DAFTAR ISI

HALAMAN JUDUL ...................................................................................... i
HALAMAN PENGESAHAN ....................................................................... ii
LEMBAR BERITA ACARA ....................................................................... iii
MOTTO ........................................................................................................ iv
PERSEMAHAN ............................................................................................. v
KATA PENGANTAR ................................................................................... vii
DAFTAR ISI ................................................................................................ ix
DAFTAR TABEL .......................................................................................... xii
DAFTAR GAMBAR ...................................................................................... xiv
DAFTAR LAMPIRAN .................................................................................. xvi
ABSTRAKSI ................................................................................................. xvii

BAB 1 PENDAHULUAN .............................................................................. 1
  1.1. Latar Belakang .................................................................................... 1
  1.2. Rumusan Masalah .............................................................................. 3
  1.3. Batasan Masalah ................................................................................ 3
  1.4. Tujuan Penelitian .............................................................................. 3
  1.5. Manfaat Penelitian .......................................................................... 4
  1.6. Peta Lokasi ......................................................................................... 4
  1.7. Sistematika Penulisan ....................................................................... 7

BAB II TINJAUAN PUSTAKA .................................................................... 8
  2.1 Tanah .................................................................................................. 8
  2.2 Material Penyusun Tanah .................................................................. 9
  2.3 Tanah Dasar (Subgrade) ................................................................... 10
  2.4 Klasifikasi Tanah ............................................................................... 10
2.4.1. Klasifikasi Tanah Sistem AASHTO ........................................ 12
2.4.2. Klasifikasi Tanah Sistem USCS ........................................... 14
2.5 Sifat Fisik Tanah ......................................................................... 17
  2.5.1. Kadar Air (w) ..................................................................... 17
  2.5.2. Berat Jenis Tanah (Gs) ....................................................... 17
  2.5.3. Analisa Butiran Tanah (Sieve Analysis) ............................. 18
  2.5.4. Batas – batas Atterberg ..................................................... 24
2.6 Sifat Mekanik Tanah .................................................................. 27
  2.6.1. Pengujian Konsolidasi Laboratorium .................................. 27
2.7 Tanah Ekspansif .......................................................................... 32
  2.7.1. Identifikasi Tanah Ekspansif ............................................... 34
2.8 Pengembangan (Swelling) ......................................................... 36
  2.8.1. Uji Tekanan Mengembang ............................................... 41
  2.8.2. Hubungan antara Presentase Mengembang dan Tekanan
          Mengembang ................................................................. 43

BAB III METODE PENELITIAN .......................................................... 45
  3.1. Bahan Penelitian ....................................................................... 46
    3.1.1. Tanah ............................................................................. 46
    3.1.2. Air .................................................................................. 46
  3.2. Tempat Penelitian ..................................................................... 46
  3.3. Persiapan Alat .......................................................................... 46
    3.3.1. Kadar Air ........................................................................ 46
    3.3.2. Berat Jenis Tanah (Gs) ...................................................... 46
    3.3.3. Gamma b (γb) ................................................................. 47
    3.3.4. Sieve Analysis ................................................................. 47
    3.3.5. Atterberg ....................................................................... 49
    3.3.6. Konsolidasi ................................................................. 50
  3.4. Pelaksanaan Penelitian ............................................................. 51
    3.4.1. Kadar Air ................................................................. 51
    3.4.2. Berat Jenis Tanah (Gs) .................................................... 52
    3.4.3. Gamma b (γb) ................................................................. 53
BAB IV HASIL PENELITIAN DAN PEMBAHASAN .................................................. 60
4.1. Hasil Penelitian ......................................................................................... 60
4.1.1. Sifat Fisik Tanah .................................................................................. 60
4.1.1.1. Kadar Air ....................................................................................... 60
4.1.1.2. Berat Jenis Tanah (Gs) ..................................................................... 60
4.1.1.3. Gamma b (\(\gamma_b\)) ........................................................................ 61
4.1.1.4. Sieve Analysis .................................................................................. 61
4.1.1.5. Atterberg ....................................................................................... 63
4.1.2. Sifat Mekanik Tanah ........................................................................... 66
4.1.2.1. Konsolidasi .................................................................................... 66
4.2. Pembahasan Hasil Penelitian ................................................................. 69
4.2.1. Analisis Gradasi Butiran Tanah ............................................................ 69
4.2.1.1. Sistem Klasifikasi AASHTO .............................................................. 69
4.2.1.2. Sistem Klasifikasi Unified ................................................................. 72
4.2.2. Analisis Uji Konsolidasi ..................................................................... 75
4.2.2.1. Grafik Angka Pori (\(e\)) – Tekanan .................................................. 75
4.2.2.2. Compression Index (Cc) ................................................................. 77
4.2.2.3. Index Swelling (Cs) ........................................................................ 79
4.2.2.4. Preconsolidation Pressure (Pc) ...................................................... 81
4.2.2.5. Koefisien Konsolidasi (Cv) .............................................................. 83
4.2.2.6. Nilai Rasio \(\left(\frac{C}{c}\right)\) ........................................................................ 86

BAB V PENUTUP ................................................................................................. 87
5.1. Kesimpulan ............................................................................................... 87
5.2. Saran ......................................................................................................... 88

DAFTAR PUSTAKA ............................................................................................ 89

LAMPIRAN .............................................................................................................. xix