

INTISARI

Kemajuan perekonomian dan infrastruktur membuat Kota Ambon menjadi tujuan utama masyarakat Maluku untuk bertempat tinggal. Lonjakan penduduk yang tak terkendali berimbas pada menjamurnya pemukiman kumuh di bantaran sungai dan pesisir pantai. Untuk mengatasi hal tersebut, Pemerintah Kota Ambon merancang rencana revitalisasi kawasan pesisir dan bantaran sungai, salah satunya di Pesisir Talake. Pesisir Talake akan difungsikan sebagai taman kota dengan melakukan reklamasi seluas 1.7 hektar yang dibatasi oleh struktur pelindung pantai. Namun, stabilitas struktur pelindung pantai belum dievaluasi dan perencanaan reklamasi belum dilakukan secara matang. Oleh karena itu, dalam penelitian ini akan dilakukan analisis stabilitas struktur pelindung pantai terhadap gaya-gaya yang berpengaruh dan perencanaan reklamasi di wilayah Pesisir Talake.

Perencanaan desain reklamasi dilakukan dengan menganalisis faktor penurunan tanah akibat beban timbunan, kapasitas dukung tanah terhadap timbunan, dan periode konsolidasi tanah dasar. Faktor-faktor tersebut digunakan untuk menentukan ketinggian rencana timbunan, tahapan penimbunan, dan penerapan *vertical drains* dan *preloading* guna mempersingkat periode konsolidasi. Selain itu, guna menunjang pelaksanaan reklamasi, dilakukan analisis stabilitas struktur pelindung pantai eksisting.

Hasil penelitian menunjukkan bahwa struktur pelindung pantai masih mampu menahan momen guling dengan *safety factor* 1.7, gaya geser dengan *safety factor* 1.99, dan tekanan struktur dibawah daya dukung ijin tanah sebesar 105.7 kN/m². Penerapan *vertical drains* pola segitiga dengan jarak 1.25m mampu mempercepat periode konsolidasi dari 30 tahun menjadi 170 hari. Pelaksanaan penimbunan dilakukan secara 7 tahap selama 210 hari dengan penambahan beban *preloading* setinggi 2m. Oleh karena itu, dapat disimpulkan bahwa pelaksanaan reklamasi dapat dilakukan selama 210 hari dan struktur eksisting mampu menopang area reklamasi.

Kata kunci : penurunan tanah, *vertical drains*, *staged construction*, *revetment*, stabilitas struktur pantai

ABSTRACT

Progressive economical and infrastructural advances has made Ambon City as the major destination to reside and settle through the years. Uncontrolled increasing numbers of inhabitant has been influencing the usage of river banks and coastline as a settlement, making floods is almost inevitable. In order to overcome those problems, Ambon Authority has released two masterplans to revitalize the badly damaged coastlines and floodplains, one of them is taken place in Talake. Talake to be seen as a city park in the near future by reclaiming the polluted area of 1.7 hectares which bordered by revetment. However, this reclamation project has never been planned thoroughly and revetment's stability is in doubt. Therefore, this study will design the technical steps and stages to reclaim the Talake coast and evaluate the revetment's stability to protect the reclamation area.

Planning the design of reclamation carried out by analyzing the factors of land subsidence due to embankment load, soil bearing capacity, and a period of consolidation settlement. Those factors used to determine the planned height of embankment, hoarding stages and vertical drains usage in order to shorten the long period of consolidation. In addition, in order to support the implementation of the reclamation, an analysis of existing revetment should be done.

Analysis results shows that revetment structure could cope the overturn momen with safety factor 1.7, shear force with safety factor 1.99, and structural weight still under the allowed bearing capacity of seabed of 105.7 kN/m^2 . The installation of vertical drains proven could accelerate the period of consolidation from 30 years to just in 170 days. The land-filling process could be done by seven steps which last for 210 days. Based on those analysis results aforementioned, could be concluded that the land-filling process of reclamation area could be accomplished by 210 days of construction, and revetment structure could sustain the reclamation area.

Keywords : settlement, vertical drains, staged construction, revetment, coastal structure stability