000
1	0.075	0.075
2	0.170	0.160
3	0.250	0.250
4	0.340	0.330
5	0.420	0.400
6	0.500	0.480
7	0.585	0.560

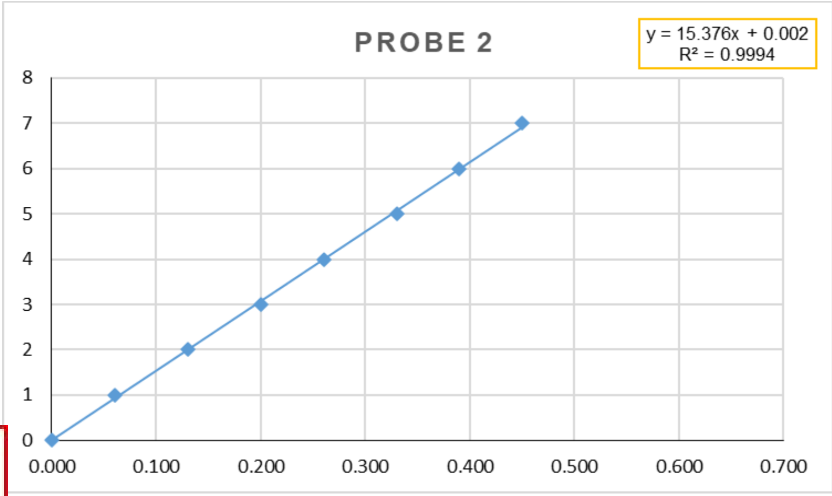




b. Kalibrasi *wave probe* pada kedalaman 18 cm

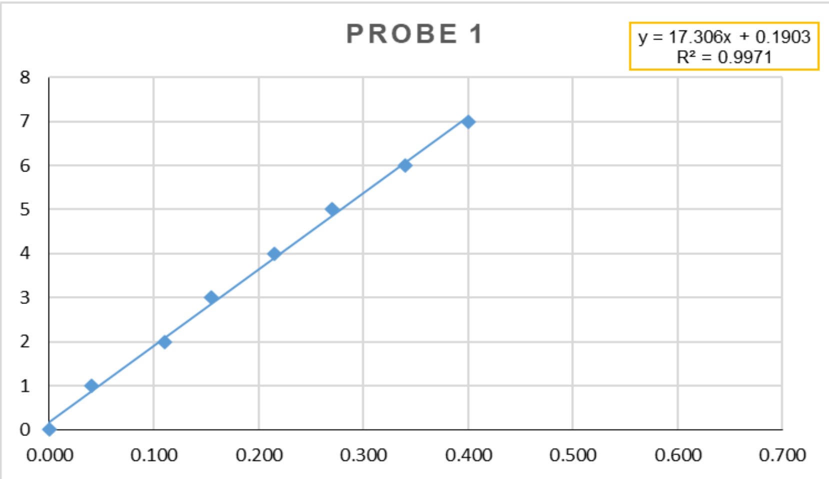
Elevasi *Wave Probe* (cm)	Konduktivitas (Volt)	
	Probe 1	Probe 2
0	0.000	0.000
1	0.060	0.060
2	0.130	0.130
3	0.200	0.200
4	0.260	0.260
5	0.340	0.330
6	0.400	0.390
7	0.467	0.450

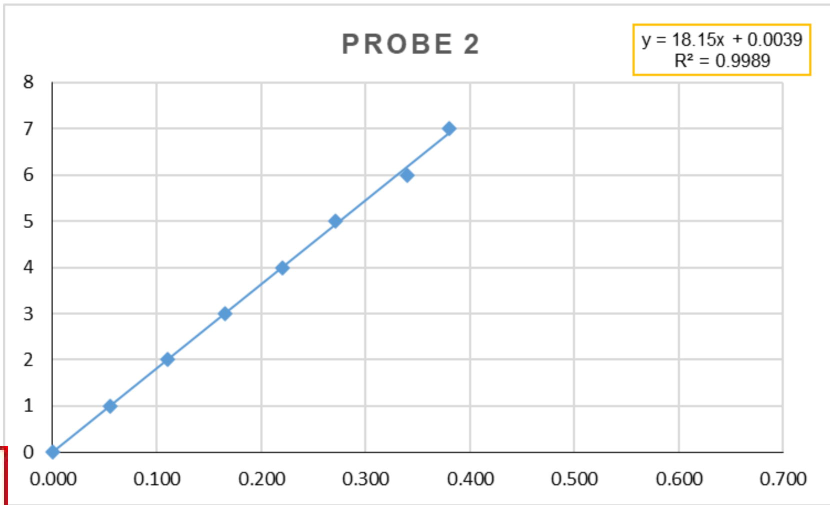




c. Kalibrasi *wave probe* pada kedalaman 21 cm

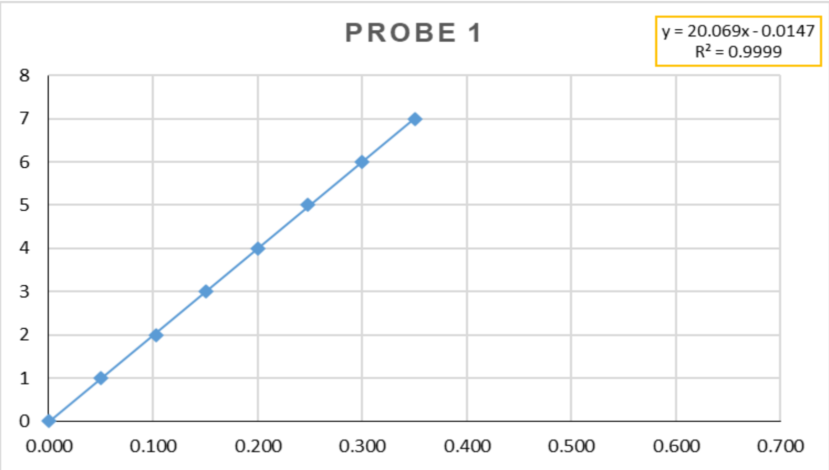
Elevasi *Wave Probe* (cm)	Konduktivitas (Volt)	
	Probe 1	Probe 2
0	0.000	0.000
1	0.040	0.055
2	0.110	0.110
3	0.155	0.165
4	0.215	0.220
5	0.270	0.271
6	0.340	0.340
7	0.400	0.380

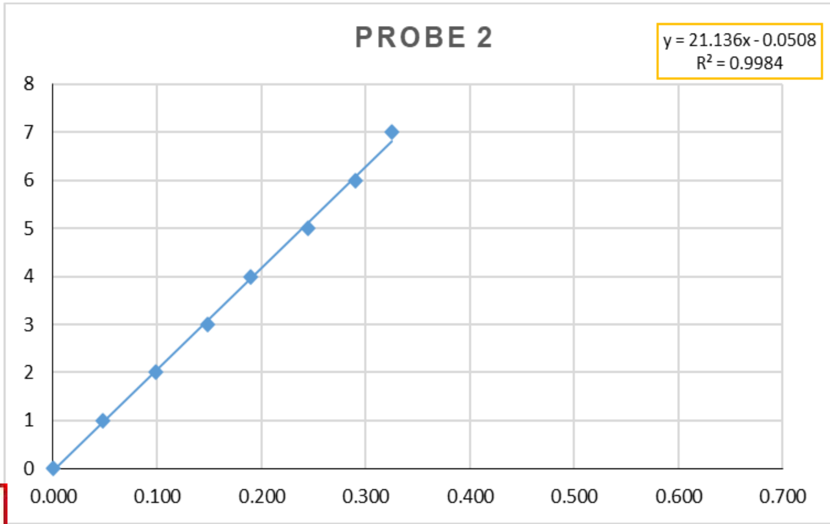




d. Kalibrasi *wave probe* pada kedalaman 24 cm

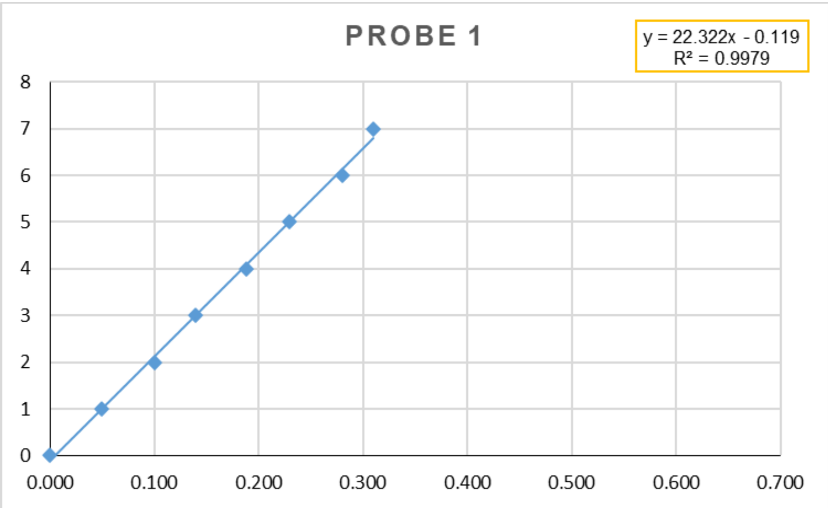
Elevasi *Wave Probe* (cm)	Konduktivitas (Volt)	
	Probe 1	Probe 2
0	0.000	0.000
1	0.050	0.048
2	0.103	0.098
3	0.150	0.148
4	0.200	0.190
5	0.248	0.245
6	0.300	0.290
7	0.350	0.325

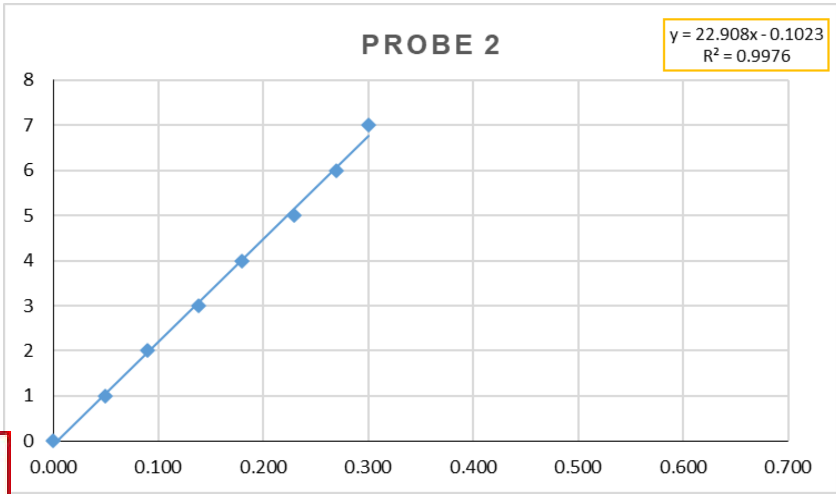




e. Kalibrasi *wave probe* pada kedalaman 27 cm

Elevasi *Wave Probe* (cm)	Konduktivitas (Volt)	
	Probe 1	**Probe 2**
0	0.000	0.000
1	0.050	0.050
2	0.100	0.090
3	0.140	0.139
4	0.188	0.180
5	0.229	0.229
6	0.280	0.270
7	0.310	0.300

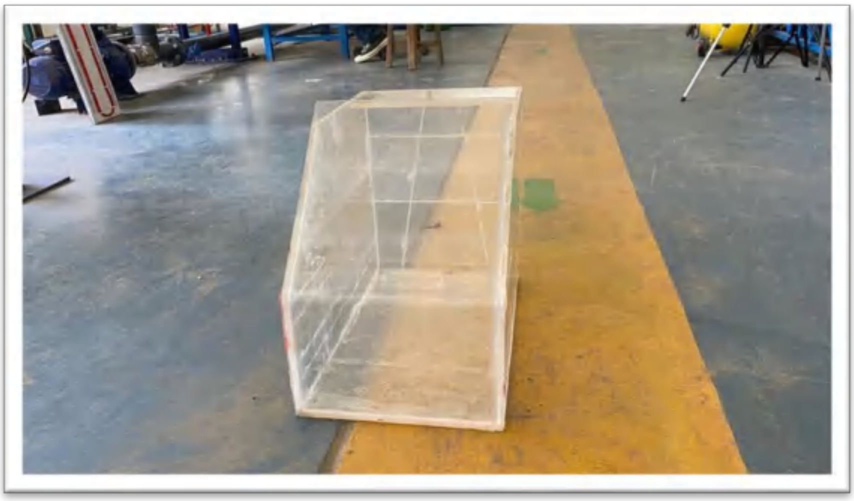




Lampiran 2. Hasil Analisa Data

No.	Kemiringan (tan 45°)	d	Stroke	T	Lo	L	Hi	Ru	Rd	Ru/Hi	Rd/Hi	Hi/L	Ir	d/h	Ir d/h
1	1	15	4	1.1	188.76	122.2292	2.885	4.2	-2.5	1.454	-0.867	0.024	8.089	0.714	5.778
2	1	15	5	1.1	188.76	122.2292	3.955	4.8	-2.8	1.215	-0.708	0.032	6.908	0.714	4.934
3	1	15	6	1.1	188.76	122.2292	3.955	5.6	-2.9	1.405	-0.733	0.032	6.908	0.714	4.934
4	1	15	4	1.3	263.64	148.2057	1.574	2.6	-1.8	1.652	-1.143	0.011	12.941	0.714	9.244
5	1	15	5	1.3	263.64	148.2057	2.182	3.2	-2.1	1.446	-0.962	0.015	10.991	0.714	7.851
6	1	15	6	1.3	263.64	148.2057	2.303	3.3	-2.2	1.443	-0.955	0.016	10.700	0.714	7.643
7	1	15	4	1.5	351.00	173.7084	2.154	3.8	-2.6	1.771	-1.207	0.012	12.765	0.714	9.118
8	1	15	5	1.5	351.00	173.7084	2.423	4.2	-2.8	1.734	-1.156	0.014	12.036	0.714	8.597
9	1	15	6	1.5	351.00	173.7084	2.983	4.6	-3.0	1.542	-1.006	0.017	10.847	0.714	7.748
10	1	18	4	1.1	188.76	131.460	1.827	2.0	-1.2	1.095	-0.657	0.014	10.166	0.857	8.713
11	1	18	5	1.1	188.76	131.460	2.165	2.6	-1.5	1.201	-0.693	0.016	9.338	0.857	8.004
12	1	18	6	1.1	188.76	131.460	2.694	2.9	-1.8	1.076	-0.668	0.020	8.370	0.857	7.174
13	1	18	4	1.3	263.64	160.2785	1.591	2.4	-1.7	1.508	-1.068	0.010	12.872	0.857	11.033
14	1	18	5	1.3	263.64	160.2785	2.384	3.0	-2.2	1.259	-0.923	0.015	10.517	0.857	9.015
15	1	18	6	1.3	263.64	160.2785	3.327	3.5	-2.5	1.052	-0.752	0.021	8.902	0.857	7.631
16	1	18	4	1.5	351.00	188.496	3.376	4.1	-2.6	1.215	-0.770	0.018	10.197	0.857	8.740
17	1	18	5	1.5	351.00	188.496	3.380	4.5	-2.7	1.331	-0.799	0.018	10.190	0.857	8.734
18	1	18	6	1.5	351.00	188.496	3.924	4.7	-3.0	1.198	-0.764	0.021	9.458	0.857	8.106
19	1	21	4	1.1	188.76	139.3626	3.535	3.5	-2.8	0.990	-0.778	0.025	7.308	1	7.308
20	1	21	5	1.1	188.76	139.3626	4.651	4.6	-3.2	0.991	-0.688	0.033	6.371	1	6.371
21	1	21	6	1.1	188.76	139.3626	5.982	6.1	-3.5	1.026	-0.585	0.043	5.617	1	5.617
22	1	21	4	1.3	263.64	170.880	2.321	2.6	-1.7	1.126	-0.723	0.014	10.658	1	10.658
23	1	21	5	1.3	263.64	170.880	2.719	3.4	-2.1	1.258	-0.783	0.016	9.847	1	9.847
24	1	21	6	1.3	263.64	170.880	3.511	3.9	-3.0	1.103	-0.845	0.021	8.666	1	8.666
25	1	21	4	1.5	351.00	201.6783	1.823	2.5	-1.8	1.371	-0.987	0.009	13.874	1	13.874
26	1	21	5	1.5	351.00	201.6783	2.527	3.4	-2.1	1.346	-0.850	0.013	11.786	1	11.786
27	1	21	6	1.5	351.00	201.6783	4.392	4.9	-3.9	1.105	-0.888	0.022	8.940	1	8.940
28	1	24	4	1.1	188.76	146.1957	6.577	7.0	-5.0	1.069	-0.760	0.045	5.357	1.143	6.123
29	1	24	5	1.1	188.76	146.1957	8.403	7.7	-5.5	0.916	-0.655	0.057	4.740	1.143	5.417
30	1	24	6	1.1	188.76	146.1957	9.808	10.5	-5.4	1.073	-0.551	0.067	4.387	1.143	5.014
31	1	24	4	1.3	263.64	180.277	5.452	6.0	-5.4	1.106	-0.990	0.030	6.954	1.143	7.947
32	1	24	5	1.3	263.64	180.277	6.322	7.2	-5.3	1.137	-0.840	0.035	6.458	1.143	7.380
33	1	24	6	1.3	263.64	180.277	6.533	7.8	-5.5	1.194	-0.842	0.036	6.353	1.143	7.260
34	1	24	4	1.5	351.00	213.5235	3.920	4.9	-3.4	1.238	-0.860	0.018	9.463	1.143	10.814
35	1	24	5	1.5	351.00	213.5235	3.922	5.3	-3.7	1.341	-0.944	0.018	9.461	1.143	10.812
36	1	24	6	1.5	351.00	213.5235	4.658	5.7	-4.0	1.224	-0.859	0.022	8.681	1.143	9.921
37	1	27	4	1.1	188.76	152.1028	6.832	7.0	-4.6	1.025	-0.673	0.045	5.256	1.286	6.758
38	1	27	5	1.1	188.76	152.1028	7.217	7.5	-4.9	1.043	-0.679	0.047	5.114	1.286	6.575
39	1	27	6	1.1	188.76	152.1028	9.532	8.3	-6.7	0.871	-0.703	0.063	4.450	1.286	5.722
40	1	27	4	1.3	263.64	188.7171	4.219	4.1	-4.1	0.979	-0.972	0.022	7.905	1.286	10.164
41	1	27	5	1.3	263.64	188.7171	4.286	4.5	-4.2	1.043	-0.980	0.023	7.843	1.286	10.084
42	1	27	6	1.3	263.64	188.7171	5.172	5.4	-4.4	1.048	-0.851	0.027	7.140	1.286	9.180
43	1	27	4	1.5	351.00	224.2674	3.738	4.5	-3.4	1.204	-0.910	0.017	9.690	1.286	12.459
[illegible]	1	27	5	1.5	351.00	224.2674	5.378	6.0	-3.8	1.122	-0.707	0.024	8.078	1.286	10.387
[illegible]	1	27	6	1.5	351.00	224.2674	7.447	8.0	-4.0	1.074	-0.537	0.033	6.865	1.286	8.827

Lampiran 3. Dokumentasi Model Struktur Bangunan Pantai



Lampiran 4. Dokumentasi Penelitian